

**Lithotomia vesicae: that is, an accurate description of the stone in the bladder: shewing the causes and pathognomical signs thereof, and chiefly of the method whereby it is to be artificially taken out, both men and women, by section. Wherein severall wayes of operation are described, and the chirurgicall instruments lively delineated. Written first in High Dutch / ... Afterward augmented by the author, and first translated into Latin by Henricus Schobingerius Sangalthensis; and now done into English by N.C.**

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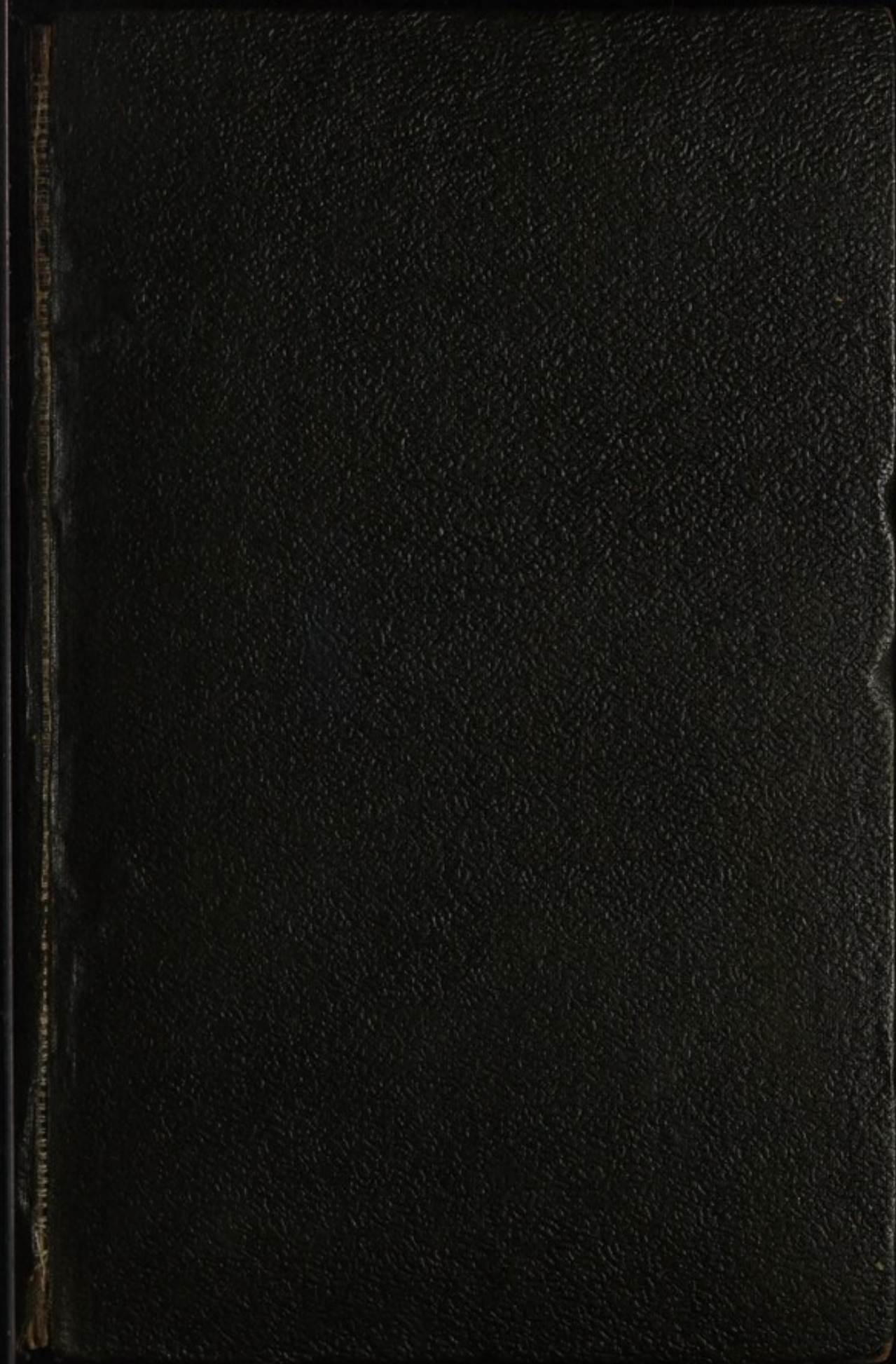
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Med

To  
R<sup>d</sup> Swaney Esq  
in the

from his friend,  
a former pupil  
in recollection  
of many kindnesses

L. Singer

Acresford.

29 Sep. 1843



J. G. 15. . . .

75982  
LITHOTOMIA

✓ VESICÆ

That is,

An accurate description of  
the Stone in the Bladder: Shewing the  
Causes and Pathognomicall Signes thereof,  
and chiefly of the Method whereby it is to  
be artificially taken out both of Men  
and Women, by Section.

Wherein severall wayes of Operation are  
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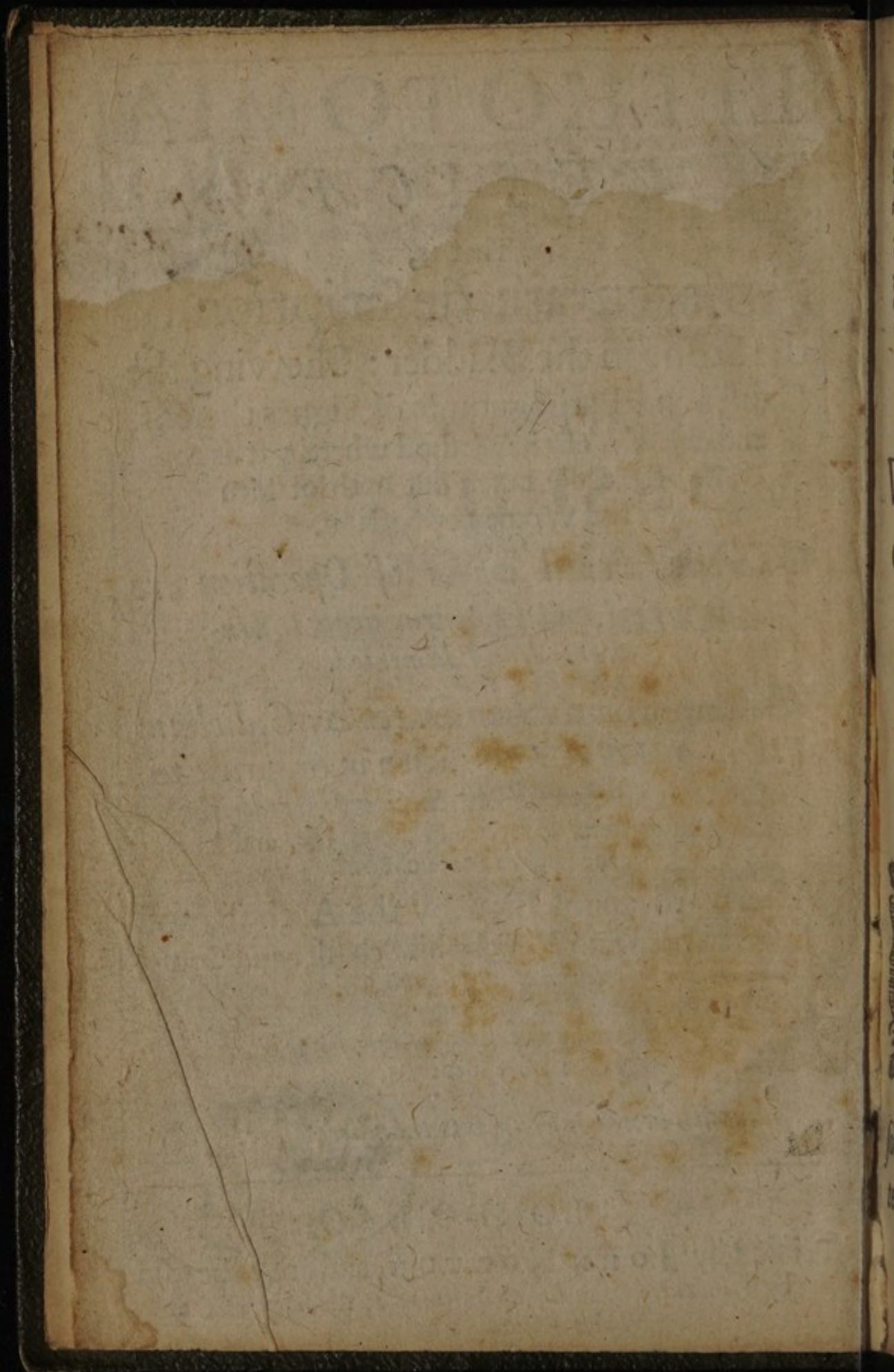
Written first in *High Dutch* by *Gulielmus  
Fabricius Hildanus*, Physician in ordinarie to  
the most Illustrious Prince, *George Frederick*,  
Marquesse of *Baden*, and *Halberg*, &c. and  
the famous State of *Berne*.

Afterward augmented by the Author, and  
first translated into *Latin* by his Scholler and Com-  
muner *Henricus Schobingerus Sangathensis*; And now done  
into *English* by N. C. for the generall good of this  
Nation, and particular use of the Societie of  
CHIRURGIANS.

With better Instruments than heretofore.

LONDON,

Printed by JOHN NORTON, and are to be sold  
by William Harris in Coleman-street, at the signe of the  
White Hinde. 1640.





TO THE  
WORSHIPFULL  
COMPANIE OF THE  
BARBER-CHIRURGIANS,

JOHN NORTON wisheth  
encrease in skill, fortunatenesse  
in practice, and all other  
happinesse:

**H**ow dangerous a practice  
the Curation of the  
Stone by Section is,  
it is evidently evin-  
ced, not onely by Rea-  
son, if we consider the structure and  
temperature of the part affected, but  
(\* ) 2 by

## The Epistle

by Experience also: seeing so few attempt it, and so many doe die, who submit themselves to this manner of Curation, although the Operator performe his part: Wherefore, too great Caution cannot be had, in going about this Operation. To instruct therefore the Operators, and the more to enable them, some have invented fit Instruments, and some have left Treatises to Posteritie, to enable such as give themselves to deliver such as are troubled with the lamentable Disease of the Stone; it being so grievous to the diseased persons, as it enforced them to admit this manner of Curing, with the danger of losing their lives; which losse is irrevocable. A Treatise of this subject having beene penned in the Latine Tongue by Gulielmus Fabritius

## Dedicatorie.

Fabritius Hildanus, one well knowne to all Europe, as well for his experience in Physick and Chirurgerie, as his Learning, it came to my hands. No sooner did this fall out, but that immediately I went to those who here with us are accounted most judicious, and best acquainted with this practice, and entreated them to peruse the Booke, and freely and impartially to deliver their opinion of it, and to tell me, whether it was like to benefit the Operators of this Realme, if it were translated into our Language. Each one of these, being dispersed, by reason of their Habitations, with one accord affirmed, that the like discourse of this subject was never penned, and could not but much profit such as in this our Countrey should attempt

## The Epistle

this Operation. Being perswaded of the veritie of this their Censure, I committed this Businesse to the care of one, who was sufficiently able to expresse the Authors meaning in good tearmes, as by collation of the Originall with the Version, will appeare to any one who is not a meere stranger to this Operation; and was at the Charges my selfe, both of the paines of the Translating, and Printing. Advising with my selfe, to whom it was best to Dedicate this Treatise, I resolved to make choise of your Worshipfull Companie; it by right belonging to you, the performers of this Operation being Members of your Companie. And, although to some it may seeme onely advantagious to such as practice Lithotomie, yet

## Dedicatorie.

yet ( if the matter be well considered ) the Readers shall not be deprived of their Fruit : For, if they be Chirurgians who meddle not with this Operation, yet their knowledge shall be encreased, and their judgement better enformed : If they be Schollars, or Gentlemen, they shall reape oblectation : If they are like to prove Patients, their Doubts shall be resolved ; the Operation it selfe shall be represented to the eyes of the Mind : Whereby they will conceive a greater alacritie, and be enabled with a fuller resolution, to endure that which is to be done, according to Art. And, seeing the respect I beare towards the Worshipfull Companie, hath moved me to Dedicate this Treatise to you, you



# The Epistle, &c.

will (I hope) accept the *Worke* it  
selfe, Dedicated with a chearefull  
countenance, and think well  
of the *Dedicator*, seeing  
he unfainedly obser=  
veth you.

I. N.

PRÆFA-



## PRÆFATIUNCULA

*ad Lectorem.*

**H**unc de LITHOTOMIA  
VESICÆ Tractatum  
quum paulò diligentius  
perlegissem, atque accu-  
ratiùs examinassem, dig-  
num eum existimavi, qui in lucem  
prodiret, ac publici juris fieret. Il-  
lius signa dilucidius depingit, opera-  
tionis modum clariùs ostendit, cura-  
tionis rationem fideiùs proponit, at-  
que instrumentorum figuras foeliciùs  
describit, quàm quivis eorum qui  
præivere, atque de hoc subjecto hacte-  
nus scripsere. Ex illius lectione non  
mediocri lætitia perfusus sum eò  
quòd tam clarè ob oculos hanc Chi-  
rurgiam

## *Ad Lectorem.*

rurgiam ponat, ex qua in adolescen-  
tia lucrum amplum percepi. Quantâ  
curâ ac sollicitudine ea tentanda sit,  
iis ignotum esse non potest, qui *Hip-  
pocratis* jusjurandum perlegere. Plu-  
rimorum qui sectionem hanc admi-  
sere, flebilis mors, imperitorum arti-  
ficum inscitiâ illata, hanc operatio-  
nem infamem ac metuendam apud  
vulgus reddidit. Quas ergo grates  
dignas illi persolvemus, cujus ope-  
râ reddita est securior? Quamo-  
dum omnes hortor, quibus animus  
est semet in hac Chirurgia exer-  
cere, ut Tractatum istum sibi com-  
parent, ac nocturnâ diurnâque manu  
versent. Neque abs re erit si Me-  
dici illum percurrant, quibus jucun-  
dum est hisce operationibus interesse.  
Ita namque & de Artificis peritia  
melius iudicare, & de eventu certius  
aliquid pronunciare poterunt. Non  
est quod Autor aut maligni livoris  
dentem curet, aut severiorum Cri-  
ticorum ceras miniaculas pertimes-  
cat, quum Candidis at gratis Lecto-  
ribus

*Ad Lectorem.*

ribus pergratum opusculum futurum  
fit.

Hæc scribebat 7. Calend. Martias,  
anni æræ Christianæ 1640.

ALEXANDER REIDUS, *Me-*  
*dicinæ Doct̃or*, atque è numero  
*Sociorum inclyti Collegii medici,*  
*quod est Londini.*

The



## The Preface to the READER.



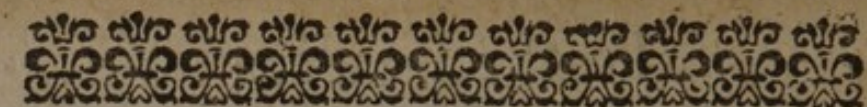
*When I had with diligent care read  
this Treatise of LITHOTOMIE,  
I thought it worthy to be published.  
It sets forth the signes thereof more mani-  
festly, it shewes the manner of its working  
more clearely, it propounds the reason of the  
Cure more faithfully, and describes the fashi-  
ons of the Instruments with greater dexteritie  
than any one who hath heretofore wrote of  
this subject. I tooke no small pleasure in the  
reading thereof, because it so plainely set be-  
fore mine eyes that part of Surgerie, whereby  
in my youth I received so great gaine. With  
what care and warinesse this is to be under-  
taken, they cannot be ignorant, who have  
read the Oath of Hippocrates. The lamen-  
table deaths of many which have beene cut,  
proceeding from the ignorance of unskilfull  
Chirurgians, hath made this Art infamous  
and*

## To the Reader.

and dreadfull amongst the common people. Therefore, how great thanks owe we to him, by whose paines it is made more secure? Therefore I exhort all that have a desire to exercise themselves in this part of Surgerie, that they get this Booke, and make themselves exactly perfect in the same. Neither is it unnecessarie that Physicians should read over the same, who take delight to be present at these Workes; for so they may both better judge of the skill of the Workman, and declare their minds more certainly, concerning the Event. The Author need not feare either the Tooth of malicious Envie, or the Censure of severe Criticks, seeing it will be a Work acceptable to ingenuow and gratefull Readers.

Written this seventh day of the Calends  
of March, in the yeere of our Lord God,  
1640.

By ALEXANDER REID, Doctor  
of Physick, and of the Societie of  
the Colledge of Physicians at Lon-  
don.



The Contents of the Heads of the  
Chapters contained in  
this Book.

*Viz.*

**O**F the Stone of the Bladder; the causes and  
Pathognomicall signes thereof, but chiefly  
of the method whereby it is to be taken both  
from men and women; wherein severall kinds  
of operations are set downe, and some instru-  
ments of speciall use pourtraited.

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# LITHOTOMIA VESICÆ.

## THAT IS AN ACCURATE DESCRIPTION

*Of the Stone of the Bladder; the causes and Pathognomicall signes thereof, but chiefly of the method whereby it is to be taken both from men and women; wherein severall kinds of operations are set downe, and some instruments of speciall use pourtraited.*

### CHAP. I.

**T**HE Divine Hippocrates Father of Physitians, hath not without cause in his booke *de Arte* left us this Aphorisme. *Medicus, si suffecerit ad cognoscendum, sufficiet quoque ad sanandum.* The Physitian which can discover the disease, may be able also to cure it; advising thereby all prudent sonnes of Art, that they should use all diligence and care, to get an exact, and accurate knowledge of the disease,

A before

before they intend or thinke to prescribe an order for the cure. And surely whosoever shall proceede otherwise, whether in externall or internall sicknesses, and passions, will hardly or never be able to attaine his desired end, and restore the Patient to his former health. In these words therefore, he doth specially admonish every faithfull and wise Chirurgian, that upon all cases propounded to him, hee should endeavour and study to obtaine a perfect knowledge of the particulars which are to be done; which being not to be gotten or learned by bare experience, it is necessary for attainment thereof, that he should take and read over the best and most approved Authors. Among the Antients, *Hippocrates, Galen, Avicene, Paulus ab Aeginetâ, Cornelius Celsus,* and *Albucasis* are the chiefe fountaines, whence each Physitian, and Chirurgian may draw the Theory, and fundamentall points of Art. After them succeeded *Lanfrancus, Guido de Cauliaco, Vigo, Tagaultius, Vesalius, Fallopius Ioh. Andreas à Cruce, Hieronymus Fabricius ab Aquapendente,* and *Ambrosius Pareus*, some whereof have written in the German tongue.

This Advise I doe not causelessly set downe in the entrance of this tractate. For I know there are some giddy-headed, and unadvised Chirurgians, which upon each slight signe, and uncertaine suspition of the Stone, commonly apply the incision-knife to the Bladder,  
boaring

boaring and searching there, yet in the end find no Stone at all. Such an Emperick came to *Collen* in my time, who thought highly of himselfe, but when hee came to take away a stone from a sicke person, and found none in the bladder, he nimble, and privily tooke one out of his own budget, and put it into his pincers, feigning that hee drew it out of the sick mans bladder: Some of the by-standers apprehended the imposture, and discovered his knavery to the Magistrate, who after examination caused him first to bee punished according to his desert, and then banished him. But whence ariseth this mischief? The source is this; Either because some villainous, haire-braind men, whose aime is onely to fill their pockets, are permitted to practise *Lithotomie*; or the want of Art and experience in others, or not perfect knowledge of the disease, or because they suffer themselves to be deceived with one signe, or more, such as are common to the stone with other passions of the bladder.

The fraud of an Impostor discovered.

That a Chirurgion may come to an exact knowledge of the disease, wee shall first declare what the Stone is, next what be the causes thereof, and lastly what be the Pathognomicall signes thereof; Of which three subjects wee shall treat in these first, second, and third Chapters.

To prosecute my purpose, I say the Stone is a preternaturall, grosse, slymie, coagulated humor, brought into a stone of a thicke matter,

The definition of the Stone.

by a preternaturall heate and hidden quality in the Bladder. For when the stone by reason of its roughnes or acrimony, doth exulcerate, teare, pricke and weaken, the most sensible substance of the bladder, or is inclosed in the neck thereof and stops it, then the urine by little and little is collected in the Bladder, and so stretcheth and dilateth it, that oftentimes the Capilare veines thereof are broken, and what paine the sicke man suffers thereby, it is scarce credible, especially by those who have been but little used in this disease. The companions attending this torment, are, want of rest, watchings, heat, inflammation of the bowels, raving, weakenes of the stomack and whole body. Man therefore by reason of the continuance of paine being barred his naturall rest, the naturall functions are interrupted: the stomack cannot concoct and digest the meate, and so a raw Chylus is thence transmitted to the liver where the second Concoction should be made; and because the error of the first Concoction is not amended in the second, therefore good blood cannot be produced from that raw, grosse and halfe concocted Chyle, and dispersed from the liver by the veines to the other parts of the body. Hence the whole body is filled with evill humours, and thence arise many and severall diseases as well externall as internall, as the Jaundies, Collique, Convulsion, Dropsie, and *morbis Articularis*, malignant Ulcers, Fistulaes, and at last, after  
conti-

continuall languishings, death it selfe ensueth.

*Fernelius*  
opinion  
of the

*Fernelius* affirmeth and writeth that all stones in the bladder spring from the kidnies, and that thence their first seed and rudiment is transmitted by the Ureters into the Bladder; but this opinion is contradicted by many most learned and experienced practitioners. But because this Controversie whether the Stone hath his first beginning in the Kidnies, or bee generated in the bladder, is little usefull for a Chyrurgion, I will not stay the Reader with handling of it.

But whether there bee the Stone, or no, that the Physitian ought to know and be assured of, and by what meanes it may be knowne, he may see afterwards in the third Chapter.

---

C H A P. II.

*Of the Causes of the Stone in the Bladder; wherein is also shewed from what meats such as are subject thereunto, ought to refraine.*

**B**Ecause every faithfull Chyrurgion and Physitian is bound before God the chiefe Physitian, not onely to cure the sick, but by his good Council to keep those that are cured, in their health; not onely to take away the Stone, but to provide against the breeding of any new ones; therefore it is required principally, that the Chyrurgion know and be

taught how and from what causes the Stone in the Body of man, and especially in the Bladder is generated and congealed together; but of the other stones which are often and numberlesse found in other parts of the body, it is not my purpose to treat in this place.

*Hippocrates, Galen,* and other famous Authors testify and write, that the Causes of the Stone, are, first a raw, thicke, grosse and earthy phlegme, collected and coagulated in the bladder, which if either by reason of the weaknesse of the expulsive facultie, or the straightnesse of the Urinarie passages, it be stopped and long kept there, as in Infants, is hardned and converted by a preternatural heate into a stone, as wee see that Stones are made of a fatte slimy Clay by the heate of fire.

The cause  
of the  
Stone.  
The Mate-  
riall cause  
phlegme,  
the Effici-  
ent heate.

The opi-  
nion of  
the Chy-  
mists con-  
cerning  
the cause  
of the  
Stone.

The Chymists ascribe the growing together and coagulation of the Stone, to salt, and conclude that the salte and tartar conteyned in the humors of mans body, is the true and naturall cause of the coagulation thereof, yea that the tarterous matter it selfe is ready and fit to breed the Stone.

The opi-  
nion of  
*Felix Plate-  
rini.*

The most excellent Physitian *Felix Plate-  
rus* of pious memory, almost jumpeth in opi-  
nion with them: for he writeth that there is  
a salt, sharp, and earthy humor mixed with  
the Urine of such as are subject thereunto, and  
that doth cause the Stone. This opinion may  
be confirmed with good arguments; but be-  
cause I study for brevitie, I will supersede  
them.

them. The Reader upon this subject may peruse the most excellent and learned Philosopher and Physitian *Ioh. Fernelius* of the parts and symptoms of diseases: *Lib. 6. Cap. 12.* *Daniel Sennertus* in his Institutions of Physick. *Lib. 2. part. 2. cap. 9.* *Greg. Horstius*, *Centur. probl. Med. Decad. 8. quest. 1. & lib. consult. & epist. Medicinal. Sect. 9.* As also *Ioseph. Quercet.* in *Consil. de Arthritide & Calculo.*

But every understanding man may easily judge that something else must needs concur to the hardning of the phlegme, and ingendering of the Stone, besides immoderate cold (or as others would have it) preternaturall heate. For if the Stone should arise from immoderate cold (which it is impossible to find in the body of a living man in so high a degree as should bee able to produce a Stone) heate would againe dissolve it; which it doth not; and therefore cold cannot be the cause thereof.

And if the growing together of that phlegmaticke humor, and its transmutation should proceed from heat, the heate must bee either in a meane, or the highest degree; and if we can suppose the heate to be of the second or third degree, the Stone then might againe be dissolved in water, as is to be seene by the ditting mortar of ovens and furnaces, which having beene a hundred times hardned by heate of fire, are neverthelesse mollified and dissolved in waters.

And if the internall heate may be supposed

The Stone is not coagulated only by cold.

Heate alone doth not cause the Stone.



of the highest degree, that thereby it should harden the phlegmatick humor, as we see Clay and Loame turned to stonie matter in a brickkilne, nature could not suffer nor abide it. It follows therefore necessarily, that there is some hidden thing conteyned in the humors, as we see it is the proprietie of some waters, which though they are cleare and pure, turne Wood, Chaffe and other things into stones.

A fountain at Mottrovium turning all into stone.

The like at Bienna.

At *Mottrovium* by the *Genever* Sea, in the Territory of *Berne*, there runnes a cleare and pure water out of a high Mountaine which (as I have seene) turneth grasse, hearbs, and whatsoever it meets with all, into stones, which are neither dissolved in water, nor melted by fire. Neere the Citty *Bienna* there runneth the like River from a Mountaine to the Citty wall into a narrow street where it cleaved to the ground work, and is turned into Pumicks which grow so fast, that at certaine times they must cutte it up, or else in few yeares space, it would stop the passage through the streets; Yet neere those Rivulets there are other waters which neither settle nor turne any thing into stone; whence it appeares that there is a hidden peculiar constitution and gravellous proprietie in those waters. And thus it may stand with man, that from some internall causes one may be subject to the Stone, and another not.

An especiall observation.

In the yeare 1624 I had incure a Citizen of *Berne*, by name *John Woolfe*, who for many yeares

yeares had beene liable to the Stone, but in the Summer of that yeare after the sensible feeling of some paine in his Loins, which lasted the space of eight or tenne dayes; within few dayes he voyded neere three hundred stones, by the Urinarie passages, and the yard, without any notable heat or cold of the Loins preceding, or any sensible inconvenience in his body. The naturall inclination to the breeding of gravell is wonderfull. I dare upon my credit affirme it, and my selfe will confirme it, that in the space of two yeares hee voyded more than a thousand stones, some whereof stuck in his right Ureter, yet were thrust out by Gods blessing, and proper Medicines. Now he is well and healthfull, and doth all his businesse both on foot and horse-back.

Some contend, that all the stones in the body of man are not bred of phlegme, but other excrementitious humours; because that some stones are found of an Ash colour, others yellow, red, black, and of other tinctures; when all should be white, if the Materiall cause was of a phlegmatick and slimy humour. This opinion though I neither can, nor desire to crosse it, doth not evert the Doctrine of *Galen* and *Hippocrates*, because they looke to the primarie naturall cause of the coagulation of the stone, where phlegme is found to be the principall. And if perhaps any other humour, as for example Melancholy concurre with it, then the stone is gray, Ash-coloured, or black, according to the quantity of the humour flowing

Whether  
phlegme  
be the on-  
ly materi-  
all cause of  
the Stone.

Whence  
the sever-  
all co-  
lours of  
the stone  
arise.

ing thereunto. By the same reason the stone is also yellow, red, or otherwise coloured by the mixture and affluence of the other humors with the phlegme, and that according to the temperament of the internall heat of the afore-said humors.

Therefore though as is above said, there is some thing supernaturall in the coagulation and generation of the Stone in Man, which, as *Platerus*, *Horstius*, and *Sennertus* affirme, may be ascribed to Salt and Tartar; yet this can not evert this proposition, viz. that the two principall causes thereof, are, the Materiall cause, which is a grosse and slimy phlegme, and the Efficient cause, which is the preternaturall heat of the inward bowells. For these two causes appeare so manifestly in those that are subject to gravell, that no man can question them. A phlegmaticall, excrementious, grosse, and slimy humor is found continually in their Urine, and there is no stone so little in the Bladder, but the phlegme may be there discovered.

There was lately brought unto me the gall of an Ox, wherein was the rudiment of a stone, about the bignesse of a beane, which was involved in that grosse and slimy humor.

Nor is there any question of the preternaturall heat of the inward bowells, that being apparantly manifested by the preternaturall and immoderate thirst with which those persons subject to this disease are commonly afflicted.

Hence

Hence it appeares, that there are especially two kinds of meats which hasten the growth and coagulation of the Stone; first all such as produce a grosse, thick, and slimy humor; and such againe as heat the Liver, Kidnies, and inward bowells, and may inflame the blood and humors.

Two sorts of meats minister matter for the Stone.

The meats which produce much phlegme, are chiefly milk and all white meats, except Butter; Cheese also and Fish, especially such as live in pooles, mud, and stinking waters, and want scales; the extremes, heads, and bowels of all beasts, and all slimy things, for which very cause Veale and the flesh of Kids, Lambs, and all other beasts newly weaned, if often used, is dangerous to Calculous persons. Whatsoever is hard, grosse, and hardly digested, though it be not slimy, begets much phlegme; the reason is, because those meats, if they be long retained in the stomack, and cannot be digested, by degrees weaken the naturall heat the organ of concoction, and in stead of good nourishment, produce a crude and grosse phlegme, which afterwards comming to the Kidnies, and Bladder, settles there, and administers matter for generation of gravell. All salt and smoked flesh and fish, the flesh of fallow Deare, red Deare, wilde Boare, Goats, and Beares, all unleavened bread, and whatsoever is fried in Butter or Oyle, is evill. All Pasties, Pease, Beanes, Lentils, Rice, Millet, Coleworts, raw fruits, and the like, are evill. Idleness, much sleepe, and tipling by night  
make

An enumeration of phlegmatick meats.

make the body soft and slippery, bedew all the members with phlegmatick excrementitious, and cold humors, and so help to produce the Stone. Idlenesse, much sleepe, drunkenesse, and nocturnall computations, make the body soft and slippery, moysten all the parts with a phlegmatick, excrementitious, and cold humor, and so conduce to the generation of the Stone.

2. The efficient cause of the stone.

The next cause of the Stone, as hath beene said, is the preternaturall heat of the bowells, blood, and humors. These are inflamed in Man by the use of too hot things, such as are Pepper, Ginger, Cloves, Cardamomes, Galangal, Bay-berries, long Pepper, Leekes, Garlick, Onions, and the like, which are of a sharp and biting taste, strong and hot Wines, immoderate and violent exercise of the body both on foot and horse-back, hot Bathes whether in stoaves or otherwise, long keeping the bed after a sicknesse, and the like.

Hence wee see that those which have the Gout, are often troubled with the Stone, and thereby often fall into danger of death, as it happened to a person of quality at *Selothburne*, who having the Stone fixed in the Ureters on his right side for the space of 14 dayes, all that time endured much torment, and at the last was faine to yeeld to Fate, though his Physician had used all diligence to cure him.

The reason why such as are Podagricall, are liable to the Stone of the Kidnies and Bladder, is, not only because their Liver, Kidnies, and

and Loyns are heated by long lying on the back; but also because by the intermitted exercise of their body, their anguish, disquiet, and want of sleepe, all three Concoctions cannot be perfected, and in stead of good juice which should be carried from the stomach to the Liver, and converted into good blood, a grosse and slimy humor is transported thither, and thence to the Reins and Bladder, where the preternaturall heat disperseth the thinne and watry parts, and hardeneth the rest.

Why such as have the Gout, are subject to the Stone.

The beginning in deede is but small, but a newly generated phlegme comming every day to the first gravell (which alwaies reteines and maintaines its first conceived heat) by degrees grows bigger and bigger, like a Candle which by often dipping in the tallow, growes to a larger size. The cause why some Stones are sharp and uneven, is, because that other gravell and sands slip into the Bladder from the Kidnies, and cleave to the slimy humor, involving the stone, and so harden with it.

The reason why som stones are sharp, & rough.

From hence then every discreet man may easily collect, and see with what judgement and discretion those sweating potions made of the Dicoctions of Guajacum, Chyna, Sarsaparilla, Sassafras, and the like, are to be administered to gouty men: even so, that sweat be not procured too plentifully, whether it be done by multiplying the Bed-clothes or hot Stoaves, &c. for so all inward bowells, especially the Liver, and Reines grow hot above measure,

Whether sweating Potions are fit for such as have the Gout.

measure; the thinne and watrie humors is dispersed, the slimy easily hardned, and as well in the outward joynts as in the Kidnies may turne to a stone. It is sufficient therefore that the sicke man be sweated moderately, and nature be not forced thereunto to sweate; for so the decoction, by its attenuating and heating propriety will partly expell the excrementitious and preternaturall bad humours by sweat, partly dissolve and disperie them, and also strengthen the inward and outward parts, and comfort the sicke man.

Why Infants are subject to the stone.  
*Hipp. de Morb. l. 4.*  
*Galen. in Com. 26. l.*  
*Aph. 3.*

Infants are more liable to this disease than those of full age or ancient people, because (saith *Hippocrates*) they often sucke unwholsome milke from their mothers dugges, or as *Galen* hath it, by their immoderate and inordinate feeding; for so they accumulate many grosse, raw and undigested humors, which are brought downe with the urine to the Bladder. Nor is their want of exercise & straightnesse of the Urinarie passages a small occasion for the generation of the Stone in Infants; for thereby the grosse and slimie phlegme is hardly voyded, their expulsive facultie especially being weake and feeble: and what wonder is it that when this grosse and clammie phlegme is retained in the Bladder, and their internall heate more intense, that they should not be more liable to this disease than any other people? For although in such as be in yeares by reason of the weakenesse of the stomach, all their internall bowells doe heape

up many slimie and grosse humors, the Principall and Materiall cause of this disease; yet the other cause, to wit heate, which should drie up and harden this phlegmaticke humor, is wanting.

In the yeare of our Lord 1581 January 28, my brother of 16 yeares of age died of the Stone; for whome *D<sup>r</sup> Brickman*, that famous Physitian of *Collen*, did his best indeavour, whose observation was, that the principall cause of the Stone in him was that hee so delighted in salt from his Childhood, that no meate could be sufficiently poudred to please his palate. Hence his inward bowells grew hott, and were so inflamed, that they could easily drie up those slimie humors, and turne them into a stone. Yet there are Infants, and old men too, which delighting in eating of Dirt, Coales, raw Peas, Corne and Wheate, are disposed to this sicknesse; for the naturall heate being weakened and extenuated by the use of these preternaturall things, in stead of good blood, produceth a cold and phlegmaticall humor, as it hath often beene above remembered.

*Ioseph Furer* a Citizen of *Berne*, from his childehood abhorred wine, but contrariwise no meate was so gratefull unto him as whole Corne and Wheate, which hee chewed small with his teeth and ate, yet remained sound untill the 61 yeare of his age, wherein Symptome accrewing upon Symptome, and paines of his Bellie and Loines still increasing, at last

Sharpe  
and salt  
meates a  
cause of  
the Stone.

An obser-  
vation.



a great Apofteume arifing about the extremitie of his Loines neere the *Os facrum*, and there breaking, a purulent matter gushed out during many moneths, wherein at laft hee gave up the ghoft; whilft he was living, I have often fearched him with my Probe even to the right Kidny, and if I could have prevailed after his death either with prayers, promifes, or gifts, to have got license to difsect his Corps, doubtleffe ftrange things had beene found therein.

Thus gentle Reader, thou underftandeft the caufes of the Stone, & what diet thou oughteft to prescribe and ordaine for thy Patients, both before and after the praftife of *Lithotomie*.

### C H A P. III.

#### *The Signes of the Stone.*

**S**O many grievous and pernicious errors, both about the externall and internall difeafes and Symptoms, even fuch as are often mortall, or caufe fuch grievous Symptoms or paffions to abide in the body of man, that the ficke with palsies and unufferable torments, are compelled to fpend the whole current of their life in miferie, doe hence arife, that the Phyfitian doth not well know the difeafe. This then muft bee the Phyfitians firft care, when he comes to a cure, that hee use all diligence

gience to finde out the sicknesse; for as *Hippocrates* testifieth, he that can discover the disease may also cure it. I could if need were, produce many examples to testify this truth, and prove that some *Lithotomists* have applied the Incision knife to the Bladder, digging and searching there, yet in the end have found no stone. Whence proceedeth this error? Even from hence, that they had not an exact and accurate knowledge of the disease and cause thereof. And what danger may hence ensue to the Patient, and shame to the Chirurgion, every wise man may easily determine. But that all things may be done conveniently, and according to arte, the Chirurgion ought to observe these following heads and signes of the Stone.

The most excellent *Hippocrates*, propounds five signes of the stone in these words *Cate-*  
*rum morbus*, &c. The disease hath five signes, For when hee would make water, he is tormented with paine, The Urine comes out by dropps, as in the Strangurie, and is somewhat bloodie, the Bladder being exulcerated by the Stone, and inflamed. This is an evident signe and discerned by the extremitie of the Prepuce; sometime he voideth sand &c. Though *Hippocrates* in these words doth almost comprehend all things required to the knowledge of this disease; yet for the young students sake, and that the Chirurgion may perfectly know the sicknesse before hee commeth to practise this dangerous Operation, I shall describe them a

*De Morb.*  
*lib. 4.*

Why *Hippoc.*  
placeth  
paine in  
the first  
ranke of  
the Signes  
of the  
Stone.

little more plainely with some other signes and circumstances.

The first  
signe of  
the Stone.

*Hippocrates* in the afore mentioned words doth not without cause place paine in the first ranke of the signes of the Stone, because the sick man will seldome consult with the Physitian, unlesse paine doth urge him; though to speake properly and truely it be the second signe. Otherwise I am perswaded that it is no obscure signe of the Stone, when the urine is thick & mixed with a white slimie humor, especially, if after the urine hath stood a day or a night unstirred, it sticke close to the bottome of the Urinall, though to speake more strictly, the stone be not then coagulated in the Bladder; and this signe I set in the first place before those signes mentioned by *Hippocrates*, that the industrious Physitian, may account it as a vancurrier, and forerunner of the Stone, and use all diligence to suppress the ensuing growing evill, maturely. This Phlegmaticke matter is seene in the Urine, not onely as the materiall cause of the stone, that is to say the matter from whence the stone is rayfed, before it is settled, and coagulated, as hath beene said in the former Chapter; but commonly the sicke persons, as long as they have the stone in the Bladder, make this slimie Urine, which appears in a higher degree of sliminesse, according to the growth of the stone, this being the nature and proprietie of the Bladder; especially when the necke thereof is vexed, and corroded by the acrimony of the stone, to  
produce

produce such a slimy and excrementitious humour.

I say ( commonly ) because in some calculous persons, the Urine remaines pure, and cleare; but this happeneth to them chiefly, whose expulsive faculty is weake and feeble, & the Urinary passages little and narrow. In such persons the stone growes sooner than in such as voyd a turbid, thicke and slimie water: for from these, the phlegme, the materiall cause of the stone, is purged, & detained in the Bladder of the others where it cleaves to the stone, and supplies it with nourishment and augmentation.

Why the urine is sometimes cleare.

But because the like slimie urine is found in other diseases, a carefull Physitian ought not to conclude onely upon this signe, but to observe the others following.

A slimie urine is no sufficient signe of the Stone.

In the virulent *Gonorrhœa*, there is also a phlegmaticall white humour, mixed with the water, but their urine comes not from them by drops, like those that are troubled with the Stone, but with a great current, and in a great quantitie, as if they had no disease about them, save only that it is vented with extremity of heate, and paine; So also the women which have the Whites, make a white slimie water, but without paine, unlesse they have had to doe with uncleane men. This difference ought to be observed by every industrious Physitian that he may have a perfect knowledge of the disease, and nothing may be omitted in the cure.

The second  
signe  
of the  
stone.

When therefore the antecedent cause of the stone is not taken away, and the generation of phlegme not prevented, but that it curdleth and groweth to a stone in the Bladder, then vehement paine, especially in making water, attends it; for endeavouring to discharge it selfe of the urine, the stone withall is thrust downe to that most sensible part, the neck of the Bladder, which it teareth and offendeth with its roughnesse, and produceth most insufferable paine. Their urine also if it be suppressed in the Bladder, doth often stretch and delate it with such torment, that the very Thorax and upper entrals of man suffer by consent, and the sicke person himselfe doth thinke his spirit will faile him and his sides burst asunder. And this is the first signe which is set downe by *Hippocrates*.

The third  
signe.

Thirdly the urine comes out by little and little, as in the Strangurie; the cause is because the stone lying hard upon the necke of the Bladder, doth stop its way that it cannot flow freely and as nature intended it.

The fourth  
signe.

Fourthly, the urine is somewhat bloody, because the angled and sharpe points of the rough stone doe prike and teare the necke of the Bladder, hurting the Capilar veines (which are in great number, as shall be shewed in the fifth Chapter) and so the water becomes bloody. But this hapneth especially when the sicke man being willing to walke, or ride on horsebacke or in Coach, moveth too violently, and his body is shaken immoderately.

Fifthly

Fifthly, sometimes also the Bladder is inflamed, because the Urine being long retained therein, and suppressed, doth so extend it, that the little veins thereof are broken, and the blood falling into the Bladder doth putrifie there, and beget an inflammation.

The fifth  
signe.

*Hippocrates* writeth, that this cannot be discovered outwardly, but that the Prepuce and former part of the Yard doth shew it. The reason is, because the blood runneth by the neck of the Bladder, and because the neck hath more flesh and more veins than the Bladder it selfe, and is hurt and wounded by the roughness of the Stone; it is therefore primarily and chiefly inflamed, and the inflammation afterwards is derived through the whole Yard, to the very Prepuce. Besides, the end of the Yard is most grievously tormented in this inflammation, though the cause thereof, the inflammation, be seated in the Bladder. And this is not seene only in the inflammations of the Bladder, but also in all Calculous persons who complaine chiefly of paine in the Glans, or extremity of the Yard, though the stone, the cause of all this paine, stick in the hinder part, about the neck of the Bladder, and teare and exulcerate it: and this is caused by reason of the exquisite sense of the Glans, because all the nerves concenter there.

But these Inflammations of the Bladder are commonly mortall, by reason of those grievous and dangerous Symptoms, as Feavers, immoderate Watchings, Ravenings, Con-

The inflammation of the Bladder mortall.

vulsions, and the like accidents which attend them. They therefore who are subject to the Stone, ought to be carefull that their Urine be not suppressed, and as soone as they finde any stopping thereof, to consult with some skilfull Physitian for present remedy. If Bathes, Cataplasmes, Fomentations, Linguents, and the like Medicines doe not procure it, then an experimented Chirurgion is without delay to put up a Catheter into the sick mans Bladder, and the sick man to abstaine from too strong Diuretick Medicines: it being impossible that when the Urinarie passages are stopped below, and more humors are driven thither from the upper parts of the body, but that the paine and other symptomes should grow more grievous.

The suppression of the urine is dangerous.

Nor is the suppression of the Urine dangerous only to such as have the Stone, but to all others. The most learned *Andreas Toxotius* Physitian in Ordinary to his Majestie of *Denmark*, my singular good friend, when he lived with me at *Paderborne*, told me that the most excellent and famous Mathematician *Tycho-Brabe* died upon the stopping of his urine. This godly famous man, sitting long at a great Banquet in *Prague*, being compelled beyond his strength and custome to hold his urine long, afterwards when he found a fit place to unload his Bladder, could not voyd his urine, whereupon an inflammation of the Bladder ensued, and he died.

The sixth signe.

It hath beene above shewed, that such as have

have the stone, are troubled with a great paine in the Prepuce or Glans of the Yard, from whence another certaine signe of the Stone commonly followeth, which is diligently to be observed; to wit, that hee which hath the Stone, almost ever, especially being to make water, doth rub with his finger, draw or milk the extremity of that member; for by this meanes I have seene some, especially Children, have the *Membrum virile*, longer by halfe than ordinary.

But here may some object and say, If the *Object.* paine about the Prepuce and Glans be vehement, how can the sick man endure to presse, and squeeze that part, after such a manner. Shall he not hereby augment his paine? This in my judgement comes to passe, because the primary, and principle cause of the paine is not in that place, and because the paine is caused chiefly by consent, and affluence of the animal spirits, which are thence repulsed by that crushing, and compulsion, and the Glans it selfe in part deprived of its most exquisite sense. That it is thus, I had experiment in my selfe *Anno 1613.* after the great plague at *Lausanna*; I felt in my right Anckle a burning paine, which tooke me in the morning every day at foure and five a clock, and I found great ease when I thrust my foot hard against the Bed side, or some other body with both his hands did strongly crush my Anckle; for so the sensitive spirits, were againe driven back. A more large discription hereof, you shall

*Sol.*



finde in 4. *Cent.* 23. 86. An horseman in Winter, resting long upon his Stirrups, fees his feet so cold, that they seeme almost to grow stiffe; wherefore? because the vital spirits and the blood are driven from the feet upwards, which againe returne downwards when the feet hang out of the Stirrup.

The  
seventh  
signe.

Calculous persons, but not all, have sometimes gravell, and little stones in their Urine, and therefore *Hippocrates*, not without cause, added the word *Sometime*.

At *Collen*, I had in cure a man of qualitie, who would not be persuaded he was sick of the Stone, because he never voyded Sand, nor Gravell, and yet there were foure Stones found within him. And so it may come to passe that some one may have the Stone in his Bladder, and yet void no Sand with his Urine. So there be some also which are not troubled with the Stone of the bladder, yet thrust forth Gravel and Sand abundantly by their water, that gravellous and sandy matter proceeding from their kidnies, and little subsiding in the Bladder. This a carefull Physitian ought to observe, and to distinguish the two diseases, that so he may not appoint the cutting of the stone in the bladder, for such as be meereley Nephriticall.

The Stone is knowne to fall out of the Kidnies, by the paine of the Loins, and Sides; for so long as it sticks in the Reines, so long it causeth there great or little paine, according to its motion or rest. But slipping through  
the

the Ureters into the Bladder, it causeth great paine in the side, and the sicke man may sensibly perceive its successive descent, through the sensible Ureters. When it is come to the bladder, it makes its progresse with lesser paine, because the Yard is wider than the Ureters: nor are they, who have the Gravell and Stone proceeding from the Kidnies, found to have such abundance of tough and grosse phlegme in them, as those in whom the Stone of the Bladder is setled.

Besides all this, from the foresaid tearing, and exulceration caused by the stone, about the bottome and the neck of the Bladder, there ensues another motion of the body, no lesse pointing out the Stone than the former; to wit, when the sick man in making water, doth fold his thighs crosse-wise, contract his hipps, hang his head towards the ground, sometimes with one hand, & sometimes with both, doth girde up his bellie, neere the *Oss pubis*. Nature constraines him to this, because by that complication of his Thighs, and contraction of his Hipps, the Stone sometimes is driven upwards, that it may give the water a more free passage.

The eighth  
Signe.

The sick man, besides that grievous torment of the Strangurie, is sometimes also troubled with another Symptome, to wit, a gravative heavy wait lying upon the bottome of his belly, and the straight gut betwixt the *Ossa pubis*, and would force them downewards; and this is caused, especially by the greatnesse, and wait

The ninth  
Signe.

wait of the Stone. An honest Cittizen of *Geneva* had been afflicted with the Stone for the space of 28 yeares; it was the wonder of Physitians, that in the very beginning of his sicknesse he felt such a heavy wait in the bottome of his Bladder, and neere his straight gut, and should complaine of it throughout the whole progresse of his sicknesse, for the space of so many yeares: Yet after his death his body being opened, and a great Stone found in his Bladder, the Physitians admiring the waight thereof, beate it to powder, and in the middle thereof found a great leaden bullet, which thirty yeares before by a dangerous shot being thrust into his Bladder, was then covered with phlegme and converted into a Stone. This relation I had in writing some yeares since, from a known Physitian of *Geneva* who himselve was present at the case.

The tenth  
Signe.

The Urine doth often move the sick man to voyd it, because the Stone corrodes and exulcerates the Bladder, and so with its sharp points, and acute angles, doth provoke the expulsive facultie of the Bladder, and the Urine as we have said formerly, distilles drop by drop, but with great paine.

The eleventh  
Signe.

The Yard is often both in Infants and men of yeares stiffe, and standing, not out of any Venerall appetite or naturall lust, but rather because of the greatnesse of paine which drawes unto it Spirits and a windie matter, and so hardens it.

The twelfth  
Signe.

They who are troubled with the Stone for  
the

the most part are still dry, and desire much drink, and often. First, because they must make much water, and often, by this meanes they avoid the humors plentifully, which nature desires to recompence for conservation of the internall bowells in their convenient temperament and naturall Symmetrie. Secondly, because the bowells are heated by the grievous continuall paine, want of rest, and watchings, and therefore require much and frequent cooling; yea often at unseasonable and inconvenient times as at the night, and besides meales. Hence then the concoction of the Stomack and Liver being hindred, the spark groweth easily to a great flame; from hence follow obstructions, and weaknesse of the inward bowells, Jaundies, Dropfies and the like, as shall be shewed in its proper place.

When the Chirurgian doth thrust in his forefinger in the straight-gut, as farre as he can, and afterwards turnes it a little towards the *Os pubis*, he shall commonly feele an hardnesse. Commonly I say, because sometimes the stone lyeth in the upper part of the Bladder, and not neere the neck: for which cause the sick man must be enjoyned, that as his strength will suffer him, he should run, dance, walk or use the like exercise; and if it be a child, let him be taken under the Armeholes and his body shaken strenuously.

Yet all this is not sufficient for the practise of Lithotomie; for I my selfe have found some hard schirrous Tumours in the Bladder, which have

The thir-  
tenths  
Signe.

have seemed hard to my fingers being thrust into the fundament, as if they had been stones. Besides other signes of the Stone, as retention of the water, a bloody humor, and the like concurre as you may see *Cent. 2. Obser. 65.*

The most excellent and experienced *Cosmas Slotanius*, Physitian and Chirurgion in Ordinarie to the most illustrious Duke of *Fuliers*, and *Cleave*, my much honoured Master, hath oftentold me, that himselfe and the famous *Bernardus Dessenius Cronenburgius*, had a Noble man in cure at *Cullin*, in whom appeared all the signes of the Stone, except that the Catheter being thrust through the Yard into the Bladder, no calculous matter could be found. But after his death such a schirrous hard humor was found in the Bladder, that it filled up the concavity thereof, and there was scarce any space left whereby the water might passe into it; and I my selfe have observed the same in Women. Since therefore there be such hard schirrous humors, which have taken such deep root, as I my selfe have seene, and tried, that it is impossible to remove them without danger of death to the Patient; therefore no Chirurgion should be so light-headed, and undiscreet, as to undertake the ministrations of so dangerous an Operation, unlesse he be certaine of the event. He may make triall with his Instrument in manner following.

Place the sick man upon a Bench, Forme, or Table, but so that his body towards the head and feet may lie bending and crooked,  
his,

his feet and thighes opened and parted farre asunder, and that he lie upon his back: Then take one of the Instruments for this use, and anoint it with Oyle of sweet Almonds, of fresh Butter, and put it up gently and by degrees into his bladder; if there be any stone, you shall presently discover it by the Instrument, unlesse perhaps it be growne to some part, or involved in some membrane; as I have met with some particularly in a noble personage in *Basil*, of whom I shall speake in the eighth Chapter. And in this case, because there is no roome for *Lithotomie*, the Chirurgion ought to commend the Patient to expert Physitians, that they may give him ease, by all meanes and Medicines, and take care that the disease growe no farther, as shall be shewed more largely in its proper place.

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### CHAP IIII.

*What the Chirurgian should consider, and foretell before the Operation.*

**B**Ecause amongst the sundry Chirurgicall Operations, *Lithotomie* is deservedly to be esteemed one of the principall; therefore every industrious and faithfull Artist, should not like the strowling Mountebanks, and Impostors, unadvisedly apply the knife to the body of Man, as Butchers to the brute beasts; but

but first consider all things well, and weigh the issue of his work, that he may discover, and report it to the sick person, his kinred or friends, and understand their opinions and answers.

But first he shall not, like those juggling Quack-salvers, offer himselfe to the Patient, but attend till he be solemnly called; for such as offer their service, declare themselves to be vaine shamelesse fellowes, more desirous of their own gaine, than the Patients health and safety, and such, which that they may learne and practise the Art, care not though they buy their skill with the deaths of a hundred common people, as I have heard it from their own mouths.

Againe, this Noble Art, and excellent gift of God, will grow contemptible, if the Physitian before he is called, should goe to the sick person, and offer his service; for so no botcher or such base mechanicall man will goe from house to house to use his trade, but will rather stay at home till he be called and sent for.

Besides, it is required that the Patient should beare a speciall affection towards his Physitian, and put confidence in him, if he expect his cure should speed happily. But what affection can be borne, or confidence reposed in him, who like a pedling tooth-drawer, tenders himselfe and his service, and (that I may so say) by his light speech, bragging and babbling, doth in a manner bewitch the Patient

tient to rely upon him, though it be to the losse of his life.

Secondly, when he is solemnly called, let him not imitate such men as use to extenuate and make slight of the matter, that they may not be dismissed, and others called into their roome; but truly declare to the Patient, or his friends, the difficultie of the Operation, and what will follow. The issue of the sicknesse is therefore to be knowne by the Chirurgian, that he may betimes prevent the Symptomes, and winne the good opinion of the Patient and those about him, when they shall perceive that he understands the disease and his Art by the Fundamentall Principles.

The Artift  
must know  
the issue of  
the disease.

Thirdly, the Artift must know the event of the sicknesse, and foretell to the Patient, or his friends, that he may avoid all blame, and shame, if he attaine not the desired end; this Art in this age, being more subject to scandall than any other profession. There are many now, which in stead of an *honorarium*, or merited reward, dismiss their Physitian with unkind and contumelious words; and were it in their power, would have him in his grave; Him I say, whome ere-while when they were racked with paine, they extolled to the skies, and would not have denied him halfe their substance.

A Gentleman at *Collen* being grievously sick, tormented with paine, sent for a Chirurgian whom I knew very well, and promised him a hundred Imperialls, if he could give him  
ease:



ease : The Artist by his diligence in a short space restored him to perfect health ; but then he would scarce give him one hundred farthings , till the Cause being brought before the Magistrate, and the Gallant being rebuked, was enjoined to stand to his word , and give the Physitian satisfaction.

*Observation 20.* *Bartholomaeus Cabrollius* a famous Chirurgicalian , writeth , that he was called to a rich young Gentlewoman , of eighteen yeares of age , which did not make water by the neck of the Bladder, but the Navell , whose Father promised him , that he would willingly give him the halfe of his Daughters portion , if he did cure her ; but yet when the Cure was done ( which was perfected in twelve dayes ) he could get but one double Ducket.

I could produce more Examples of this kind, but that I may not be tedious, I will supersede them.

Yet I hence conclude not that the Physitian should be too respective of his private gaine; God forbid; but he rather ought to doe his office carefully to every one, rather respecting the good of his neighbour , than his own private advantage : Yet such as are able , are bound before God , to reward the Physitians labour liberally, that he may help the poore in charity. And this is in the Scripture phrase *to honor the Physitian.*

That the Chirurgian may by Art fore-shew the future estate of the Patient , these things are to be observed.

First

First, that he discern and know whether the Stone be great or little, partly by the Circumstances, partly by his hands and finger in the Fundament. He may know the bignesse of the Stone by Circumstances, if he well understand the beginning of the Disease: for the bigger the Stone is, the more time is required for its generation; nor can a great Stone be bred in a small time, unlesse the body of the Patient (which the Physitian must carefully observe) be peculiarly disposed thereunto. Besides, a small Stone is more painefull to the sick than a great one; for that slips into the neck of the bladder with the urine, pricking and corroding it, and stopping the urine; but this great one doth not come so deep to the neck of the Bladder, that it should cause such grievous Symptomes. But by the finger in the fundament, he may best discover the stones dimensions; And having found out the extremities, angles, and height thereof, he may withall apprehend the bignesse: But if he cannot find out the just proportion of the stone by his finger, and is perswaded that it is a great one, then he shall examine the Patient, what masse, and weight he perceives about his fundament? for according to that masse and weight, he may judge of the bignesse, or smallness of the stone.

Secondly, the Patients constitution must be respected: for if the stone be great, and the Patient but of small stature, or weake, nothing

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can

can be expected but an unhappy issue. But if the stone be not very bigge, and the Patient strong, and of a good habit of body, there is good cause to expect an happy successse. Yet no man can attempt to draw out a stone surmounting the bignesse of a Pullets egge, without danger of death, though it be from persons of vast bodies, and of strength of youth; for such an one cannot be taken away without exulcerating the muscle of the bladder, and the bladder it selfe. Nor is it very safe to breake the stone; and it is doubtfull, whether it can be broke, because there be some found of a flinty hardnesse, as shall else-where be shewed at large.

Thirdly, the disposition and constitution of the Patients inward bowels, is to be regarded; for if the Lungs, Liver, Spleene, Kidneys, or Bladder be wasted, or in part corrupted, as it often happeneth in these diseases, then this operation cannot be attempted without danger of death; for Nature afterwards from the fore-said bowells will transmit naughty excremetitious humors to the wound, whence paines, tumours, and other grievous symptomes, and at last death it selfe will ensue. This rule is also to be observed by the Chirurgian in cutting of Ruptures; for he is not to cut any which is sick of any inward disease, as the Jaundies, Phthisis, Dropsie, and the like; for otherwise, he shall soone send him to his fathers, as too frequent examples testifie.

Fourthly,

Fourthly, if the Chirurgian be to make this Operation in an unseasonable time, he must be exposed to many mischiefs, as shall be shewed at large in the tenth Chapter.

Fifthly, if the Patient before the Operation hath not, or would not use requisite Medicines, as Purging, Bleeding, Diet, and the like, of which wee shall speake hereafter; or the Chirurgian through unskillfulnesse could not prescribe them, an happy issue cannot be expected; for if the bad humors, and blood be not taken away before the Operation, they will afterward flow to the wound impetuously, and produce the above named Symptomes.

Sixthly, after that the Chirurgian with his finger in the fundament, the Catheter, or Probe, hath found that the stone is uneven, sharp, and full of Angles, he cannot but conclude that the Operation will be long, difficult, and involved with many dangers. This difference of the stone doth hence in some manner appeare, that a white and milky urine doth signifie the stone to be smooth, and even: but if the urine be red, and bloody, the stone for certaine is rough, sharp, uneven, angulous, and more painefull then the other.

How to know whether the stone be even or uneven.

Seventhly, It is most dangerous to attempt to draw out the stone, which growes to the bladder, because the bladder is torne in the extraction, and many dangerous symptomes ensue.

Eighthly, If the stone be long, like an

Olive, and the Chirurgian should by chance take hold of it with his Pincers in the midst, and draw it out a thwart, the Bladder might easily be torne, and exulcerated.

The Stone  
not so  
dangerous  
in women  
as men.

Ninthly. There is much lesse danger of the stone in women, then men; for the neck of the bladder in women, is shorter, and so large, that sometimes great stones may bee brought from thence without Incision, as shall be shewed in the 22 Chapter.

Tenthly. When after the Operation the tents are put into the wound, and they doe not keepe it open, till the Bladder be well cleansed, the Patient is in danger of a relapse, as it shall appeare in its proper place.

Eleventhly, The wound is longer a healing in old people, than young; and in such as have their inward bowells weake, perished, or full of evill humors, than such as have sound Lungs, Spleene, and Kidnies. For the bodies of old men being full of ill humors, they slipping down to the Wound, hinder its healing. And this is understood also of young people, which have their inward bowells corrupted. Nor let any Lithotomist think, that it is all one to cut the Stone, and a Rupture, or that Lithotomic (the more is the sorrow it is so common) can be done as easily as Castration. For there are many which have beene bursten ten whole yeares, or more, yet because they felt not paine, their inward bowells are not so corrupted, as those which are troubled with  
the

the Stone ; and thence though before the Operation the needfull preparation of the body hath beene neglected, it hath beene done with lesse detriment ; though this course be not to be allowed of, and it little becommeth a good Artist, who must make his account to God, if thus rashly he apply the Knife to the body of man, and without Care prepares it not, before the Operation, as need requires, and Art injoynes him.

## C H A P. V.

*A briefe Anatomicall description  
of the Bladder.*

**I**T is delivered as an Axiome in all Arts, even in such as be mechanicall, that he which will use his owne Art to his owne credit, and good of others, must know the nature and proprieties of the subject (that is the matter) upon which he worketh. The Goldsmith, if he know not perfectly the nature of gold, and silver, either pure, or mixed with other Metals, cannot performe any good or commendable peece of work : neither will the Joyner, Carpenter, Mason, Blacksmith, and other like, if they know not the quality of wood, stone, and iron, the subjects of their proper Trades, attaine to be Masters of their Faculties, but

will be alwayes accounted bunglers by skilfull Workmen.

Man then being the noblest creature made by God, and the Image of God himselfe, they who are imployed about his body, ought not, like a Carpenter or Mason, whose subjects are wood and stone, to apply the Knife thereunto, but to have an exact knowledge of that part which they are to handle; an error here committed, being of more grievous consequence, than if it happened about other subjects. A Goldsmith if he be mistaken in his work, or doth not perfect it, takes his gold, and silver, casteth them againe into the Crucible, and loseth nothing but his time and labour; nor doth the Plasterour, Carpenter, or Smith, lose any thing that can be accounted of great value: but the subject about which the Physitian and Chirurgian are imployed, is the body of man, and therefore it is most needfull that he should well know its constitution, and divine stupendious structure. Therefore, good Reader, for the young Chirurgians sakes and their instruction, before I proceed to the Cure, and dangerous taking away of the Stone, I have thought fit to adde hereunto a short Anatomicall description of the Bladder.

The sight  
of the  
Bladder.

The Bladder is placed in the bottome of the belly, compassed on each side with the *Os pubis*, *Os sacrum*, and huckle bones; nature having so placed it, that it may the better  
receiv e

receive the thinne and whayish parts of the blood falling from the Kidnies thither, and transmit them againe through the Yard. It lies in men betwixt the two membranes of the *Peritoneum*, above the straight gut, to which the neck is fastned, and in Women above the neck of the Bladder, to which it is fixed; so that the stately Pallace in which man is conceived, and from whence he doth fetch his origine, is sited betwixt the Bladder and the straight gut, that is in the place to which all the filth of the body is brought, as to a Lakes-house; which may justly abate the pride of every one that glories in his owne state, and make them droope which haughtily admiring themselves, spread their plumes like a Peacock. But of this subject, the Reader may peruse my Germane Treatise, or *Speculum vite humane*.

There is another Ligament, called by Anatomists *Urachus*, ascending from the bottome of the Bladder, to the Navill, where it is fixed, and annexed thereunto, to the end that the Bladder being filled with water, may not fall downwards, and oppresse the Muscle of the neck thereof, and so disable it from the retention of urine, the Bladder it selfe being empty sometime not exceeding the bignesse of an Infants fist, though when it is full, it doth grow so great that it may be sometimes felt in the upper part of the *Ospabis*. In the yeare 1604 at *Paderborne* I saw in a man of fourescore

C 4                      yeares



yeares of age, the Urine so suppressed, that his Bladder reached almost to his Navill, and his belly swelled like a Woman great with child, whereby the bladder was so weakened, that his water voyded through his Straight-gut. Of this matter the Reader may see our second *Cent. Obs. 65.*

*Apparatus parvus.*

What I have spoken of the smalnesse of the bladder, the Lithotomist ought to observe when he is to cut the stone with *little preparation*: for the empty bladder being contracted, the Chyrurgian having put his fingers into the fundament, may easily together with the stone, thrust the bottome of the bladder to the neck thereof, and so cut it; which cannot be without danger, the wounds of the bladder in the bottome being mortall, as *Hippocrates* testifieth *lib. 6. Aphorism. 18.* Because the bladder in that place being membranous and consisting of many sinewes, hath also some few veines intermixed, whence the wounds there by reason of the grievous Symptomes, which immediatly attend them, are hardly curable.

Man hath commonly but one bladder, though *Riolanus* and others testifie, that in some men two have been found; but of this argument. see the most excellent & famous Anatomist *Caspar Barhinus*, in his *Theatrum Anatomicum lib. 1. cap. 31.*

The substance of the bladder.

The substance of the bladder, is partly membranous, consisting of nerves, & partly fleshy: the bottome is membranous, that it may be stretched

stretched and hold much Urine, and againe contracted and drawne together; but the neck is fleshaie and fenced with a Muscle called the Sphincter, whose office is to shut up the Urine, and to hinder it from voyding, but when man will: This is the constitution of this fleshie neck, that, that passage by the help and assistance of the said Muscle may be so stopped, that one drop of Urine may not run out of the bladder; but when the bladder is filled, or the urine hath gotten any preternaturall acrimony, and nature desirous to disburthen her selfe of that waight, the Muscles of the Abdomen are stretched, and pressed downwards upon the bladder, and so the Sphincter is opened and doth let forth the urine. Nor doth the Midriffe which divideth the Thorax (the place wherein the heart and lungs are contained) from the lower bowells, give small help for the expulsion of the urine out of the bladder. For in the voyding of water it doth alwayes by force thrust downe the Stomach, Liver and Spleene, which againe presse the other bowells lower, even to the Bladder. But that the Midriffe may the more effectually be depressed, *oftentimes* the breath is to be held, because thereby the Lungs swell, and are dilated, and so increase the depression of the Midriffe. I adde this word (*Oftentimes*) because the breath is not always held in voyding urine. Lustie, strong, young

When the  
breath is  
to be held  
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ding of U-  
rine.

men having their bladders full, may make water without any stopping of breath except  
in

in the end, when there is almost nothing left in the bladder, at which time even they also must a little hold their breath. This doth thence arise, because young men have the expulsive facultie more strong, and the Urinarie passages more large and slipperie than old men, whose bodies are so dried and withered and their strength so weakned, that oftentimes they can hardly without holding of their breath void their Urine.

Women make water more easily than men, because the neck of their bladder is shorter, and so large that not onely their urine, but the phlegme also, & what ever else is contained in the bladder, without any vehement forcing or stopping of breath (especially when they are young) may easily issue out: but in elder women I have often observed that they could not void their water without holding their breath, and much enforcement; the reason whereof is, as we have said of men, because their bodies are dried and withered, and the strength of nature faileth them.

Next to the foresaid Muscle or Sphincter, nature hath placed two Kernells, called *Prostata*, into which the seed of man is gathered when it is perfectly wrought by nature, and reserved to its use.

These two parts, to wit the Muscle of the bladder or Sphincter and the *Prostata* are chiefly also to be regarded by the Lithotomist; especially when he is to cut out the Stone  
with

Of the  
*Prostata*  
and their  
use.

with little preparation; for if the Sphincter, or Muscle of the bladder should be cut, or torne with instruments, the sick man would not be able to reteine his urine any longer; but as it falleth by the Ureters from the Reines into the Bladder, so also it would distill by drops through the Yard. And if the forenamed Kernells or Prostatae should be cut or torne, then the man would be barren and unfit for generation.

The Bladder consisteth and is made of three kind of membranes; the outward whereof proceedeth from the Peritonaum, or inward membrane of the Abdomen, and is thick and strong, that the bladder may not break when it is enlarged, and stretched by much urine. Besides by the help of this membrane, the bladder is fastned to other neighbouring parts, and therefore it doth not stick, nor is fastned so close to the bladder as the other two, which (to speak properly) make the bladder, and are so closely joyned together, that many have thought them to have been but one Membrane or Tunicle. These membranes are grosse, thick, slender or thinne according as the bladder is stretched with the quantity of water: yet neere the bottome and the neck of the bladder, as also in those places where the Ureters are shot from the Kidnyes into the bladder, they are alwayes thicker than elsewhere, and especially about the neck of the bladder; least those parts should be weakned by the sharpnes of the urine, and the Stone.

Of the  
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der.

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The inward membrane of the bladder is cleane, white, thinne, slender, subtile and of a nervous matter, which doth cause it to be of most exquisite sense: and as all the other membranes which are to be drawne out and contracted, it is formed of three sorts of sinewish small veines; whereof such as are straight are inward, the thwart ones outward, and the crooked in the middle: by the help of the fibres the bladder performeth all its offices, that is, drawes, retaines, receives, and againe expells.

But lest the bladder should be weakned by the acrimony of the urine, it is lined within with a slimie little skin, which, as the Anatomists think, is made of the excrements of the third concoction. This slimie humour, is often found in the water when there is any stone in the bladder. The middle Tunicle of the Bladder, doth something surpasse those afore mentioned in thicknesse, and is inter-woven with fleshie fibres, not red like those in the Muscles, but whitish like those in the stomack and small gutts. By the help of these fleshie fibres (in my opinion) it comes to passe, that the wounds of the bladder may sometimes be cured and consolidated. By them also the naturall heat of the Bladder, though otherwise small, is cherished, and augmented, and the bladder assisted in the voyding of water, because they something thrust it together.

But it seemeth a wonder to many, how the  
urine

urine falleth into the bladder, there being but one hole to be seene in it, and that in the neck, when it is taken out of the body; whence *Asclepiades* a man of excellent learning amongst the ancient Philosophers, and Physitians, thought that like a cloud and vapour, it went into it by insensible transudation; and was afterward turned into water, which erroneous opinion *Galen* hath confuted in many places.

At this very day wherein the art of Physick is brought to perfection, so many excellent men having illustrated it by their writings, and yet daily teaching it in the Universities, and shewing it by ocular demonstration, there are some to be found, not onely amongst the vulgar sort of men, and such as want Arte, which follow *Asclepiades*, but even amongst the Chyrurgians themselves which have no knowledge of Anatomie, or the subject which they handle. Hence if there be but mention made of Ureters, they stand amazed, seeing there is but one only hole in the bladder to be seene, through which the Urine runs out. It is much to be lamented, that the most noble Arte of Chyrurgery, should be brought to this passe that many would be counted perfect Artists which know not the first grounds of arte; they challenge the titles of Cutters of the stone, and Cutters of Ruptures, when they know not the constitution and the Anatomie of those parts; and therefore it is no wonder, that the sick languishing people should either dispaire  
of

of help, or els make shipwrack of their life, and health.

But to returne to my purpose, it is thus: the bladder hath three holes, two a little above the neck, to wit on each side one, where the urinarie passage called by the Anatomists the Ureters, falleth from each Kidney. These then being planted into the bladder on both sides (as hath been said) have each their peculiar membrane whereby that Urinary passage is stopped so close, that not only the water, but the wind also cannot goe back and breake forth, as we may see in the clicket of the bellows, which being closed, vent out no wind, and the more they are blowne, reteine the spirit the straighter: so also these double doores called by the Anatomists *Vaioula*, are shut so close, that even wind, when the bladder is blowne full, cannot break through them.

These Ureters arise from the Kidnyes, and descend and fall downe on both sides, within the *Peritoneum* or inward filme of the Abdomen to the bladder: they are white, and thence by some are called Nerves, and are in nature like Nerves, and conteine little blood; they are round, but not very large, except onely in such as have the Stone, in whom they are so dilated by degrees, that sometimes stones of good bignesse are voyded through them; but if it happen at any time, that the stone stick in the Ureters, a danger not despicable doth ensue it; for that retention of the stone by reason

The retention of the stone in the Ureters dangerous

of

of the most acute sense of the part, doth afterwards produce a grievous paine attended with tumours, inflammations, the Gangrene, and death it selfe, as I my selfe have often scene, and that not lately.

The Ureters also, by the small and little fibres of the veines and Arteries, receive nourishment from the neighbour parts, which keep them in life; The nerves also derived partly from the sixt conjugation of the braine, and partly from the back-bone, are derived to them, whence that most accurate sense and paine of the Loins, when the gravell or stone falls downwards from the kidnyes into the bladder, hath its beginning. And let this suffice to be spoken of the two upward passages, or Ureters, by which the water falls from the Kidnyes into the bladder.

The third hole in the bladder is its neck, or lower *Aqueduct*, known to every man, by which the urine, phlegme, gravell, stones, and other preternaturall contents passe out of the bladder. It is fleshie, but interwoven with many small veines, by which reason the wounds thereof are easily cured.

Of the Sphincter and Prostatae we have spoken formerly, and it is needlesse now to make any repetition.

But that this Urinarie passage is more large than the two former, it is hence manifest, because that oftentimes when the stone doth fall from the Kidnyes to the Bladder, it causeth  
grievous



grievous pains in the Ureters; but being in the Bladder, it is often voyded without paine, through the Yard; and yet this passage through the Yard is much straighter in men than women.

One thing more must not be omitted in the conclusion, to wit, that on both sides of the neck of the Bladder, there are some veines and arteries derived to the Bladder and the neck thereof, which are deducted from the Hollow veine, and great Arterie, after it is divided under the Kidnyes; from the veine that it may minister nourishment, and from the Arterie, that it may communicate heat to the Bladder and neck thereof.

An admonition to the Chirurgicalian.

These veines and arteries are carefully to be observed by a Chirurgion in cutting of the Stone, that so he may forbear them, as much as may be; which he can scarce doe, when he goeth to work with small preparation: for then they are so tumbled and thrust together by his fingers in the fundament, that not some one, but many branches thereof may be cut; But when the work is done by the *Itinerarium*, then all the veines are extended in length, neither can so many sprigs of them be cut, as every wise man, if he will scanne it well, may easily judge.

Let this suffice for a short Anatomical description of the Bladder, and as much as is needfull for a Lithotomist to know. He that will be instructed farther, let him advise with

*Galen,*

*Galen, Vesalius, and principally with the most excellent and famous Anatomist and Herbalist Casper Bauhinus in his Theatrum Anatomicum.*

## C H A P. V I.

*What the sick man from whom the Stone is to be taken, ought to consider, and how hee should prepare and dispose himselfe for this dangerous Operation.*

**E**Very carefull and provident Master of a Family, being to build a great and stately house, will first take care to provide needfull materials, as wood, stone, and whatsoever else is requisite, and then looke out for an industrious, skilfull, and faithfull Architect. Because therefore, good Reader, in the most difficult, and dangerous practise of all that can be made upon the body of man, there is matter of more consequence than in the building of a house or towne, and the life (as they say) sometimes depends upon a twined threed; therefore thou shouldest be carefull to doe nothing rashly, but with maturity of counsell and discretion: for to be too hasty in this case, and to omit any thing, is to hasten thine owne destruction.

First therefore and before all things, because the houre of death, and the departure out of

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this

this life is unknowne, and the Lord will come like a Thiefe in the night; yea, because in this great and dangerous Operation, life and death doe so wrastle together, that no man can tell which of them will have the victory; thou shalt first therefore set thy house in order, that if thy houre be come, thou maist depart out of this life with a cleare conscience, and thy Children and heires after thee may be free from all difference, strife and dissention. Then thou oughtest to make thy peace with God, to confesse thy sinnes and trespasses to him from thy soule, to repent seriously, and not only with a pure heart to implore his divine assistance and presence, thy selfe, but also to sollicite the Christian Churches, and congregations to remember thee in their prayers; for the prayers of the faithfull availe much, and pierce the very clouds, as I have found alwayes, in the most difficult cases, where all things appeare desperate, and chiefly in the extraction of a dead conception.

*An Observation.*

In the yeare 1610, the 14 of May being mooneday, the most noble and excellent Lord, *Zacharie Geizcofter a Geilenback*, Lord in *Hausenheim Weschenburen* and *Moes*, Knight, and Councillour to his sacred Imperiall Majestic *Rodolph* the second, Arch-duke of *Austria*, being to be cut of the Stone, his Subjects were not onely called together the same day at the Church of *Hausenheim*, and admonished to make fervent prayers for him in  
the

the whole assembly, but the day before also in all the Evangelicall Congregations of *Ausburg, Ulme,* and *Langengen*, there was mention made both of this personage, and the dangerous Operation to be made in his body, and the Lord was invoked, and prayed heartily to blesse the Work, and Cure; and that not uneffectually, the Lord so blessing it, that all the people were taken with admiration.

Many examples of this kinde I could produce, but that I study for brevity. It were therefore much to be wished, that in all these dangerous and great adventures of cutting the Stone, cutting of Ruptures, and decouping limbs, all Lithotomists and Chirurgians were enjoyned by the Magistrate and Pastor to observe this Christian custome; whereby oftentimes both the bodies, and soules of many sick persons, which either under the hand of the Chirurgian, or little after, die without any comfort, or preparation, may be preserved.

I would therefore desire the supreme Magistrate every where, and the Rulers of the Church, to take a care for those poore soules which lie here and there in Hospitals for Chirurgerie, and to supply them not only with things corporall, but also spirituall; and that also because if they faile in their duty herein, they must give an account thereof at Gods tribunall. Hereunto that should also stirre them up, which our Lord Christ Jesus will speake unto them and all men else, at the day of

Judgement, whatever yee have done to the least of mine ( meaning the poore ) yee have done to mee. How then shall they be dealt withall, which in his members ( the poore ) shew themselves so ungratefull to him who underwent death for them, delivered them from everlasting punishments and torments, and in this world raised them to the height of honor above their fellowes? the Lord will thus speake unto them in that last day, Depart from me ye wicked into everlasting fire prepared for you and the Devils; for I was hungrie, and ye gave me no meate, I was thirstie, and ye gave mee no drinke. In which words not only corporall meat and drink are to be understood, but also Spirituall, to wit, helpe, comfort, and exhortation at the point of death.

Malefactors being to undergoe their punishment, have some Preacher assigned them for the salvation of their soules, and that with good reason; and why then is it omitted when people are to be dismembred, or cut for the Rupture or Stone? since death there is not only eminent, but the sick man also doth so faint under the burthen of pain, that it is to be feared lest he should die desperately, distrust- ing of grace and mercy, unlesse he be cherish- ed with some Christian consolation, which, as a common concerne, I leave to each mans meditation.

## CHAP. VII.

*What Physitian the sick man ought to chuse, and  
with what Vertues he ought to be  
endewed and adorned.*

**A**S a wise and discrete Householder, having provided all things needfull for his building, as Wood, Stone, Lime, and the like, and disposed them all in order, neither hireth nor trusteth every Carpenter, or Plaisterer, but doth use all care to get a faithfull and skilfull Architect; so also the sick man should endeavor, not to trust his body and life with every Emperick, wicked, hair-brained and unskilfull fellow, especially in this disease of the Stone, but should regard the condition of the man whom he useth for counsell, and whether he be indued with these following vertues.

First therefore hee shall take care that the Physitian be godly, faithfull, honest, blamelesse, not given to blasphemie or other vices; for though godlinesse be needfull for all sorts of men, yet it is most requisite in such as practise Physick; for God Almighty doth often abate the power of the Medicines, when he which administers them, is an ungodly and blasphemous man: and contrariwise, doth give wonderfull power to things

*How the  
Physitian  
is to be  
qualified.*

despicable and vile, when they are admistred by good and godly Physitians.

Let him not be given to drunkenness, lust, and gaming; for thereby some thing may be omitted this day, which cannot be repaired to morrow, because occasion is hasty, and to be taken speedily, as *Hippocrates* teacheth, *lib. I.*

*Aphorif. I.*

Let the sick man beware of such as be praters, and think gloriously of themselves, as if there were none like them, and promise many impossible things; for it often falls out according to the Poet,

*Inspicienti major inest jaellantia menti,  
Vas etenim pleno tinnit inane magis.*

*The greatest bragger is the least profound,  
As empty vessels make the biggest sound.*

Besides, it is sometimes tedious, and troublesome to a sick man, when the Physitian or others use much tattle, laugh, and toy. Hence saith *Menander*,

*Medicus loquax alter languentis morbus est.*

*A prating Leech doth doe his Patient wrong,  
An other sicknesse sits upon his tongue.*

Such a one I once saw at a Noble mans house, who thought, with much talk, and Instruments of Musick to recreate and delight the sick person, who presently commanded his

his Steward to pay him his Fees, and sent him packing. I wondring at his Action, hee told me that he would then send for him againe when he purposed to keepe a feast of jollity.

Let the sick man also diligently enquire, whether the Physitian be rash, & hair-brained, for many (more is the griefe) are found, which will no more refraine the cutting of a mans body, than a Carpenter or Mason doth wood or stone; and though they see no hope of preserving the Patient by Lithotomie, nevertheless they care not, they take his mony and deceive the world; that is, fearelessly and without advice of the skillfull, they make incision on his body; a thing not to be allowed of; for where there is no hope of recovery by Lithotomie, the thread of life is not to be cut off rashly. Nor can it excuse them, though they pretend it was their Patients desire, that he entreated them to doe it, that he had rather die, than live longer in such misery and torment. No surely, this is not the way to heaven; we must know, that the houre prefixed us by God, must be expected with Christian patience, and that also *through many tribulations we must enter into the Kingdome of heaven.* Every industrious Physitian ought to propound this to his Patient, and to comfort him thereby, and afterwards to think of, and apply all those meanes, and wholesome Medicines which may mitigate his paine.

Act. 14. 22

Nor is it a small argument of rashnesse,

D 4

when



when the Chirurgians doe not carefully enquire and search whether there be any Stone in the Bladder or no, but being induced with some slender suspicion and signes of the Stone, apply the Knite unto the Bladder, search it with their Pincers, and finde no such matter there (as I have knowne it fall out) because the Chirurgian must give over with shame, leaving his work undone, and the wound againe is to be consolidated.

The wound is not presently to be closed up after the incision.

It is also an argument of rashnesse, when the Lithotomist as soone as the Stone is taken out, would heale up the wound, and makes poste haste to do it; for so the phlegme, gravell, and the like, remaine in the Bladder, and stirre up new symptomes of a worle condition than the disease it selfe.

Nor is it less rashnesse, when some of them will cause their Patients whom they have cut for the Rupture, to rise out of their beds the third, fourth, or sixth day, hunting after vaine glory, before the *Peritoneum* be well healed; for then oftentimes the Cuts fall down again, and produce mortall symptomes, which at this time it is to long to repeat.

But it is more to be lamented, that some out of meere rashnesse, and indiscretion (as I my selfe have knowne) lay the sick man upon a Forme, binde him, and instead of a bursten man fall to cutting of a sound one; these are justly to be punished by the Magistrate for their villany, and to be paid in their owne coyne;

coyne; for it is written, *An eye for an eye, a tooth for a tooth, a foot for a foot, &c.* They who have care of their life and health, will take heed of such wretched fellowes, and not trust so much as their skinne in their fingers.

Exod. 21.  
24.

Besides all this, it is chiefly required, that the Lithotomist & cutter of Ruptures, should be well vered in the Anatomical part of Physick; for without it what good can they doe on mans body, and principally on that part in which the work is to be done, seeing the nature, propertie, & temperament of that thing which is to be handled, is to be exactly knowne and understood? The Chirurgian that knoweth not Anatomie, may easily in dissection take & cut one thing for an other, as it hath often happened, and I have shewed elsewhere by examples.

The Chirurgian must be a good Anatomist.

Furthermore, let him be no meere stark Emperick, which hath nothing but bare experience, but one who hath learned something of the grounds of Art, that hee may know the nature and constitution of the sick persons, the causes of the diseases and symptoms, and prevent them when they are discovered, because it is impossible he should alwayes have a Physitian at his elbowe. It is therefore to be wished, that all that would be Chirurgians, be a little brought up in good literature, that so they may have access to *Hippocrates, Galen, Avicen, Aegineta, Celsus*, and others the chiefe fountaines of Physick, and thence gather and learne

learne the grounds of arte. But because these Studies are now contemned by our Germans, it is no wonder that this Arte of ours is buried in the mire, and other Nations so farre exceeds us.

Likewise also the sick man, should beware of such giddie Fellowes which would attaine the Art, though their knowledge were to bee gotten by the death of a hundred common men; they beginne the worke, and care not whether it prosper or not, or the Patient live or die. This sort of men thinke it sufficient, if the sick man, as one of a desperate estate, hath trusted himselfe with them, and conclude there needeth no other excuse before God or man. These are loose fellowes without Conscience, and Science, of whom the sick man must carefully beware: it being most needfull, that a young Lithotomist should see the Stone cut by other skilfull practitioners, as every man by himselfe many easily determine: Nor ought the Phisitian to be addicted to covetousnesse, his owne private profit and gaine; for by this meanes, the sick doe often fall into much misery, and are ill provided for; to wit when the Phisitian through covetousnesse and desire of lucre is sparing in his provision, and doth not administer those things which are convenient and needfull: or when he should take care for his Patient, followeth some other businesse, and committeth him to some Novice, and forsakes him.

To conclude, he ought to have a firme, steady and strong hand, as also a quick sight, that he may dispatch the work with expedition, and the sick man may not long be delayed and tormented.

But it sufficeth not, that the Physitian be indued with the foresaid vertues, industrie and experience; but it is farther required, that the sick man next after God (the Physitian of Physitians) put his whole trust in him, and affect him with a singular love: for if the Patient bend his brows upon his Physitian, or rayle against him, or frumpe him without cause, and would have his disease and maladie to be taken away, as with a sponge, and raked out with his nailes, as if it were in his power to handle, governe, rule, extend, or contract the disease at his will, as the Gold-smith doth handle his gold and silver, and the Black-smith his iron. Yea if the sick man doth not acknowledge his disease to be sent from God almighty for his sinnes, to bring him to repentance, and abstaine from them, then God doth justly punish that great ingratitude of the Patient towards the Physitian; neither doth he blesse his labours, and medicines, as it might otherwise be, if the sick person would shew himselfe curteous, both in words and deeds, and thankfull according to his ability. In a word the holy Scripture commandeth us to honour the Physitian, because the Almighty hath appointed him, that is, hath called him to this office and vocation.

vocation. In which words the Scripture doth distinguish who are lawfully called to this work, and approved by the learned, from those who not after the wonted manner enter by the gate, but like Thieves creep in by windowes and backdoores, and by whom the sick men are deprived of their health, with their goods and estate. Such are idle unskillfull Montebancks, Juglers, vagabonds, executioners and other detestable villanes of this rable, whom many would scarce trust for a farthing, when as in the meane time they trust them with their health both of their body and soule; So farre the Divell hath blinded men, for no other cause but our ingratitude towards God, and because we despise his heavenly, wholesome and pretious gifts. Whosoever therefore should be ungratefull to a faithfull and industrious Physitian, being ordained by God, whether in word or deed, much more by keeping back his reward, (of which sort I have often met with many) he may easily perswade himselfe that God will be avenged of him for the labour and trouble which the godly honest and faithfull Physitian hath undergone for the sick mans sake.

When therefore the sick man hath got a Lithotomist endued with these said vertues, and hath disposed of his businesse as is aforesaid, he may (first desiring Gods assistance) submit himselfe to the Operation.

And this may briefly suffice concerning those things

those things which rest to be considered by the sick man before the Operation.

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## C H A P. VIII.

*What must be considered by the Lithotomist, before the Operation, both in respect of the Stone, and the Patient, where is also shewed that the extraction of every stone is not to be attempted, and that all sick persons are not fit for Lithotomic.*

**I**N the former Chapters we have briefly declared how the sick man ought to prepare himselfe for cutting and what manner of Lithotomist he should chuse: it now follows that wee adde something of the Artists duty; and set downe all things methodically. I will so dispose them, that I will first declare what the Lithotomist ought to doe and indeavour before the Operation; Secondly, in the time of the Operation; and lastly afterwards.

What Artist soever, in this dangerous and difficult worke, desireth to doe any good, and to serve his Neighbour faithfully, and to appeare before God, and not incurre eternall damnation, must first with all diligence find out the model of the Stone, and then the nature of the Patient, and attempt nothing unadvisedly;

sedly; the manner whercof we shall unfold more largely as followeth.

What is to be enquired in respect of the stone.

I. Whether there be a stone or no?

*Vide Cent.*

2.

*Obs. 65.*

As concerning the stone, it must First be inquired and tried whether there be any stone there or not; nor are those rash and bold Empiricks to be imitated, who upon a sleight suspicion of the stone, without farther inquisition, apply the Knife, expose the sick person to extreme danger, and themselves to scorn. There can be no absolute confidence upon the outward signes of the stone, nor by the tryall of the fingers in the fundament; for in the dissection of dead Corpses, I have sometime observed that hard scirrhus Tumors might be felt, and have beene found, which, while the man was living, have appeared by the fundament as hard as stones; and which is more, that those hard tumors about the neck of the bladder, have caused almost the same symptoms which the stone would have rayfed, if it had beene there.

That these hard and scirrhus Tumors cannot be taken away by incision without danger of death, it hence appeares, because as I my selfe have seene it, they are firmly fastned, and growne to the bladder and neck thereof, as if they with the bladder had made but one body. The best and surest meanes then to find out and discover the stone, and distinguish it from those hard tumors bred in the bladder, is done by searching with an instrument; for it cannot be discerned by thrusting of the fingers into

into the fundament, though the bignesse of the stone be thereby commonly discovered.

Secondly, it is needfull to know the bignesse of the stone; for if it be over-great, nothing else but death can be expected; and it often happeneth that the Patients die either in the time of the Operation, or little after.

2. The  
greatnes  
of it.

*Andreas Vitellius*, a famous cutter of the Stone and Rupture, in the yeare 1602, upon All Saints day, at *Hastings* in *Marchland*, tooke a Stone from a young man, which weighed 22 ounces, but the Patient died that very houre, and under his hand. I could produce many other examples if need required.

Vide  
Cent. 4.  
Obs. 51.

That sentence therefore of *Cornelius Celsus*, *Desperati non sunt attingendi*, that is, that the Physitian ought to forbear where he seeth no hope of cure, must take place when the Physitian knoweth certainly that the sick person will die; yea, it appeareth a rashnesse in a Lithotomist to practise his Art upon such Patients, because the sick man may perhaps live with his disease, to the service of God, and good of his Neighbours: besides that, the fact is hardly excusable before Almighty God. Therefore every godly and faithfull Artift, should commit such Patients, to the care of learned Physitians, and Divines; to the Physitians, that as much as they can, they may abate and assuage his paine; to the Divines, that they may give him comfort, and exhort him to Christian patience and constancie, till the



the greatest Physitian shall give the remedie ; experience testifying , that many sick persons afflicted with this disease may still survive.

*Petrus Pigray*, an experienced Chirurgian, *Lib. 7. Cap. 4.* writeth , that he knew a Noble man who had the Stone 25 yeares , yet without any notable paine, because when he was to make water, by application of his Instrument he did it without paine.

And this being so , why shouldest thou, O Chirurgian , expose the body of thy Patient, and thy owne soule to danger ?

Moreover, if thou be certaine also ( which certainly is hardly attained to ) that the Stone doth grow unto the Bladder, then Lithotomic is not to be prescribed ; because in pulling away of the Stone, the Bladder would also be torne, and nothing could then be expected but danger of imminent death.

In the yeare 1610, I was called out of *Alsatia* into *Basil*, together with the most famous and learned Physitians , *Felix Platerus* , and *Caspar Bauhinus* , to one of the prime Nobility there, who for many yeares had been grievously tormented with the Stone, yet no Lithotomit could ever perceive any Stone to have beene there, though he had advised with many most experienced Physitians. Nor could I my selfe with all my care and studie , applying both my finger and my Instrument, finde that there was certainly any Stone in the Bladder. Yet in this man, as *Bauhinus* my singular

gular friend told me by word of mouth, and testifieth in his *Theatr. Anatom. lib. 1. Cap. 31.* after his death there were found some great Stones enclosed in a peculiar Bagge, or Pannicle growing to the Bladder. If therefore any Lithotomist or Cutter should have only observed the signes of the Stone, they were all apparant in this noble personage, save onely that nothing could have been found out by the finger or Instrument, and if afterwards he should have used his arte, and have thrust in his Pincers, and as it might easily have happened, have pulled the stone with its Bagge, in what case had this sick man been? Surely in the same that many others are, which fall into the hands of unskilfull and light-brained men; and have died suddainly with extreme torment of his Bladder, and Inflammation of all his bowells, when neverthelesse bearing his sicknesse about him, he was able to live many yeares after to the service of God, and the government of his Family. Nor is it to any purpose that many professing this Arte, say, that the Dye is cast, and it mattereth not how the sick man be delivered from his paine, either by this way, or that; we must not so conclude, for God Almighty doth often visit and chastise our bodies in this life, with these and other diseases, that wee may thence learne to mortifie our flesh, that our soules may be saved. This *Saint Austin* well observed when he prayed to God so earnestly saying, *Hic ure,*

*hic seca ut in aeternum parcas.* And this againe I repeate, that the Chyrurgian knowing (as he ought to doe) that there is no hope of recovery by Lithotomie, he should not attempt it.

The constitution of the Patient is to be considered.

As concerning the sick man, it is first before the Operation to be carefully inquired, whether he be a fit subject upon whom the Operation may be made? for if there be a great stone found in an Infant (as it often happeneth) it is manifest to be concluded that it cannot be taken away without danger of death; because they are too weake and impotent to endure that great torment, which attendeth this Operation; whence *Cornelius Celsus* and some of the Ancients would not have children cut of the stone before they were nine yeares of age; yet experience testifieth, that many, of fewer yeares have happily indured the Operation, and been cured; especially the stone being of a small size.

The same reason holdeth also in old men: for though the Dimension of their bodies may seeme to have some proportion with the bignesse of the stone; Yet it is to be considered that their bodies are dryer and more withered than the bodies of young people, & that thence their skinne, muscles, veines and the like, cannot so easily be extended and dilated as in the younger sort, which have a hot and moyst temperament. Neverthelesse I have seene this practise to have sped happily in old men; but then

then indeed the stones were not very great.

In the yeare 1610 *Iacobus Iohannes Mirck* the most experienced Lithotomist of Ulme, in my presence, and in the presence of many other famous men, drew out two stones (one whereof weighed  $\text{xxij}$ .) from the valiant and Noble Lord *Zacharias Geizcofter* Lord in *Geilenbach* and *Hausheim*, Knight and Councillor to his Imperiall Majestie, and the said Lord recovered his former health, lived many yeares after the Operation, and did good service by his sage counsell to the Roman Empire.

In the yeare 1598, the 28 of July, at *Vivatium*, neere the lake of *Lemane*, I my selfe took a Stone from the Noble Matron *Urbana Hugonin*, (a woman of forty yeares of age) bigger than an Hennis egge, who was recovered, and lived in health, ruling her children, and governing her family untill the yeare 1611, and felt no paine of the stone untill her dying day.

Secondly the temperament of the sick man ought to be carefully observed also; for if the Patient be growne weake by the vehemencie and continuance of paine, so that the internall bowells, as the Lungs, Liver, Kidnyes, &c. be in part weakened and putrified, then this Operation is not to be appointed; for both cost and labour is lost, and the sick person will dye by the Symptomes which immediately ensue it.

And here againe it is needfull that the Chyrurgian advise with some skilfull Physitian, to whom the constitution of the inward bowels is better known. But if any weaknesse happen alone through the vehemencie of the paine, without any corruption of the inward bowels, the Physitian shall assist him before the worke; which is to be done by gentle purgations, Clifters, good diet and Cordials.

In the yeare 1598 when I had refused to draw out the stone from the said Lady *Hugonin* at *Vivatium*, because of her great want of strength, and had injoynd her good diet, purged the body, and had prescribed her some Cordials, as well outward, as inward, within few weeks (because her bowels were sound) she was so recovered (as I said;) the 28 of July I tooke a great stone out of her bladder, by *Lithotomie*, as you may see in the first of my Observations.

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### C H A P. I X.

*By what meanes the body of the sick man is to be prepared by diet, purging, bleeding, bathing for the Operation.*

**W**Hen the stone is once discovered and detected, and that either the sick man himselfe or (in his nonage) his Kinsmen, and friends have concluded to have it taken

taken away, the Chyrurgian being called to undertake the worke (for it becomes not an honest man to thrust himselfe upon this or the like difficult works, like Quacksalvers and Mountebanks) he shall not then immediately apply the Knife to his sick Patient, and deale with him as the Butcher doth with a Mutton, and tie him to a forme. No surely; an other course must be taken: for if thou wouldest performe the worke rightly, and have a cleare conscience before God, the body of the sick man is to be prepared, and made fit thereunto, by fit diet, purging, bleeding and the like, before the act of Lithotomie.

And here againe, every Artist must have an especiall care, to consult with some skilfull Physitian, who can discover the nature of the Patient, and the constitution of his inward bowels: or if this cannot be, let him first prescribe, and injoyne his Patient a good diet, especially for meat, and drinke, that he may observe it, some dayes before the Operation. *His diet.*

And in the first place, let him avoid all things that be Costive, and of hard concoction, as are all sorts of salt and smoaked flesh, fish, venison, cheefe, and the like.

And againe, as well in the time of the cure, as afterwards, he shall beware al things which are salted immoderately, or seasoned with spices, especially of Pepper, Ginger, Cloves, Radish, On.ons, and all things that bite the tounge and have any acrimonie; yet he may

use Cinnamome, Saffron, Mace, and Nutmeggs, as shall be convenient.

Thirdly all slimie things are to be avoyded: as the Heads, Feet, and Bowells of living Creatures; as also Milk, Cheese, and Fish living in muddy waters, and others of that kinde are hurtfull to the sick man.

Let him therefore feede upon fresh Beefe, and Mutton, Chickens, Pigeons, all sorts of Birds (except water-foule) eggs, fresh Butter, Barly, Water-gruell, the broth of fish, and the like.

Let him refraine wine, and all extraordinarie heating drinks, and instead of ordinarie drinks, let him use the common Ptisan, or this decoction following.

*Rx. Agrimon. Veronic. an. m. ℥. Liquirit. ℥. ℥. Incidantur & decoquantur in ℔. iij. aqua fontan. ut remaneant ℔. ij. que ebullientes in \* Cantharum infundantur, addendo Cinamom. ℥vj. Sacch. ℥j℥. Cantharus subito ac probe obturetur, ut nihil exhalet.* Then let the decoction coole of it selfe, and the sick man drinke thereof at his pleasure.

\* The Authors word is Cantharus, but I conceive a glasse, or glazed Earthen vessel better.

The milke of sweet Almonds is wonderfully helpfull for him; especially if to two parts of Almonds, a third part of the seeds of Cucumbers and Melons be added, and all transfused through a Linnen cloath with the water in which a crust of bread hath beene boyled, with some addition of Sugar.

He must also eschue the unruly passions of  
his

his mind, especially anger, sadness, and the like; observe a moderation for the times of sleeping, and waking, have a temperate warme aire in Winter, & in Sommer often sprinkle his Chamber with cold water, and strew it with cooling hearbs and flowers, that the hot distemper of the aire may be somewhat abated.

Next, his body must be purged before the Operation, but with gentle medicines, such as *Purging* shall not provoke too violent stools, lest a new humour should by chance be brought downe to the Urinary passages, and there augment his passion.

For Infants *Syrup. rosat. solut. or de Cichor. cum Rhabarb.* will be enough.

But if the Patient be grown up, then a little of the *Electuary de succo rosat.* may be added and mingled with some *Endive water*: For those of ripe yeares, this following potion is convenient.

℞ *Rad. Cichor.*

*Lapat. acut.*

*Polypod. an. ʒj.*

*Liquirit. mundat. ʒii.*

*Herb. Scabios.*

*Agrimon.*

*Veronic. an. m. ʒ.*

*flor. ʒ. Cordial, an. p. j.*

*sem. Anis. ʒii.*

*fol. Senne Alexandrin. mundat. ʒiiij.*

*Coquantur in aqua, ut colatura redeat ad lb. j. in qua infundantur, & maceventur per noctem*

E 4

*Rhabarb.*

*Syrupus  
Magis-  
tralis.*



Rhabarb. elect. ℥ij.

Agaric. recent. trochiscat.

Turbith gummos. an. ℥j.

Post sufficientem macerationem, & ebullitionem unam aut alteram, exprimantur fortiter, & cum ℥ij. Syrrupi rosat. solut. comp. nec non ℥vj. Sacch. miscellanei. f. Syrrupus Magistralis.

Halfe an ounce of this Syrrup is to be given to an Infant who is to be cut for the Rupture or Stone, and ℥j. to one of more growth, and the dose may be encreased according to the age. It may be mingled with the water of Endive, Ptisan, or the prescribed decoction of Agrimony.

But because this kind of sick men, by reason of the great and continuall foregoing paine, are full of many grosse humors, one single purge is not enough, but more are to be administred, untill they be sufficiently purged, and so the cure will thrive the better, and the symptomes cause lesse molestation.

*Bleeding* The body being sufficiently purged, with the foresaid medicines, as the age, strength of the Patient, fulnesse of blood, and other circumstances doe agree, a veine is to be opened, and blood to be let; and that is done commonly on the right arme in respect of the Liver; unlesse perhaps the sick man have some disease on his left side, or by the advise of the Physitian a veine is to be opened on the left side.

And

And if any accustomed egestion be stopped in the sick person, as the Hemorrhoides, or the Monthly Termes of Women, then after the purgation of the body, they are the first to be procured, before phlebotomy is to be used.

Some <sup>a</sup> Artists doe still maintaine this dangerous abuse and custome, to administer to the sick person three dayes before the incision, a strong Diuretick potion, both in the morning and evening, to thrust the stone to the bladder; but what inconvenience may the Patient suffer hereby, amongst other abuses, shall be shewed hereafter in *Cap. 23.*

Fourthly the belly is to be softened, and made loose and slippery before the incision, by regular and sufficient purgations, that in the Operation (as it must needs often happen) when a great Stone is to be drawne through a little hole, the membrane and Muscle of the bladder may be dilated, stretched, and opened, with lesse danger. For a <sup>b</sup> Bath, let him use the things following.

*℞. Rad. Althea,*  
*Malv. an. ʒij.*

*fol. Althea,*

*Malv.*

*Violar.*

*Parietar.*

*flor. Chamomill.*

*Meliot. an. m. j.*

*Sem. Anis.*

*Melilot.*

*Anech.*

<sup>a</sup> Hildanus his word is *Castratores*, which he useth to disgrace Mountebanks; yet I have here candidly thus translated.

The belly to be softened.

<sup>b</sup> The word is *Semicupium*, which I take for a bathing tubbe.

*Aneth.**Lini.**Fœnugrac. an. ʒj.*

*Incidantur & contundantur omnia grosso modo, coquanturq̄, pro Semicupio.*

Let the sick man be put into this Bath, three or foure dayes before the Operation, in the evening, two houres after supper, that from the warme Bath he may goe to his warme bed, and there take rest. As often as he goeth from the Bath, and hath rested halfe an houre or longer, lett all his belly be annoynted with this following Unguent.

An Unguent  
to  
loosen the  
belly.

*Rx. Ol. Amygd. dulc. recent.**Lilior. alb.**Scorpion. an. ʒj.**Pinguedinis Capon.**Anseris, an. ʒss.**Unguenti Dialthea, ʒij.**Misce. f. Linimentum.*

But if the sick man take no pleasure in the Bath, or any impediment prevent it, then take a sufficient quantity of the foresaid hearbs, put them into a Bagge, boyle them in water, and apply them to his Perinaum, or seame of the Coddles, but in that proportion that they may also cover all the parts thereabouts.

## C H A P. X.

*What time of the yeare, and age of the sick man  
are most fit for Lithotomie, wherein also  
is treated of some other prepara-  
tions necessarily preceding  
this Operation.*

**I**T is not enough to have cleansed and purged the body of the sick person, but in this dangerous work, the time of the yeare must as much as may be respected.

The Winter being cold, is by consequent an enemy to the nerves, and hurtfull to all the parts that be of a nervous kind; for because that extremity of cold doth constipate our bodies, and contract all things, the Winter-season cannot but be dangerous for this Operation. The Win-  
ter.

The extreme heat of Summer (especially the Dog-dayes) is alike dangerous, because it heates the internall bowels in the body of man, inflameth the blood, increaseth Cholcr, disperleth and consumeth the Naturall heat, and Radicall moysture, and so causeth many dangerous symptomes; and therefore this worke of difficultie is not to be then commenced, as may be proved out of *Hippocrates. Lib. 4. Aphorism. 5.* The Sum-  
mer.

The Spring, as being temperate, is the most safe of all the times of the yeare, as *Hippocrates* witnesseth; The  
Spring.

witnesseth, *Lib. 3. Aphorism. 91.* It makes our bodies plyant and fit for this Operation, and is (as *Celsus* and others testifie) the best and most convenient season for this difficult and dangerous worke, and thitherwards a carefull Physitian will principally aime, especially if the worke may be delaycd without danger.

The Autumne.

The Autumne, though therein the inconstancie of the weather doth cause divers diseases, and dangerous symptomes, yet by reason of his moist temperament, is more fit for Lithotomie than Summer which offends in extremity of heat, or Winter which doth the like by extremity of cold.

How the contrary qualities of the aire are to be corrected.

But, if necessitie enforce a worke of this nature to be commenced in an unseasonable and contrarie disposition of the weather, then the contrary qualities of the aire are (as much as may be) to be corrected, and amended.

In Winter therefore and in Autumne, let the sick man be placed in a warme Chamber, and let the forenamed emollient Baggs, and the Bath, be somewhat longer used before the Operation. In Summer (as I my selfe have often done in this and the like difficult Operations, which could not be deferred) let the sick mans Chamber be towards the West, often sprinkled and strewed with cooling waters, and leafes, as of Sallow, Oake, Plantaine, Roses and the like.

The age also of the sick man is to be regarded;

ded; & thence the sagest ancients forbade those sorts of Operations to be appointed for Infants and decrepid old men; for Infants by reason of their weaknesse, and because without danger of death they cannot indure the extreme paine and fluxe of blood which doth commonly attend this dangerous Incision; and in old men this cutting is extremely perilous, not onely because all men in their declining time grow weake and feeble, but also because their native heat, and radicall moysture is wanting in them, and thence their bodyes doe so wither and drie up, that their skin, Muscles, Veines and Nerves cannot sufficiently be stretched and dilated for putting in the Instruments, and bringing out the stone; yea in the Incision of elder people, it often happeneth that the Veines, Muscles, and Nerves are torne in peeces, because their bowels are dried up. Besides, the Physitian ought to consider, that as the radicall humour and naturall heat is wanting in old men, so also the cold preternaturall, excrementitious and phlegmatick humours transcend the bounds of Nature, whence nothing can be expected but ill aboading symptomes of all sorts.

To conclude, the Chyrurgian ought to be furnished plentifully with all sorts of Instruments made of the best iron; for it hath often happened that in the Operation some of them hath been broken, and the splinters thereof been left in the bladder of the Patient; as once

The Chyrurgian must have store of Instruments.

I knew a Chyrurgian, who being to cut off a mans thigh, his Sawe (being of too hard a temper) broke in peeces to his disgrace and shame, and great damage of the Patient.

*Vide librum  
Auctoris  
de Gangrana &  
Sphacelo.*

Instruments of divers kinds (as I have said) are required, as Catheters, Probes, the I-nnerarium, Conducter, the Specula, Pincers, Smal-hooks, and the like, which the Chyrurgian ought to have of all sizes, great, little, and of a middle sort, that according to the greatnesse and smalnesse of the stone and the constitution of the Patient, they may be used severally. Let not him thinke to stop two gappes with one bush; nor that he can have time to get Instruments when he is employed upon the Operation. The Reader may find this multitude and variety of Instruments, in the Works of the most learned and experienced men, *Marianus Sanctus Barolitanus, Ambrosius Parvus, Petrus Francus, & Ioh. Andreas della Croce.*

I have devised and invented a peculiar instrument for this use, which he that liketh it, may have made for him, set downe in the 18 Chapter. It hath a double use; for it serves not only to open the bladder, and be as a prospective for discovery, but it also takes hold of the Stone and supplies the place of the Pincers.

The Chyrurgian ought always to be furnished with some approved medicine to stay the blood. This that followeth may be usefull for him, in this and the like dangerous works; which

which I have transferred hither for his use out of my *Traēctate de Gangrenâ & Sphacelo.*

*Rx. Farin. Volatilis ℥vj.*

*Sanguinis Dracon.*

*Boli armeni,*

*Terra sigillat. an. ℥℞.*

*Gypsi, ℥℞.*

*Ranarum Aquatil, præp. ℥ij.*

*Musci Cranii humani ℥j.*

*Pilorum leporis minutissimè incis. ℥ij.*

*Pulv. Albuminis ovorum sole Canicular. exsiccant. ℥j.*

*Spuma maris,*

*Spongia nova torrefact. an. ℥℞.*

*Misce. f. Pulvis tenuissimus, qui servetur ad usum.*

A Powder to stop the flux of blood.

Besides the powder to stop blood, the Chyrurgian ought also to be furnished with rollers of all sorts, sponges, Cordiall waters, and the like, of which more shall be spoken in the following Chapter.

When therefore the body of the sick person hath been prepared by diet, purging and bleeding, and all things else required for Lithotomie be in readinesse, he is not to be cut immediately or the day following his purging or bleeding, but to stay a day or two, that so his strength which hath been somewhat abated by purging and bleeding, may be restored and repaired, and himselfe in the meane time is to be refreshed with meates of good juyce; nature by all meanes is to be strengthened, and the

When the Patient is to be cut of the Stone.



the application and use of those emollient Baggs (of which we have spoken Chapter 9.) is to be continued.

Lastly, when the time for Incision is come, and the Patient hath had a Stoole that morning, either naturally, or by the help of some gentle Clyster, hath made water, supped off some warme broth, a reare egge, or the like, and drunke a small draught after it, the help and assistance of Almighty God, is first to be seriously, and devoutly implored, by a lawfull Minister (if any be present,) or in his absence by some of the by-standers, who, if he please, may use one of the prayers prefixed before my *Treatise de Gangrana & Sphacelo*. The sick man then after halfe an houres stay in the Bath, to loosen his belly, is to be taken out, dried with warme cloathes, and bound to the table or forme, yet with this order, that he shall walke a turne or two, and (if he be able) make a jump; or if it be an Infant, let some of the kindred hold it under the Arme-pits and shake it; that the Stone may fall down towards to the neck of the bladder.

Then after prayer to God, let the worke be commenced in the manner, which shall be afterwards declared. But the Patient is to bee bound with speciall Art and dexterity, as it appeareth in the next Chapter.

CHAP.

## C H A P. X I.

*How the sick man is to be layed, and Bound.*

**T**Hat the stone may be cut out, and the worke done without paine and danger to the Patient, his posture and binding are of no small consequence. Let him be then so placed, that the light and Sun-shine may help thee, and direct thy hands. Then, let him be carefully bound, that his body may not be moved; for otherwise, he may easily be hurt, and offended with the Pincers, and Instruments sticking in his Bladder, and thy selfe be perplexed with trouble, labour, care, and anxiety.

To avoid this inconvenience, and that the Patient may not move or wagge under the Chirurgians hand, he is to be layed and bound upon a firme and fast Table.

Some would (and I my selfe have done it) have the Patient sit upright, that the stone might with more facilitie fall into the Neck of the Bladder: But this posture may usher in many dangers, as shall be shewed afterwards in the X X Chapter.

Let him therefore be so layed and bound, that the lower part of his Belly, and Loins, may hang and decline somewhat downwards, that the Stone may more easily slip to the neck

of the bladder ; but let the Abdomen , Thorax , & Head lie upward , and bind not the Thorax , but let it lie at libertie . Let so many strong men be imployed in attendance as may be able to hold the Patient quiet in case of necessitie , especially about the Armes , Arme-holes and thighes , but let not the Thorax , or Breast be touched , or pressed , lest the spirits and breath be thereby stopped .

Let a Linnen cloth or double sheet , be layed under his Buttocks , and a ful-stuffed and well crammed pillow , or two , be placed under his Loines and head , that he may rest upon them more stedfastly .

Some lay the Patient upon a great bagge stuffed with straw , or chaffe ; which course I dislike not , because the sick man doth settle thereupon more firmly than on a pillow .

These things thus done , let the Chirurgian bend his Patients thighs as much as may be towards his belly and buttocks : then let him have in readinesse , a long , strong , linnen rowler , foure thumbs breadth rowled in at both ends ( such as are used in the Fractures of the scull ) yet so as both the ends may jumpe meet in the middle . Thus then shalt thou order the Ligature . Cause an attendant to hold one end of the Rowler fast , in the hinder part of the Patients neck , and then goe thy selfe with the other end , over the Patients left Arme-hole , and under the left Arme , towards the right Hippe , and over the fore-part of the thigh ,

Of the li-  
gature, or  
binding  
the Pati-  
ent,

whence

whence thou shalt carry it below the knee, and thence bring it againe towards the external part of the thigh, and there cast it twice about the thigh, and thence bring it under the soale of the foot, and thence againe above the thigh, and thence under the knee, and thence againe upwards towards the Loins. Then goe up with it towards the left Arme-hole, that so thou mayst bring it from under the left Arme, to the Neck; where thou shalt deliver that end of the rowler, with which thou hast bound the right thigh, to be held by the attendant, and taking the end which he held hitherto, thou shalt bring it over the right arme-pit, first forward, and then backward under the Armes towards the left thigh, that both ends of the rowler may meet crosse-ways upon the back, whence thou shalt carry it above the hip and thigh downwards to the knee, and above the shinnes, thigh, and under the soale of the foot, and thence againe to the Hippe, and over the Loins to the right Arme-hole, after the forme used on the left side, that both the ends of the rowler may be knit together upon the neck, where thou shalt fasten them with a knot. And thus the Patient will be straightly and surely bound. Neverthelesse, that he may not move in the time of Operation, you may set two stout and strong men on each side of him; two whereof may hold him by the knees, and feet, and two by the Arme-holes, and hands; but the Thorax, as I have often said, is not to

be straitned. The hands are sometimes also tyed to the knees, with a particular rowler, or the knees by themselves, by the help of a pulley fastned into the Table, as it appeareth by the adjoynd figure, which for the young practitioners sake, and such as have not been much versed in Lithotomie, I have set downe in the end of this Chapter, as I borrowed it, from the experienced and famous man, *Ambrosius Pareus*.

The Operation being finished, and the sick mans hands loosed, the knot on the neck is to be untyed also, but the rowler it selfe to be cut asunder with scissars, that it may be presently undone, and taken away without trouble.

Women may be laid, and bound also after the same manner; yet I have met with some, which in this and the like painfull Operations, have refused the Ligature. Amongst the rest, Anno 1598. June the eighth, at *Viviacum* upon the *Genever* sea, I tooke a great Stone from a Noble Matron, by name *Urbana Pronx*, Widow to the honorable Lord, *Daniel Hugonius* of blessed memory; But when I was about to bind her, she demanded what I thought of her, and whether I imagined that she was afraid: alledging that she had brought forth many children, and endured greater torments by the stone it selfe than the Operation could produce: yet never needed the Ligature. I placed her therefore in a Midwives hollow stoole, and because the stone it selfe did shew

the

the place for incision to be in the neck of the Matrix: sitting upon a low seat at her feet, I made the Incision, and did all the worke under her cloathes, and brought out the Stone, to the admiration of the by-standers; for though there were many both men, and women present, yet neither any of them, nor I my selfe could perceive her naked body.

This woman during the whole time of Operation, was so undaunted, that she neither waggd nor cryed out, and in a short time, by Gods speciall assistance, recovered her former health, which continued from the yeare 1598 till 1611. There is mention of this Woman also. *Cent. 1. Obs. 68. & cap. 22.* of this book. Besides, there is surviving to this yeare 1627. an Honourable, Pious, and vertuous Lady, *Iaquilina Mestral, Du. à Vandans, &c.* who can witnesse this memorable Operation.

Anno 1625 May 12. here at *Berne*, I happily cut off a great Steatoma with the membrane from the joynt of the right Arme-hole, of the well known Matron the Lady *Maria Spierer*, wife to the valiant Lord *Ludovicus of Diesbach*. This woman deserveth to be enrowled in the list of brave spirits; for she would neither be bound, nor held: And though the Incision was painefull, by reason the Wenne was so neere the joynt, and grown to the sensible membrane; yet she neither squeaked, nor much moved her body, but endured the torment constantly, with great patience, and in

a short space, by the blessing of God, was happily recovered. Yet I hence conclude not, that the Chirurgian herein should follow my way, and not bind his Patients, in these painfull Operations; for the issue in many doth not answer their desire: nevertheless if he can perfect the worke without the Ligature, (as I have done many, the Patient not being bound) it will be done more advisedly; for many are so affrighted with the Ligature, that they fall into most dangerous symptomes, before the Businesse.

Examples  
of the ef-  
fects of  
feare.

I doubt not, but that fearefull Lipothymia which hapned, when that Noble Gentleman *Balthasar a Diesbach* (who is remembred againe in the twentyeth Chapter) had his Arme cut off, proceeded most from feare, caused by the Ligature; because when the Cure was done, I could understand some such thing from him.

In the yeare 1608, when in the Royall Castle of Bourg in Bresse, a Garrison-souldier being taken a sleep the second time upon his watch, and as to be shot to death, was bound, and hoodwinked, the Sonne of the Noble Lord *Peter de Boisse*, Baron of Bardalian, &c. Constable, and Keeper of the Castle for the Christian King *Henry the Great*, came, and upon his knees humbly begged his life, because he dearely loved him: The Governor thereupon commanded to have him unbound, and certified, that the Governor induced by the mediation of his little Sonne had granted his life; But when they

manner of Stones cannot be broken without great violence and extreme torment of the Patient: there is danger also, lest the bladder, at least the Muscle and Neck thereof be torne and exulcerated by the sharp angles of the stone. For though some be found which are rough, sharp and uneven; yet they cannot doe so much hurt, as the points of these extreme hard stones, which are sometimes as sharp as the edge of a knife or razor. The Lithotomists doe sometimes meet with stones, which have burst asunder like Pumicks, and could not be taken out whole; and in this case the breaking of the stone is dangerlesse; yet the Bladder is to be carefully cleansed with a spoone, the remainder of the sand and fragments to be taken away, and the wound to be the longer kept open with Tents, as shall afterwards be shewed at large.

But if the stone, because of its bignesse, cannot be brought out whole, then (necessitie having no law) all manner of Instruments are to be provided (which neverthelesse are to be used with judgement) and the paine, as much as can be, to be mitigated; for often by a great and unapprehensible torment (the unseparable companion of this Operation) the Patient dyeth by fainting; and sometimes, the stone being very great, the veines are broken asunder, and thence the diseased man is taken with such a flux of blood, that he fainteth under the Physicians hands, or dyeth presently after the Operation.

There



There are not wanting some rash Operators, ignorant of Anatomy, who think it fabulous that such veines should be inserted into the Perineum, that by the breach of them, so large and dangerous an Hæmorrhagia should be caused; but let them weigh these following examples.

At *Friburg* in *Swaben* 1623, at a merry meeting, when the youths and men of the towne had warmed their bloods with dancing, one of them attempting to leape over an high stoole, fell short, and the corner thereof so hurt his Perineum, that within few days he bled some pounds of blood by the yard (for the skin was not broken) which was in part so coagulated and congealed, that it may be admired how it could issue that way; and therefore when my selfe, and the learned and experienced *Franciscus Prosper Gottrow*, the Professor of *Friburg*, were called unto him, we had much adoe to recover him, his strength was so decayed by the vehement Hæmorrhagic.

The like happened about the same time here at *Berne*, to a Noble Infant of foure yeares old; for it falling from a Forme upon a cudgell, was wounded about the extremity of the Hon-teuse toward the Anus, and such a violent flux of blood followed, that it is almost incredible that so much blood should be in a child.

These examples I have here inserted, that they may be a lesion to all Chyrurgians, and those

those especially which goe to worke with small preparation. Therefore, when the stone because of its greatnesse, cannot be taken away without danger of death, I doe perswade againe and againe, that the Operation be not appointed; for this is better and more commendable, in a faithfull and diligent Chyrurgian, than (as some usually doe) to draw the languishing Patients as it were to the shambles.

Sixthly. Nor is it to be omitted that as there are diverse symptomes attending this disease, so the Physitian ought to be furnished with many servants and attendants, that all things may be done orderly, and nothing wanting in time of necessitie.

First therefore, though the sick be sufficiently bound, yet some hearty men which can hold him, are to be employed, that he may not wagge in the Operation, and impeach the Physitian in his worke.

It so befell me once at *Paterniacum*, when I was about to cut off the thigh of a man of forty yeares of age, and ready to use the saw, and Cauteries. For the sick man no sooner began to roare out, but all ranne away, except only my eldest Sonne, who was then but little, and to whom I had committed the holding of his thigh, for forme only; and but that my wife then great with child, came running out of the next chamber, and clapt hold of the Patients Thorax, both he and my selfe had been in extreme danger.

Let

Let another servant stand at his right hand, with a large dish wherein all the Instruments are placed orderly, lest he should rise from his seat, during the worke, and this or that toole be to be fetched, and brought. In the same platter amongst other things, let there be placed some oyle of sweet Almonds in a sawcer, that he may annoint his Instruments and fingers therewith, as oft as occasion shall require: and because cold is banefull to the bladder, and the Instruments must therefore be warme, and coales cannot minister such an heate as is here required, therefore the Chyrurgian shall have set to his hand a bason full of water tempered to his purpose, and therein as need is, warme his Instruments, and afterwards annoint them with oyle of sweet Almonds.

Another dish is also to be delivered to the same Attendant, wherein all things to be used after the Operation, are to be layed orderly; that when the stone is taken away, all necessaries to stanch the blood, and for other uses, may be in a readinesse.

And because through the extremitie of paine, and the losse of blood, great weaknesse and faintings often ensue, therefore some one of his friends assistant, is oft to minister unto him one spoonfull of this Cordiall water, to refresh him.

*Rx. Aq.*

Rx Aq. summitat. & flor. Borrag.  
Bugloss. Rosar. Odorif. an. ℥ij.  
Cinamom. distill. sine vino.

A Cordial  
water.

Syr. de succo Citr.

Papaver. errat. an. ℥j. ℞.

Specier. de gemmis,

Latificant. Galen. an. ℥ij.

Confect. Alkerm. ℥j.

Misce. f. Potio.

This Cordiall water strengthneth, and re-  
fresheth the vitall spirits, and aswageth paine.

This following Epithema is also not to be  
omitted.

An Epi-  
thema.

Rx. Aq. Meliss.

Bugloss.

Rosar. an. ℥j. ℞.

Cinamom. sine Vino destill.

Acet. rosac. an. ℥j.

Specier. Diamargarit. frig.

Diamb. an. ℥ij.

Camphor. ℥j.

Croci, ℞. Misce. f. Epithema.

In this Epithema, or Cordiall medicine, not  
only before the Incision, some thick linnen  
clouts are to be dipped, and applyed to the  
pulse of both hands; but also a peece of scarlet  
as bigge as the palme of the hand, is to be wet-  
ted therein, and applyed warme to the region  
of the heart.

But in the time of the Incision, let some of  
the Attendants, or by-standers wash the sick  
mans Nostrills and Temples with the same  
medicine,

medicine, and wet the clothes applyed to his hands.

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### C H A P. XIII.

*Of sundry sorts of Operations, and severall methods in cutting out the Stone; and first of that Incision which is done with little preparation.*

**H**AVING shewed in the former Chapters how the Chyrurgian should behave himselfe both before, and during the time of the Incision: I should now proceed further, and declare what he should principally provide for, after the Stone is drawne out. But because there are severall manners of Operation used both by the Antients, and Neotericks in their practise of Lithotomie; for the Learners, and young Chyrurgians sake, I have been willing to insert some of them in this place, that every man may thence make choyce of that method which he shall thinke to be safest and most convenient.

The first, and most usuall Operation, or way of drawing out the Stone, practised by the Lithotomists at this day, is thus: The Patient being bound (as is fitting) the Chirurgical putteth the first, or middle-finger of his left hand, into his fundament, and with his right hand thrusteth downe the lower belly towards the  
Bladder;

Bladder; or some attendant, appointed to that office, may thrust it downe, but not with his bare hand, but lined with some fine doubled soft linnen or tow: because the belly being compressed by the bare hand, it often happeneth, that the Muscles are hurt, and bruised, whence paine, tumours, inflammations, and other dangerous symptoms doe ensue, to the great annoyance of the Patient. The Chirurgian having found the Stone by his finger in the fundament, thrusts it downe to the very neck of the bladder, and there first maketh Incision upon the stone, and then with his fingers thrust into the fundament, laboureth to drive it out: and this doth speed well in some people, where the stone is but small: but if it happen otherwise, they finish the work with those little Hooks, delineated in the end of the Book; and this course they call *Apparatus minor*; or the operation with little preparation.

But how dangerous a course this is, every wise man may easily judge, when he shall consider, that the Chirurgian may by an easie mistake, dissect the parts adjoyning to the neck of the Bladder, or the neck it selfe, and sometimes too the very muscle of the Bladder; Whence first, because of the multitude of veines meeting in that place (as hath been shewed in the former Chapter) a great and dangerous Fluxe of blood is to bee expected; and secondly it may bee feared, that the sick man will not afterwards be able to hold his

G

water,

water, or a Fistula may reside in the part affected.

Pierre  
Franc. l.  
des Her-  
nies. c. 32.

Besides, it hath also been observed, that in this kind of Operation, the Bladder it selfe, because it being emptied falleth together, and the straight gut have been so cut, and mangled, that as *Peter Franke* witnesseth, the Chirurgian hath hurt his owne finger with the knife, and then the urine hath passed through the straight gut, and the ordure through the wound: and what inconvenience this might bring upon the Patient, and disgrace upon the Lithotomist, each man may conjecture.

It is also notably observable in this way of Operation, that if it happen that the Chirurgian should by chance pierce the parts in the Incision, and hurt his finger in the Fundament, how should hee then performe the worke? Must not he needs in regard of his owne paine, cease from his labour, and leave the worke unfinished? Though therefore, this kind of Operation and manner of taking out the stone hath been used by some of the ancients, as appeareth by their books; yet I would advise every good Chirurgian to consider of this course more seriously, and not to follow them herein. The ancients indeed first brake the ice and prepared the way of arts for posterity, and in that did them good service: but because *Hippocrates* concludes *lib. I. Aphorif. I.* The art is long, and the life of man short,

short, they could not polish many things, and are therefore not to be discommended, but honored as the Instruments of the great Physician. But they who at this day know better, and surer wayes of operation, and yet nevertheless refuse to practise them, these sure are but giddy-headed and such conditioned men which wanting conscience have no respect to their Patients.

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CHAP. XIV.

*Wherein another manner of Operation is described, to wit by the Itinerarium.*

**T**HERE is another operation or way of cutting out the Stone, upon an Instrument called the Itinerarium. The instrument is properly so called, because it sheweth the Chirurgicalian the way to find the exact place of the Incision. But let it be made of a thin silver plate or latten. See its forme at the end of the book.

The Patient being well bound, and all things fitly disposed, put in the Itinerarium through the Yard into the Bladder; then make the Incision with the knife, whose point must be sharp on both sides a fingers breadth from the seame that goeth from the Scrotum unto the fundament toward the thigh unto the very Itinerarium; then thrust in the Conductor or Semispeculum, upon the Itinerarium



unto the very stone ; afterwards take out the Itinerarium , that the Yard may againe bee free.

The foresaid Conductor , is an hollow instrument , and open on one side , as shall appear at the end of the Book: it is bigge in the end, and therefore must be thrust deeply in , that it may open the wound and the neck of the bladder : this done , the Hamulus , an instrument knowne and used by Lithotomists , is to be thrust in by the open side of the Conductor , and the Conductor it selfe to be drawne out , and then the stone to be brought downe by two of the fingers of the left hand , to wit, the first and middle finger being put into the fundament, to be caught by the Hamulus, and so drawn out.

Besides , let one of the Attendants crush down the belly with his hand toward the upper part of the *Os pubis* , that the stone may the better fall downe upon the neck of the Bladder ; yet let him not doe it with his bare hand , lest hee bruise the muscles of the Abdomen , whence inflammations , and other symptomes may arise; but let his hand be lined with a double cloth, or fine tow.

Some Lithotomists refuse the foresaid Conductor or Semispeculum , as superfluous , and only by the help of the Itinerarium carry the Hamulus to the Stone. I will not gainsay them ; yet the Conductor hath this use, that it so dilateth the orifice and neck of the bladder, that

that so the Hamulus may bee put in more easily.

To the same purpose some thrust in an Instrument called *Speculum Vesicæ*; and then the stone is brought by the fingers in the fundament, unto the orifice, and thence caught by the Hamuli: which course of practise not despicable, I my selfe have used happily; but then the Incision must be of a middle size; for if it be small, the instruments will not easily enter, and if you make it great, then perhaps you may hurt and cut many veines, yea the muscle or the very bladder it selfe.

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C H A P. XV.

*Of the third way of drawing out the stone.*

**B**Ut if the Stone bee so great, that it cannot bee drawn out with the Hamuli, and greater force bee required; then the businesse is to bee ordered in the manner following. Incision being made upon the *Itinerarium*, as is said, and the *Conductor* or *Semispeculum* being put in, and the orifice being enlarged in some sort by them, the Pincers are to be thrust in by the *Conductor* unto the stone; the *Conductor* being then drawne out, the stone is to be carefully found out, and to bee held fast by the Pincers; and when you have well and with a strong hand

brought the pincers together, and are sure that they have fast hold of the stone, then draw it out; Yet in the time of the extraction (which is to be done with both the hands) you must turne and winde the Pincers gently, this way and that way, that the orifice may be something enlarged, and the pincers come out with the stone the more easily; which if happily it cannot be done at the first time, and the stone (as it often happeneth) slip out of the pincers, then you must with another paire somewhat broader and stronger, take hold of the stone; their capacity being such that they may compasse it out round. But when you put in the pincers, let some attendant presse downe the belly strongly with his hand, as is above said. To enter the pincers, the orifice must be somewhat enlarged, which is done by the Speculum Vesicæ. If the Stone cannot bee brought out whole, but must needs bee broken, then the Physitian must have a special care to deale discreetly therein, as we have formerly declared.

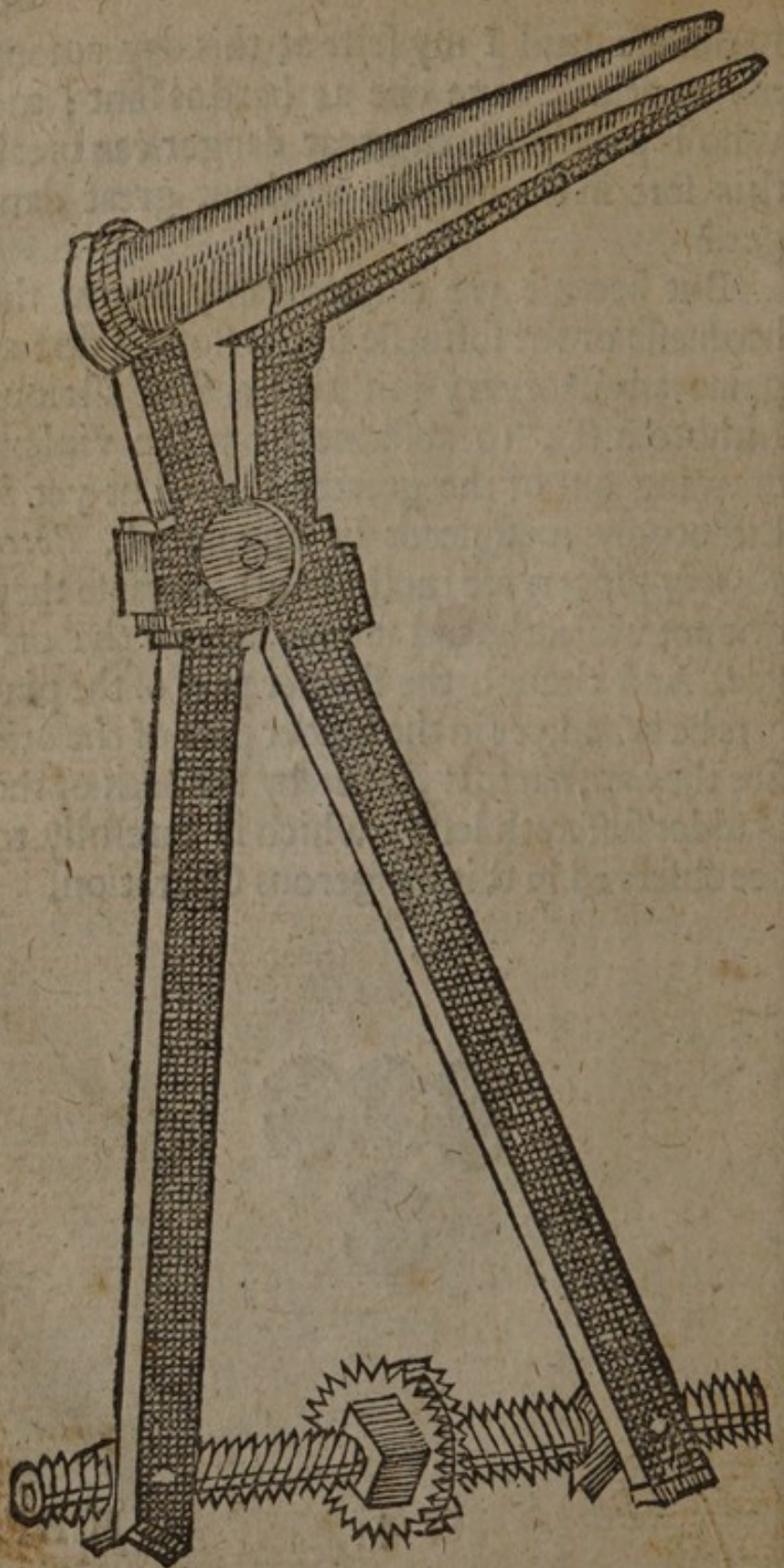
*Peter Frank* his pincers be of two kinds, the one somewhat broad and hollow in the former part, to catch and draw out the stone, the other somewhat sharp to break the stone.

Here againe I will advise the Chirurgian, that hee doe not rashly attempt to break the stone, because of the great danger that attends that kind of Operation; for there are often found in the bladder stones of an extreme hard-

hardnesse, and I my selfe at this day among my rarities, have one as hard as flint; and who I pray without great danger can break this sort in the bladder without great danger?

But because we cannot easily know the hardnesse or the softnesse of the stone, I doe againe advise every faithfull and industrious Lithotomist, to abstaine from the violent drawing out of the greater sort: but yet if Lithotomy must needs be appointed, *Peter Franks* pincers are most usefull, because they do not violently and at once extend the orifice. And though the former part of the pincers be broad, yet in the hinder part of the orifice they are narrow, whereby the neck of the bladder suffereth lesse, which is carefully to be observed in this dangerous Operation.





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## C H A P. XVI.

*Of the fourth manner of Operation used in cutting out the Stone, which may justly be called Lithotomia Franconiana.*

**B**Ecause I doe often in this Book mention that excellent and experienced man *Peter Frank*, I cannot omit to insert that manner of Operation first invented by him, which is thus set down in the XXXIII Chapter of his Book. The Body of the Patient (as hath been said) being prepared for the work, and Incision made upon the Itinerarium, he applieth a fit tent to the wound and attempteth no more at the present about extracting the Stone, unlesse perhaps it appeare of its owne accord, in the orifice; and then he draweth it out with the pincers fit for his purpose, or the Hamuli, which are most usefull in this case, especially if the Stone be smooth, and even: But if the stone fall not of it selfe unto the Orifice, or be of a larger size, then he binds up the wound after his usuall way, and letteth the Patient rest. Some few dayes after when the state of the Patient is somewhat amended, the wound suppurated, no feaver appearing, and the Stone sheweth it selfe in the Orifice (as it oft happeneth, and the said Author affirmeth he found by experience) then hee draweth

draweth it out in the manner aforesaid, But if the Stone fall not of it selfe to the Orifice, his advise is, that it should be forced downe by the fingers thrust into the fundament, and compressure of the Muscles in the Abdomen, as hath been shewed formerly; because the tumours are then abated, the Urine hath had a free passage, and there is no feare of Inflammation in the wound afterwards. The Stone being thus brought downe to the Orifice, hee draweth it out with his Pincers, or Hamuli, as hath been formerly declared. But if the Stone be so great, that it cannot bee drawne out through the neck of the Bladder, unlesse the Bladder it selfe bee dissected, (which is very dangerous, as soone after causing Inflammations, or other grievous Symptomes, yea death it selfe to ensue; besides that such wounds cannot be cicatrized) he adviseth that the bladder be not dissected without the neck, where the fat and muscles doe appeare; but rather that the Chirurgian should break it with the Pincers by him described, (which indeed are fit for that use if they bee sharpe and strong) yet not at once, but with reiterated courses, and especiall care being had of the Patient, one part of the Stone being broke to day, and the rest a day or two afterwards, and some Anodyna to suppress inflammationes applyed in the Interim: wherein it is diligently to be observed, that all things be applyed hot; And so it is better, saith he,

to

to pluck it out by peece-meales, than that the sick man should be oppressed with extremity of torment; the least of two evils being alwayes to be chosen.

I find no Author, saith *Frank* further, who hath used this way of Lithotomie, and it seemeth a wonder unto many, that after Incision is made, the sick man should not be touched for five or six dayes more, or lesse, and then the extraction of the stone should be attempted; yet many learned, and experienced men, having heard my reasons, and arguments, have subscribed to my opinion. And experience it selfe hath shewed mee, saith he, that the Patient after one stone hath been drawne out, hath been so weakned, that I durst then attempt no further, or seach whether there were any more, lest he should dye under my hands, or soone after.

After I had loosed him, while I stood by him till hee had recovered his strength, I oft observed that the Stone which remained in the bladder, fell out without any enforcing. And this doth chiefly happen, when the stone remaining is lesse than that which was drawn out.

Sometimes also the stone of it selfe, hath so fallen unto the Orifice, that it might easily be discerned: but because the Orifice was lesse in the Superficies, and outmost skinne, than within the Neck of the Bladder, as otherwise it ought to have been, therefore it stuck

so



so there, that part of it appeared without the Orifice, and part remained in the Neck of the Bladder. Besides, when the Stone which is behind in the Bladder, is bigger than that which was taken out, then the Stone remaining hath fallen to the neck of the bladder and the Orifice, and tormented the Patient as bad as the other which hath been taken out, that is, the sick Person hath been vexed with the like paines as formerly.

Such Stones as are smooth, commonly fall of themselves to the Neck of the Bladder, and to the Orifice; others not so easily, and sometimes not at all.

But if the Stone appeare not in the Neck of the Bladder and the Orifice, it may easily be forced downe by the Chyrurgian thrusting his fingers into the Fundament, and pressing the Muscles of the Abdomen, as hath been oft declared; All which presse is without danger.

I have oft bin perswaded that no stones have remained after the Operation; though within few dayes I have found the contrary, because the Patient hath felt his antient paines, and other signes of the maladie; which being discovered, for my credits sake I have been forced to draw out the remainders after the like manner.

But after that I had observed, and found by experience, that I might doe it this way, farre more easily, and with lesser paine, and danger

to

to the Patient, than at the first Incision; I was induced to use this way of Lithotomic, to wit, not to draw out the stone at once, unlesse it appeare of it selfe, but to suspend the operation, and dismiss the Patient for some few dayes, till he hath recovered strength. Thus farre *Peter Frank*, whereby it appeares that he was an honest and discreet Lithotomist.

The same testimony his familiars also, wherof some were surviving at *Lausanna Anno 1586* when I came thither, gave of him. It is to bee wished, that all Lithotomists and Rupture-Cutters would use this method; for I believe that many who by being Cut get their death, might thus escape it. For because the Lithotomist doth conclude either that the Patient shall be Cured, or dye at the first bout, it often happeneth, that at the first Incision, he either looſeth so much blood, or is so tormented, that through the unsufferable paine, Inflammation, or other dangerous Symptomes speedily ensueing, he either dyeth under the Operators hand, or soone after. All which might be prevented, if they would use this prescribed Course, as may appeare by this example.

Suppose one to be wounded by a Bow, or Gun-shot, and the Arrow or Bullet to stick fast in the wound; will not the Chyrurgian seeing an immense flux of blood, endeavour first to stop it, and some few dayes after, when the *Hæmorrhagia* is past danger, look after the  
Bullet,

Bullet, or Arrow? The same reason holds also in Lithotomie which is oft attended with such a losse of blood, that thereby the Patient is precipitated into extreme danger of death; and such sowings follow it, that unlesse the wound bee instantly bound up, and hee have rest given him, he may dye suddenly.

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C H A P. XVII.

*The fifth manner of Operation, which is ascribed to Peter Frank also.*

**T**He said *Peter Frank* in the XXXIII Chapter of his Book, reports and writes, that once there was brought unto him a child of two yeares age, which was troubled with a Stone in the Bladder about the bignesse of a Pullets egge. But when he had in vaine used all his industrie to thrust it downeward into the neck of the Bladder, and the child was so tormented with the Stone, that his parents rather desired to have him dead, than to live any longer in such misery; and himselfe thought it a shame, and construed it in the worst sense when it was told him that he could not bring away the Stone; in the end he resolved to dissect the Inguen about the upper part of the *Os pubis*, and there to finish the Operation. When therefore he knew that the Stone could not be forced down to the Neck of the Bladder,

der, with his fingers put into the Fundament he lifted it upward, whilst one of the attendants compressed the childs belly on the contrary side, and thrust the Stone to the place designed for dissection, & so the child though very weak, was recovered, and the wound healed.

From these words, a certaine famous and learned man would conclude, that the Stone is to be expected in that place, and that it may be done with lesser danger; and so hee styles this course with the title of *Lithotomia Franconiana*; though *Franck* did not prescribe it to be followed, but confesseth that hee dealt foolishly; and, not without good reason, adviseth that no man should imitate him therein: for though it appeare by experience, that the wounds of the Bladder are sometimes healed, as I could prove by many examples, having my selfe cured some; yet it is rare; and the Aphorisme given by *Hippoc. l. 6. Aph. 18.* is certaine, *The wounds of the bladder are mortall.*

As one swallow doth not make a summer, so it is in this case; though one wound be perhaps sometimes cured, yet on the contrary ten others, or more, are desperate; not only because the Flesh or Parenchyma of the Bladder doth not easily heale, but also because the bladder is of a Nervous matter, almost bloodlesse, and therefore the wounds thereof doe hardly and seldome cicatrize; especially by  
reason

reason of the grievous and dangerous Symptoms, such as are vehement paine, Heat and an Internall Inflammation, Tumors, the Crampe, and the like which attend them. It is also to be noted, that the Urine cannot always passe through the wound, but is collected in the lowest cavitic of the Belly, where it putrifieth, and so inflameth, and corrupteth the parts adjoyning.

Besides this, another and no despicable difficultie accreweth by this Incision: to wit that it cannot bee attempted but on infants, (and *Peter Frank* instanceth in one of two yeares old;) And if you demand the reason, why not upon such as be of ripe yeares? I answer, because the fingers are not long enough, to lift up the Stone so high as the Inguina. And this (good Reader) I could easily make appeare unto thee in my study where I have severall Sceleta of halfe, a whole yeare, and three and thirty yeares of age. And therefore with the forenamed *Frank* I would dissuade every honest and industrious Chyrurgian, from attempting this Operation.

CHAP.

## C H A P. XVIII.

*What the Lithotomist should doe after the extraction of the Stone, and before the binding up of the Wound.*

**H**itherto, it hath been shewed how the Lithotomist ought to behave himselfe; both before and in the Operation. But the Stone, by Gods assistance, being taken away, the Patient is not presently to be bound up, and layd in his bed; for it often happeneth, that two, or more stones, may be contained in the Bladder. I my selfe in the yeare 1610, having found two in a man of note in *Swaben*, foure in another at *Collen*, all of a good bignesse. *Kembertus Dodonaus*, Physitian to his Imperiall Majestie *Rodolph II*, mentioneth 12. and *Io. Schenkius Observ. lib. 3. cap. de calculo ves.* reporteth that 32 were found, inclosed in severall pannicles. If a man therefore, after the extraction of a single Stone, shall conclude all danger to be past, and yet another or more, or some fragments should remaine in the Bladder, then the Operation would be dangerous, painefull, vaine, and the last misery would prove worse than the first. The excellently learned *Paulus Lenaxus*, ordinary Physitian of this Republick, of happy memory, told me, that he was present when

an experienced Lithotomist drew a Stone from a child of fifteen yeares, Sonne to the Noble *Peter Chambrier* Vicar of both the Counties of Newstat, and Valenbourg, in whose bladder (as it was then said, and the event shewed) another stone remained, which by degrees so encreased, that it caused no small Symptomes, and so stopped the Neck of the Bladder, that the Urine could not be voyded, but by the help of an Instrument, and the Cannula. But after that he had passed some yeares in misery and torment, having in vaine taken many Medicines prescribed him by Physitians, Apothecaries and others in the end he dyed in his Fathers house, by the Lake of Newstat.

The famous *Iob. Iacob Kraffius*, ordinary Physitian to the City of Newstat, my wifes father, lately told me what was found in the corps after his decease, saying that he was desired by the father of the deceased, to dissect his body, to find out the cause of so great and long continuing paines and Symptomes, and that he found a great stone in the Bladder, and one of his Kidneyes rotten, and wasted.

*Novemb. 20. 1626.* The Noble Gentleman, *Franciscus Ludovicus* of *Erlach*, the younger Lord of *Spiez*, shewed me the least of those stones, which was almost round as a Bullet, ash-coloured, hard and smooth, weighing  $\text{ʒ} \text{ij}$ . which Stone hee had from the Noble Matron *Elizab. Chambriere*, sister to the deceased,

ceased, who also reported that her brother lived in great misery for some yeares after the Operation, and the Orifice never cicatrized.

To avoid this pernicious mischief, presently upon the extraction of the stone, diligent search ought againe to be made with the Probe, before described, to know whether there be any more Stones remaining, and if any be found there, the Physitian ought to be carefull that they may be taken out, one after another, and nothing remaine in the Bladder.

What is to be done after the extraction of the stone.

The bladder being cleared of the greater stones, one of the *Cochlearia* is to be thrust in, that if perhaps any gravell, sand, or coagulated blood remaine behind, if time, and occasion serve, it may be taken away: for if the Patient should loose much blood, or as it oft happeneth, be weak and fainting, then (though some Lithotomists make light of this case, and usually goe on boldly in their first intention) the Patient is to be delayd no longer, but presently to be conveyed into his bed, that they may prevent him from swooning, as shall be shewed in the next Chapter. For the greatest stones being taken away, it is not necessary in such danger, as attends a Lipothymia, to detain the Patient longer, because Nature, if the Orifice be kept open, will thereby drive all out, and cleanse the bladder. And though any great stones should remaine be-



hind yet Nature would so drive them to the Orifice, that they may more conveniently be drawne out by the Instruments and Pincers, as afterwards I shall shew (God willing) where I write of the Lithotomie of women.

For the Portraiture of the Cochlearia, see at the end of the book.

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C H A P. XIX.

*Of the Lipothymie, and how to help it.*

I should now of Course, proceed to the first binding up of the Orifice, and shew how it was to be rowled up, and the Patient layd in his bed. But because the *Animi deliquia* or Sownings are the most grievous, and dangerous Symptomes which follow this Operation: therefore before I goe further, I thought fit to. treat of them briefly, the Cure whereof I shall annexe hereunto.

The  
causes of  
sownings.

The Causes of this Symptome are many, but in this, and the like difficult Operations, it ariseth either from extreme paine, dissipating and consuming the strength and the vitall spirits, or the dissection, or breaking of the veines, whence an Hamorrhagia or flux of blood insueth. Sometimes also the Patient by excesse of meate, or drink before the Incision, falleth into a grievous Lipothymie,

as it happened at *Paderborne*, *May 31. 1609.*  
When I was to cut off a womans thigh, about  
40 yeares old, neere the knee, who though she  
was lusty & of strength, whilst I was stopping  
the flux of blood, & busie about disposing the  
maimed part, fell into such a Lipothymie,  
that every one thought her to bee dead; My  
wife who was present at the Operation,  
while I was binding up the trunk of her  
thigh, gave her one moytie of the following  
Cordiall Potion, and after layed her in  
her bed; but then she fell into such a vomit-  
ing, that she filled a whole Basen with raw  
and undigested meat: yet she recovered hap-  
pily, and survived many yeares; some dayes  
after the Operation, when I reproved her for  
gluttony, as a thing directly opposite to my  
intentions, she answered me, that she thought  
she was to bid all meates Adieu, and therefore  
at the last would glut herself therewith. The  
Cordiall drink was this.

*Rx. Confect. Alkerm. ℥ij.*

*Aq. Cinnamom. distill. sine Vino, ℥j.*

*Calendula,*

*Bugloss. an. ℥ss.*

*Misce.*

Hence it appeares, that such Lithotomists  
crosse the rules of Art, as suffer their Patients,  
either in the evening or morning before the  
Operation, to fill their paunches with wine;  
for hereby they fall into these grievous symp-  
tomes and infirmities. Doubtlesse, unlesse

this gluttonous woman had vomited, she had died with her full maw. For nature being weakened by the Operation, cannot digest and concoct that abundance of meates and drinks; and therefore internall Inflammations, Feavers, and other Symptomes must necessarily ensue.

It is enough therefore for the Patient, if before the Operation, whether it be Cutting for the Rupture, or the Stone, &c. he take a little broath, a reare egge, a small draught of wine, and nothing else be administred unto him before the Operation.

By this meanes, wee shall avoyd Lipothymies and other grievous symptomes arising from fulnesse of meate. Yet in the time of Operation, the Patients strength is to be repayed by broath, Cinnamon water, the forenamed Cordiall, and the like, which we have mentioned formerly; and his forehead, nostrills, and pulse to be plyed with the foreprescribed<sup>a</sup> Epitheme.

<sup>a</sup> See the  
end of  
the 12.  
Chapter.

And because most vehement paine, the unseparable Companion of Lithotomie, doth often cause Sownings, the Chyrurgian ought to prevent it, as much as hee can. Let him therefore endeavour to have a firme hand, and not shaking, that he may doe his worke expeditiously, though it be grievous & painfull. It is requisite also that hee be furnished with all manner of Instruments, and such as be not cumbrous, and unhandsome, but terse and  
made

made artificially, which are to be warmed in hot water, and annointed with oyle of sweet Almonds, as hath beene shewed formerly. Nor is it to bee passed over with silence, that the Patient, as many use, is not to be set in an upright posture, though it helpeth much to bring downe the Stone to the Neck of the Bladder; for this posture doth often cause him to faint; when lying upon his Back, the inward Bowells may better be reposed, the spirits passe more freely, and performe their office, than if he sat upright. Hence it comes to passe, that they who are Cut in their beds, doe not so frequently Lipothymize.

The Patient is not to be set upright.

Some yeares since, here at *Berne* I was to cut off the Arme of a Gentleman, which by reason of the unhappie issue which followed the opening of a veine, did Gangrenate. Having placed him in a chayre and bound him, that I might the better fit my selfe for the Operation, the Patient (being much weakned by his former disease) so sowned, that wee thought him even at deaths doore; but the rowlers and ligatures being immediatly cut asunder, & the Patient laid upon his back, he recovered. Yet because the Operation in respect of the Gangrene, could not be longer deferred without danger of death, the learned *Barthol. Durnus* (ordinary Physitian of this famous State, my Colleague and friend) and I, concluded to cut off his Arme the day following, where I so fitted his bed, that hee

might lie even with his whole body upon his back, and only his Arme being stretched out, was conveniently bound; and the Operation sped so happily that hee never sowned, and is living at this present yeare 1627. I cut the flesh to the bone, with a fire-hot knife; to prevent the flux of blood, and dissipation of the vitall spirits. Hereof the Reader may see more in my Book, *De Gangrena, & Sphaecelo.*

*Apparatu parvo.*

The flux of blood, is not the least Cause of Lipothymies, in this and the like dangerous Operations; which is to be prevented by the Chyrurgian, as much as may bee; nor is the Incision to be made a slightly, but upon the *Itinerarium*: For thereby, the veines, and muscles of the Bladder, and straight gut, are so compressed by the fingers of the Chyrurgian in the Fundament, that often the Hemorrhoidall veines must necessarily breake: which misfortune every operator ought to be carefull of, not only in the Incision, but also in the putting in of his Instruments, and drawing out the stone.

*Object.*

Here for a Corollary it may bee demanded, what the Chyrurgian should doe, if his Patient should Lipothymize, or any dangerous fluxe of Blood should ensue before hee hath taken out all the stones?

*Solut.*

It is answered, that the Patient is immediately to be reposed, & that he is to use all diligence for his refection, & stopping of that dangerous  
Hæmor-

Hæmorrhagia ; For it is farre better that the Operation be deferred till the next day , than that the Patient should dye under the Chyrurgians hand, or soone after, by an excessive losse of blood.

That this way and method of drawing out the Stone agreeth with Art , and hath beene practised by the most famous Chyrurgians , it appeares by *Peter Franck*, a good and Godly man , 70 yeares since the ordinary Lithotomist of this State of *Berne*, and the Cittie *Lassanna* , who not only prescribes that the Patient be put to rest in case of an ensuing fluxe of Blood , and Lipothymie thereupon accrewing , that the Patient be reposed , comforted , and the Symptomes taken away , and afterward the remaine of the Operation to be finished ; but requireth also that some dayes may bee appointed for the Operation , that the Incision being made the first day, the Patient may be layd in his bed , and the Stone drawne out some dayes after ; and all to this end , that his strength may be conserved , and the mortall Symptomes avoided. I would to God , that all Operators in these times were like mindfull and carefull.

## C H A P. X X.

*How the Patient, is to be bound up, the first  
and second time, and untill he be  
perfectly recovered.*

**A**S soone as the Stone and other incumbrances are taken out of the Bladder, the Patient must neither stay to be stitched up, or Bathed, but immediatly be layd in his bed, that so he may recover his strength, as shall be shewed more largely in Chap. 22. Let the Chyrurgian therefore have in readinesse a Tent dipt in the white of an egge, and the powder to stench blood, described Chap. 10. and put it into the Orifice to the very Bladder. Let him annoint his Belly from the Navill downewards, his Loins, Honteuise, and Hipps, with the following oyle a little warmed.

*Rx. Ol. Rosar.  
Viol. ana ꝑ i j.  
Amygd. dulc.  
Ovorum.  
Butyri recent. ana ꝑ j.  
Misce ad usum prædictum.*

This done, let him imbibe a Boulster of a convenient thickness, in the white of an egge, rose and plaintaine waters beaten together, lay it upon the Orifice, and observe  
all

all things carefully. If the Patient happen to Lipothymize, let him give him againe a spoonefull or two of the Cordiall water, renew the Epitheme, apply it to his pulses for halfe an houres space, and then lay him to his rest. After, let him administer unto him some broath, with a draught of the Emulsion of sweet Almonds; for wine in this and the like cases is not to bee used, neither within nor without the Body, unlesse extreme weaknesse and faintings force us thereunto. And let this suffice for the first binding up.

The second is to bee ordered thus: when Incision hath been made in the morning, and the Patient is not troubled with his urine; towards the evening, the wound is to bee opened againe, least some inconvenience or symptome should happen in the Bladder by suppression of the urine; for the urine cannot passe by the Tent, which was dipped in the white of an egge, and strewed over with the powder. The Artist then being to open the wound, is to be furnished with two sorts of Medicaments.

First, with a new Tent and Boulsters ordered as before, that if any new Hæmorrhagia should happen, he may have all things ready, and not bee accused of improvidence.

This order doe I observe in all my Operations the three or foure first dayes till I am sure that the Hæmorrhogia is stopped, and I  
always



alwayes remember what happened to a famous Operator, *Andreas Vitellius* by name, who having Cut a tumor in the thigh of a Count of *Waldeck*, Bishop of *Osnabrugge*, being unfurnished of Medicines to stench blood, and actuall Cauteries, ranne to the Kitchin to snatch up some hot Iron, but in the Interim the Patient dyed.

Besides this, the Artist ought to have another Medicine in readinesse, called a digestive, which when the Flux of Blood is stopped, must be applied for the mitigation of paine, and more speedy suppuration, and is to be made thus.

*A digestive.*

℞. *Cera nova* ʒjss.

*Gummi Elem. pinguis.*

*Terebinth. clara ana* ʒj.

*Colophon.* ʒi.

*Ol. Amygd. dulc.*

*De vitellis ovorum ana* ʒj.

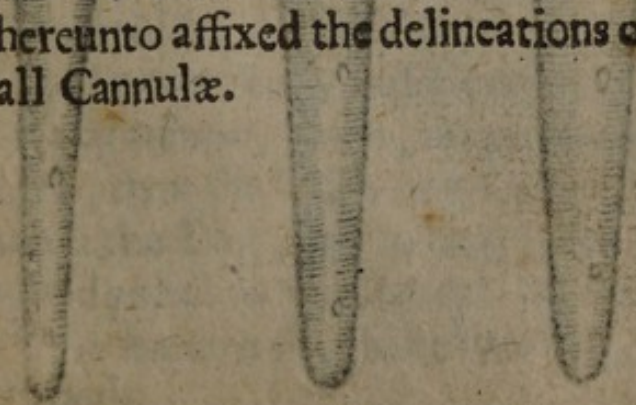
*Dissolvantur igne lentissimo & percolentur. Colatura admisce Croci subtilissimè pulverizati ʒij. Hujus unguenti accipe ʒj, cui admisce vitellum ovi unius, & Ol. rosar. q. s. ut formam acquirat liquidam.*

The Tent, and whatsoever else is to be put into the wound, is to be annointed with this unguent; and of the residue mingled with the yolke of an egge, an emplaster is to be made, and applied to the Orifice.

Afterward let the Belly, Loins, the privities, and Inguina be annointed with the fore-prescribed

prescribed oyles, and let a Boulster moystned in the white of an egge beaten in rose and plaintaine waters, and a little rose-vineger be applied to the part affected, so that they may all stick fast to the suffering place; And this is the proccess for the first, second, and third day, and longer if need require. The tents are to be thus applied, that as soone as may be, a silver Cannula open and boared before, (as is apparant by its following delineation) for the easie passage of the urine, may be thrust in.

But because this Cannula, by reason of its hardnesse, doth in a sort oppresse the wound, and put the Patient to paine; I therefore use to cover it with a soft cloth, which I annoint with the ointment before prescribed (without the yolke of an egge) in that part which should be fastned to the Cannula, that it may stick the better, and it being so wrapped, that the former boared part is still bare and open, I annoint it with the Digestive, the yolke of an egge, oyle of roses, and put it into the wound. To make the matter more cleare, I have hereunto affixed the delineations of some severall Cannulae.



*The*

The Canula.



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Some would have the Cannulæ made of thinne plates of lead beaten with the Hammer, which are more pleasing, because they may be bended in the wound, and better fit to the Patients posture.

Diverse of these Cannulæ covered with cloth to the holes (as hath been said) ought to bee at hand, some great, some small, and some of a midling proportion.

But if the Patient cannot endure the Cannulæ, because of paine, then a Tent made of fine Lint, wrapped in cloth, instead of them, is to be put into the wound. The wound is to be opened as oft as it oppresseth the Patient, yet so that if it be possible, it bee done but twice a day, viz. in the morning and evening: for when the wound is often opened, and the Medicines changed, neither of them can doe their work as they should.

These medicines, and wayes of opening the wound, are to be continued for some dayes, and speciall care to be taken for cleansing the Bladder in the meane time. To conclude the Urine, Pus, and the like are to bee received into a convenient vessell that they may not offend the Lower Belly and Coccyx.

But if any tumor, paine, or preternaturall heat arise, then the following Cataplasme is to be upon the Tent, and to be applied to the wound as hot as the Patient can suffer it, though the Inguina should be swollen, as oft it happeneth.

Rx.

℞. *Farin. Hordei.*

*Fabar. ana* ʒiʒ.

*Sem. Fanug. ʒij.*

*Cydon. ʒj.*

*Pul. ros. rub.*

*Chamomil.*

*Meliloti ana* ʒiʒ.

*Coquantur in lacte, addendo Butyri, & Ol. amygd. dulc. ana ʒj. Vitellos ovorum ij. Croci ʒj.*

*Misce. f. Cataplasma.*

And the unctions of the Belly, Loins, and the parts before rehearsed, are to bee continued.

The wound then being brought to good digestion, the bruised flesh well recovered, the congealed blood in the parts neere the wound dispersed, and nothing offensive longer remaining in the bladder, the Tents and Cannulae are no more to be used, but nature is to bee holpen for curing and healing the wound. The Chyrurgian may then if he please, apply the *Balsamum Toletanum*, or some other fit and approved one.

I have used the prescribed Unguent of *Elemi* in this and the like bruised wounds, to the last, and happily cured them; because it not onely affwageth the paine hindring the cure and producing many other symptomes, but also cleanseth and mundifieth the part affected.

But if urgent necessitie require a stronger  
Medicine

Medicine, as when the wound is very foule by reason of the contusion, or like to putrifie, then this Mundificative may be applied thereunto.

℞. Aloës Succocitr. ʒij.

Myrrh. ʒiʒ.

Rad. Gentian.

Angelic.

Aristol. rotund. ana ʒj.

Scordii ʒiiij.

M. f. omnium pulvis tenuissimus cui admisce

Terebinth. ʒij. Mellis rosac. q. s.

f. Unguentum.

But if, as it sometimes happeneth, there appeare a Gangrena or Sphacelus in the Scrotum, the reader may peruse my Book *de Gangrenâ & Sphacelo*.

If through the contusion, and congealed Blood any preternaturall heate doe arise, an injection is to be made with a syringe, to extinguish that heat, and to hinder the *Gangrene* & *Putredo*. for example.

℞. Rad. Aristol. rot.

Gentian. ana ʒij.

Fol. Plantag.

Rosar.

Scordij.

Ruta ana p. j.

Parietar. m. ʒ.

Coq. in Aq. ʒiiij. ad tertia partis consumptionem; In Col. ʒj. dissolve mellis rosar. ʒj.

All impediments which hinder the Cure being in fine taken away, let the thighes of the Patient bee bound above the knee with a Rowler, and be carefull that they lye not too low, when the wound is to be opened. This will serve for a future.

Some Chyrurgians, and Lithotomists doe here no lesse commend, the inward use of Traumaticke and vulnerary potions, than the outward, and account it for a great secret: but because that such as are troubled with the Stone, by reason of the continuance of the fore-going paine, watchings, and want of rest, are for the most part sickly, evilly disposed, and have their bowells obstructed and full of naughty slymie humors, and because experience doth testifie, that these vulnerary Potions are hurtfull in all obstructions of the inward Bowells, as shall be shewed in my *Tractate de Meliceria, & Ichore Celsi*, therefore we may refraine them; especially, being by Gods blessing abundantly supplied with many other excellent externall remedies, as Balmes, Unguents, Emplasters and the like. Instead hereof, it must be endeavoured by all meanes, both by meates and Medicines that all internall obstructions may bee opened, and Nature (which in all the Cures, both of inward and outward affections, doth minister the best and most sanative Balsame, and vulnerary Potion) bee strengthened. For Nature being weakened and cast downe, no certaine  
cure

cure can be expected. But how the Patient is to be dieted, and ordered, during the time of the cure, is shewed, Cap. 9. & 22.

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C H A P. XXI.

*How the Cutting of the Stone is to be ordered in Women.*

**T**Hough the Stone cannot easily be coagulated in the Bladder of a Woman, because in them the neck thereof is short, and so large that phlegme, sand, and whatsoever els may minister matter to the generation of the Stone; may with facilitie be carryed away by Urine; yet I have often seene Women in whom stones of bignesse have been found.

In *Viviacum*, a towne on the *Genever* Sea, Anno 1598. an Honorable and honest Matron was troubled with a Stone of this bignesse, (delineated in the next page) of which the Reader may see *Cent. 1. Observ. 68.*





*The Stone.*

Anno 1608. I was called to an honest Matron, at *Friburg in Swaben*, which after a painfull delivery of a dead Conception, felt an unsupportable paine in her Bladder, and the Neck of the wombe. I opened the neck of the Uterus with the Speculum for the Matrix, & found in the Bottome thereof a white Stone which I had fastned of with my Pincers; more followed it, resembling broken pumizes, which were fastened together, in a thick tenacious slyme; within few dayes an infinite number of stones were taken from her by the Neck of the Bladder, of which matter the Reader may peruse *Cent. 3. Obser. 69.*

Some yeares since when I was the Ordinary Physitian of *Paderborne*, a Gentle *Frow* came unto me, in whom there grew a Stone of this shape, and bignesse.

How



How I handled her, the Reader may see.  
*Cent. eadem. Obs. 68.*

In the yeare 1622. a Noble and Prime Lady here at *Berne*, being troubled with the Strangurie, retention of the urine, and much paine, sent for the Mid-wives, who imployed all their Care to deliver her of her burthen of child-breeding: my wife being also called, and applying of Medicines, inwardly and outwardly, a stone of a good bignesse fell out of her Bladder, and shee fell not into travaile till two moneths afterwards. Hence it appeares, how needfull it is that all Midwives, and such as be imployed about women with child, should be able to distinguish betwixt the strangurie and child-bearing.

An observation of the ignorance of Midwives.

Whatsoever therefore hath been spoken, and propounded about the preparation of sick men Chap. 11. ought to be understood also of women; and the Chyrurgian must observe the same directions, which are given for men, Chap. 12. in Women also: but principally

pally he must be sure to find out the stone both wayes, that is, by the Finger & the Instrument.

The finding out of the stone in Women is ordered thus: Let the Artift thrust in the Index of his right hand into the Neck of the Mother, by which being turned upwards toward the *Os pubis*, and the Belly pressed downe, by the left hand, he shall feele the hardnesse of the Stone: But in Girles, especially such as are young, this tryall by the Finger cannot be made by the Neck of the Bladder, but it is to be done by the Fundament, as in men. And yet this tryall is no demonstration; for in a womans bladder there are found hard Tumours which suppress the urine, and produce symptoms like those of the stone; and then the tryall is most safe and certaine by the Instrument, though the Finger may make some shew of the stone.

As concerning the work of Lithotomie, there is no small difference; for because the neck of the Bladder in Women is short, & large, Incision is to be seldome made, unles the stone be over-big; yet then necessitie hath no law, as shall be shewed hereafter: otherwise, the neck of the bladder being sometimes so enlarged in men, that stones of great bignes may be drawn from thence, why may not the same be done in women? because the neck of the womans bladder is short, straight, and more large than that of men. And besides, it is alio to be observed in the Cutting of women, that it can  
scarfe

scarfe be done without damage to the Sphincter, or Bladder it selfe, and therefore this last remedie is not to be attempted.

The drawing out of the stone from women, is thus to be ordered by the Chyrurgian. Hee shall prepare, and purge the Body fittingly, by diet, and open a veyne; and then *preparatis preparandis*, emollient Bathes, Bagges, and oyles (some dayes before, and the morning preceding the Incision) being applyed unto her, shee is to be layd upon a Forme or Table, and to be bound, *as the occasion requireth*.

And here againe, and againe, I advise the Chyrurgian, that he bind not the Thorax, neither in men nor women, but leave it free, least he thereby hinder their breathing.

The Thorax must not bee bound.

It is not without cause, that I adde these words (*as occasion requireth*) because I have met with some women so hearty, and courageous, that they would not admit of any ligature; amongst whom was that Noble and Vertuous Matrone of *Viviacum*, which would neither suffer herselfe to be bound nor held, yet during the Operation, neither changed her countenance, nor moved her body.

Anno 1618. I cut off the breast of a good woman, as I did the thigh of another, some yeares before at *Gravan* upon the *Genever* sea, of whom I may say the same, and by whose examples I may truly testifie, that God Almighty hath shewed a transcendent power in their weaknesse, having so enabled them, that

they have undergone these hazards more confidently than men, and lesse feared them.

The woman being sited for Incision and bound, let the Chyrurgian thrust in his Probe, or Catheter to the Stone in the Bladder: but this Catheter needs not to be so crooked, or long as for men, but shorter by halfe, and a little thicker, with respect to the Patient.

Upon this Catheter the Conductor or Semispeculum the Chyrurgian may put in to the very Stone; and this done, thrust in the Pincers, which are not to be round before, but a little acuminated, by the hollownesse of the Semi-speculum, and then draw out the Semi-speculum, that both hands may be free: afterwards let him put in the Index and middle Finger of his left hand, into the Neck of the Matrix, and bring the Stone to the Pincers, using all diligence to catch it and bring it out. If the designe speed not the first or second time, and the Stone slip out of the Pincers, he must not give it off more in women than men, but plye the Pincers, till hee have fastned upon the Stone and brought it out.

In this case my Instrument called Speculo-Forceps is very usefull for many reasons; for gently by degrees & with lesse paine, it openeth the Neck of the Bladder, and takes hold of the Stone, not in two, but foure severall places, so that it can swarve no way, and the Artist may prevent the slipping of it out of the former part of the Instrument by his fingers.

When

When the Attendant then who is to wind up and guide the screw of the Instrument, doth well perceive that it is fastened upon the stone, then the Lithotomist may draw it out gently together with the stone, with his right hand, and both the fingers of his left hand being put into the Neck of the Bladder, or Fundament, may follow the Stone, and so hold it to the Instrument.

The Stone being taken away, as well from women as men, let the Artist search the Bladder, and try whether any faeces be remayning, as wee have directed Chap. 18. and need not here repeate.

The woman is next to be carryed to bed, and her Belly and Loins to be annointed with oyle of Roses, violets, sweet Almonds, and the like before prescribed Medicines. Afterwards, all feare of an Hæmorrhagia being past, it will be convenient to put a long Tent, annointed with the Digestive, into the neck of the Bladder; and sometimes to apply a Pessary made of fine wooll or cotton, dipped in the following water.

Rx. *Aq. plantag.*

*Rosar. ana ℥iij.*

*Melisse.*

*Artemis. ana ℥j.*

*Sem. Cydon. ℥j.*

*Ovum cum Album. & vitello. n. j.*

*Conquassentur ac misceantur. dein etiam pessario, sicut etiam pulvillo, Aq. illâ madefactis, prudenda*

*puddenda tota obducantur; reliqua verò ut in vivis peragantur.*

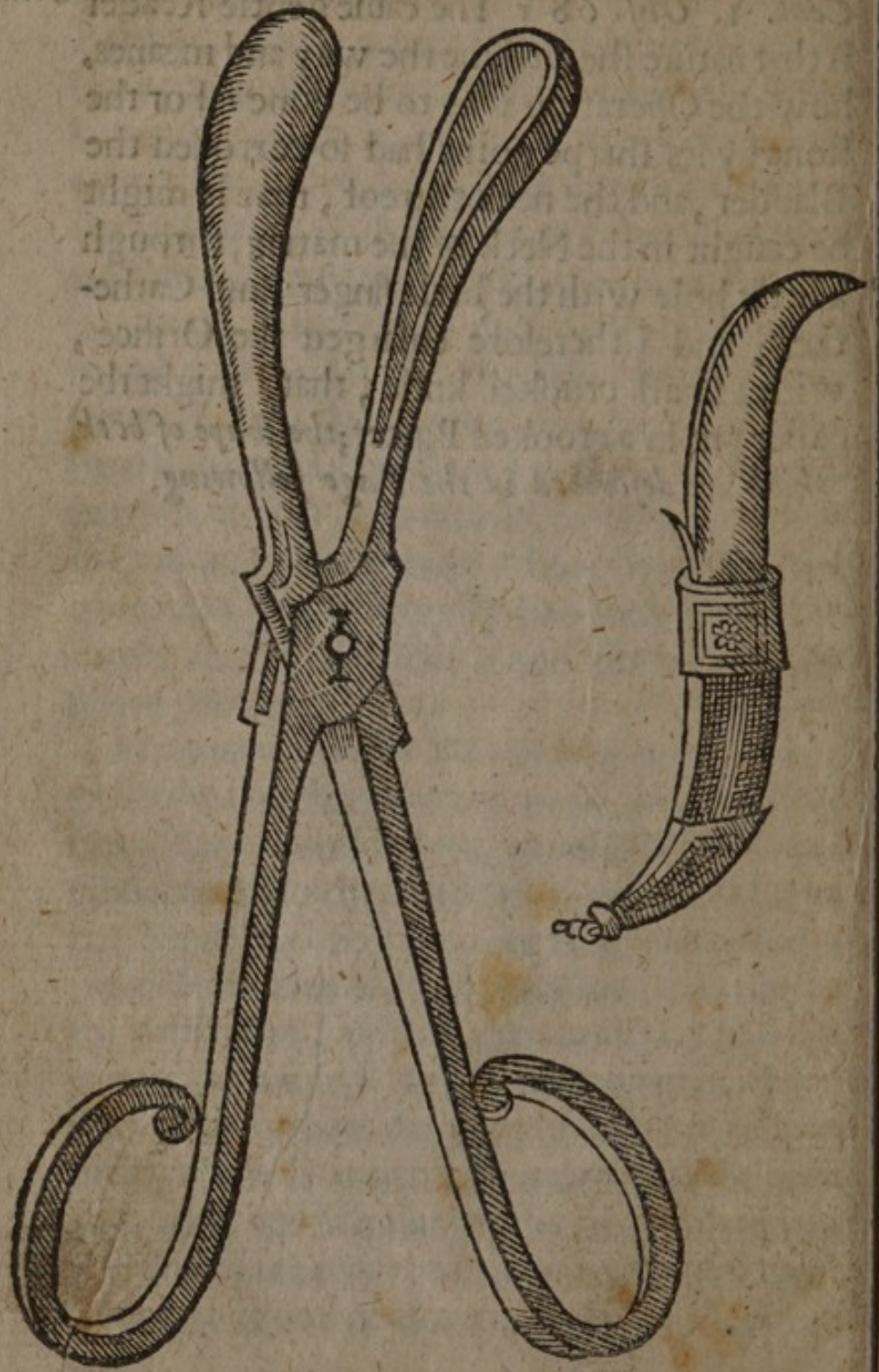
Let this suffice briefly for those stones, which may be taken out through the neck of the Bladder. How others, like that described in the beginning of this Chapter, which for their vastnesse cannot be brought out that way, are to be handled, I am not a little doubtfull: yet in this case I think that it is good discretion for the Artist to deale with women, as we have directed for men, that is, to commend them to learned Divines, that by their grave and godly exhortations, they may persuade them to a constant patience; and to expert Physitians, that as much as may be, they may asswage their paine; though the Chyrurgian may try if happily hee may break the Stone in the Bladder, and draw it out by peece-meales.

*Marianus Sanctus Barolitanus* would have an Orifice made neere the neck of the Bladder; *Pareus* and others, would have the Incision made in the middle of the Neck, and the Stone to bee taken out that way; but I much feare this way of Incision, because of the Sphincter, which thus would scarce escape unwounded. I therefore repeate what I said before, since the neck of the Bladder in men which is much narrower than in women, may be so enlarged by the Instrument that the stone may be brought out that way; why may it not be done in women, the neck  
of

of whose Bladder is more capacious?

But here will some reply, wilt thou refuse *Object.*  
this Operation, used by thy selfe, as appears  
*Cent. 1. Obs. 68*? The cause gentle Reader *Solut.*  
is that nature shewed me the way and meanes,  
how the Operation was to be done: For the  
stone by its sharpe point had so corroded the  
Bladder, and the neck thereof, that it might  
be caught in the Neck of the matrix, through  
a little hole with the little finger, and Cathe-  
ther; and I therefore enlarged the Orifice,  
with a small crooked knife, that I might the  
easier put in a crooked Pincer; *the shape of both*  
*which are described in the Page following.*





With these Pincers, I tooke such fast hold of the Stone, that at the second twitch I pulled it out, and the woman recovered, lived many yeares after, and brought up her children honestly. And for the woman of Fryburg mentioned in this Chapter, nature taught mee what to doe.

It being then apparant by both these examples, that in this place Lithotomie may be practised on women without danger, I think it best to forbear Incision of the Bladder.

But this I would have understood of such stones, as for their greatnesse cannot be drawn through the Neck of the Bladder, and for hardnesse cannot be broken. Both the wayes of Incision, are attended with no despicable dangers: for if the neck of the bladder bee to bee cut, it is to be feared that the Sphincter may be wounded also, and the Patient will not afterwards be able to hold her Urine; and if the Incision be made under the Neck of the Bladder, there wants no cause of feare, because the wounds of the bladder are not healed but with difficultie.

But if the case were such, that I must of necessitie practise one of these, I would choose the last, there being many examples to prove that the wounds of the Bladder may be healed; amongst which the woman of Fryburg may stand for one, who was both perfectly healed of her wound, and was as well able to hold her water, as ever she was before in her perfect

fect health. But if this danger may happen by a wound caused by the sharpnesse of the Stone, and confluence of evill Humours; how much easier may it come by the wound made by a new Incision?

This way of Incision is thus to bee ordered and done: The Body being first prepared by fit diet, purging, and the like; let the woman be placed and bound, as hath beene directed formerly, and then let the Stylus Conductorius, not a straight one, but a little bent, bee thrust into the Bladder to the Stone, and that to this end, that the Stone may be raysed from the bottome of the Bladder to the neck thereof, and one of the Attendants having fastened upon the Stone with the Instrument, may writhe the handle of it, from himselfe towards the *Os pubis*; for by this meanes the Stone will presently appeare under the neck of the Bladder, where the Chyrurgian shall make incision upon it, through the neck of the mother, till he may touch it.

Having made Incision, let him presently catch, and draw out the Stone with the crooked Pincers, and the Attendant wrest the Instrument from himselfe, that so they may help each other. The Incision-Knife ought to bee covered with cloth every where, save only at the point, lest otherwise it might doe hurt elsewhere: The Sphincter is not to be touched; and the Pincers must not be straight, but bended a little upwards as it appeares by the  
former

former figure. Or if it please the Chyrurgian, he may make tryall of the Hamulus, as in men I disallow it not; but the Stone being drawne out, he must proceed to stench the blood, aswage paine and the like, as hath been shewed formerly.

But because these wounds by reason of the exceeding Nervous, and scarce fleshy substance of those parts, are very painefull and not easily cured; for the Readers sake, I have hereto affixed the Method and Medicines, which I used in the cure of the woman of Friburg, mentioned in the beginning of this Chapter.

First, because shee was much tormented with paine, I ministred unto her daily a little of the following Medicament which I injected into her Bladder, and the Neck thereof.

Rx. Sem. Cydon.

Fenugrec. ana ℥j.

*His grosso modo contusis affunde mens. ℥. aqua, in qua hordeum ad crepaturam imoxerit, seminibusque predictis per horam in ea infusis, coletur, & Colatura adde Ol. Amygd. dulc. ℥ij. Mel. rosat. ℥j.*

If any preternaturall heate happen in this way of Cure, the Chyrurgian may apply this Medicine in the manner aforesaid. Because also that she went not to stoole orderly, I oft gave her Clysters made of the decoction of a Calves-head, Earth-wormes m. j. Yolkes of eggs n. ij. oyle of Dill, and Chamem. ana

℥j.

ʒj. which Clyster doth not only loosen the belly, but asswageth paine also, and is therefore to be injected into such women as are Cut, as often as they are bound in their bodies, or tormented with paine.

To asswage paine, I also made her Baggs of a q. f. of these following Hearbs, & having boyled them in water, applyed them hot to her Perinaeum, and Privities.

Rx. Rad. Althea, ʒj.

flor. Chamomill.

fol. Malva,

Violar. ana m. j.

sem. Cydon.

Fœnugrec. ana ʒij.

Anis.

Fœnic. ana ʒj.

Incidentur & contundantur grosso modo, ad usum predictum.

But if there chance to happen any Hæmorrhagia after the Operation, then neither this nor any other hot tomentations are to be applyed, till it be stopped. I commanded her Belly, Privities, and Hipps to be annointed with the ensueing oyles, or unguents.

Rx. Ol. Amygd. dulc.

Ovor.

Axung. human, ana ʒss.

Ol. Lumbric.

Anethin. ana ʒj.

The Loins, and *Os sacrum* are to be annointed with the following oyles.

Rx.

℞. Ol. Rosae.  
Nymphaea,  
Violar. ana ℥ j.  
Campb. ℥ j.

Cum pauco albuminis ovi, & acet. rosae.  
miscantur, in mortario plumbeo, & agitentur, ad  
formam Linimenti.

After supper, and in the morning I admini-  
stred unto her a little draught of the follow-  
ing Emulsion, which the Chirurgian may  
give to all such as feele any heate in their  
water, or are weake, and feeble, happily.

℞. Amygd. dulc.  
sem. Papaver. alb.  
4 sem. frig. major. ana. ℥ ij.

Omnia contundantur, & cum aquâ seq.  
per pannum trajiciantur.

℞. Ptisana,  
Aq. Nymphaea,  
Rosae. ana. ℥ ij.  
Cinamom. destill sine vino,  
Borrag.  
Bugloss. ana ℥ j.  
Sacch. opt. ℥ j s. Misce.

By use of these Medicines, her paine was  
soone abated, and many stones were avoyded,  
through the neck of the Matrix. Sometimes  
also I purged her with this potion.

℞. Agrimon.  
Veronic.  
Cuscuc. ana m. s.  
flor. Borrag. Bugloss.

Violar.

*Violar. ana p. j.**Liquirit. ℥ ℞.**Sem. Anis.**fol. Senn. ana ℥ i j.*

*Decoquantur in aqua, ut Colatura redeat ad ℥ i j. in qua dissolve*

*Electuar. Diaphœnic. cum Rhab. ℥ i j.**Syr. violar. solut. ℥ j.**Misce, capiat in aurora.*

Sometimes also I gave her a little oyle of sweet Almonds with Sugar, with Vealebroath in the morning. The pains being abated by use of these Medicines, I injectd, for some dayes together, this following decoction, into the Bladder, and necke of the Matrix.

*℞. Rad. Consclid. major. ℥ j.**Hordei m. j.**Veronic.**Scordii,**Alchymill.**Sanicul. ana m. j.*

*Decoquantur in aqua mens. j. ad tertie partis consumptionem. In Colatura dissolve Mell. rosac. ℥ i j.*

As oft as I injected this medicine into her Bladder, it issued out againe by the necke of the Matrix, but alwaies brought out with it much phlegme, and some sand. Besides, shee could not hold her water for a long time; yet in the end, shee was delivered (by Gods blessing) from that trouble, as I shall shew by and by.

The

The Bladder being cleansed with the fore-named injections, I put into the Necke of the Matrix, a big Tent of a fingers length, made of Flax, and Cotton, and dipped in the following water.

℞. *Aq. Plantag.* ℥ i i i j.

*sem. Cydon. grosso modo contusi,* ʒ ʒ.

*Misceantur, & per dimidiam horam ad cineres macerentur: mucilago extract. trajiciatur per pannum, addendo C. C. usti,*

*Lap. Calaminar.*

*Tutie, ana* ʒ ʒ.

*rad. Consolid. major. subtilissime pulveris.* ʒ i j.

This Tent I used for some time; and in the meane time, sometimes I reiterated the prescribed purgation, enjoyned her to observe a good diet, and to refraine all meates and drinckes which might sharpen her Urine. Besides (because her inward Bowells were free from obstructions) she sometimes took a Vulnerary potion, and a Syrope made of Traumaticke Hearbs. By this meanes, the unvoluntary flux of the Urine was stayed, and at last it issued naturally through the Necke of the Bladder, and shee lived many yeares in good health, till at last she dyed of the Plague.

But a long time is required for this Cure; nor can the Chirurgian bee certaine that the wound will cicatrize, or whether some fistula may be remaining, and the Urine may passe that way. Therefore againe I would desire



every good and faithfull Lithotomist to beware, that in this case he doe nothing rashly and unadvisedly, and that hee would not appoint this Operation, but where all other remedies are hopelesse.

---

CH A P. XXII.

*Of some horrid, and pernicious errors which are committed, by many common Lithotomists, before, at the time, and after the Operation.*

**H**itherto wee have treated of the principal things to be considered by the Lithotomist, before, & during the Operation, and Cure. But to give the young practioners more light, for a conclusion I have pleased to insert, and refute some grosse and pernicious errors, committed ordinarily, by many (the more is the pitty) which professe this Art, and thinke highly of themselves; all which I shall doe, with all curtesie, not intending to dispraise any private man for his way, but to instruct the unskilfull, and deliver the grieved Patients from misfortune.

I. Error.

The first and chiefest error which is committed by common professors in Lithotomy, Cutting of Ruptures, and the like difficult Operations, is, when some dayes before the Operation, and during the time of the Cure, they grant him liberty to doe what hee will,  
without

without prescribing his diet, or order in other things of that kinde, or preparing his body by purging, but presently make incision upon him, as they finde him.

When therefore the body shall be *Cacochy-mus*, as it cannot otherwise be, or *Plethorick*, then all humours will fall downe to the affected place, whence afterwards, Paines, Tumors, Inflammations, Convulsions, and sometimes Death it selfe ensueth. The Chirurgian therefore ought not to attempt this dangerous Operation, unlesse the body be well purged.

Some are often much deceived, thinking that they have hit the Bird in the eye, when they have purged their Patients before the Incision, with *Antimony*, *Mercurius vita*, and the like strong Medicines, when nathelesse by these violent Minerals, the internall faculties, the radicall moysture, and naturall heat are so weakned, and oppressed, that oftentimes they can scarce be recovered; in which case, if Incision be appointed, and strength fayle againe, through paine, and flux of Blood, the Patient commonly submits to fate. The Chirurgian therefore, which is not so versed in the Theory, and Fundamental points of Art, that hee can discern the Nature, and Constitution of his Patients, their strength, the predominant humour, and way to purge it, should not be ashamed, as many are, to advise with some learned Physitian, and joyne with him. For by his advise he may learne, and

get praise, and credit; or if the Patient should miscarry, the Physitian may give a good testimony of his care and trust, and excuse him.

3.

Some Lithotomists, the three last or more dayes before the operatiō, use morning & evening to administer to the Patient, a potion of the decoction of *Rest-harrow*, *Grummell*, *Saxifrage*, and other strong Diuretikes, to this end, that as they imagine, they may thereby drive downe the stone to the necke of the Bladder, and so catch it more easily with their Pincers.

The Medicine seemeth a proper one, and maketh a goodly shew; but it is unprofitable, and pernicious. Unprofitable, because these Diuretike Medicines coming through so many Meanders, and turnings into the Bladder, as from the stomacke through the Guts, the Meseraicke, and Emulgent veines, the Liver, Kidneyes, and Ureters, so lose their strength, that they cannot drive down the stone to the necke of the Bladder: And pernicious, because Diuretikes bring along with them many grosse and offensive humours to the Ureters and Bladder, from the Stomacke, Guts, Meseraick Veines, Liver, and Kidneyes, which after incision produce many dangerous Symptomes; as Paine, Inflammations, the Gangrene, Convulsions, and death. Hence some skilfull Chirurgians, some dayes before incisiō, use not to administer any violent, but gentle purging potions. For if Medicines properly purging by the Funda-  
ment

ment, can also worke by the Ureters, how much more can such as have a peculiar quality to procure urine, doe the same? Let every honest and carefull Lithotomist therefore refrain from administering Diureticks thus.

But if we would have the stone fall down, let the Patient (as hath beene said) comming out of the Bath, and to bee cut immediately, walke about his chamber, and leape, if it may be. If he bee an infant, let him bee taken under the arme-pits and shaken a little; for so the stone of it selfe will easlyer fall to the necke of the Bladder, than it can be driven down by Diureticks. These are the most grosse errors which are committed before Incision, others as bad now follow.

Some Lithotomists, and cutters of the Rupture, thinke it necessary to stich up the wound presently, that it may quickly Cicatrize: But whether such stiching bee helpfull or needfull, it may easily be determined: That it is not helpfull but rather hurtfull, it appeareth: First, because the Tent cannot bee put in as is requisite, nor the blood collected in the Bladder, and raising many grievous symptomes, be stopped. Secondly, it is knowne to every man, that the stone being drawne out, many preternaturall things, as sand, phlegme, congealed blood, and purulent matter remaine in the Bladder; and the wound being stiched up, how I pray, can this filth bee carryed away? The Retents in the Bladder, must needs

putrifie, and be corrupted, and thence will arise great paine, Inflammations, Tumours, Apostemes, Convulsions, and other deadly Symptoms. Thirdly, it being granted that neither congealed blood, nor gravell remaines behind, yet every man knoweth time and rest to be required for cleansing of the Bladder, which hath been long exulcerated by the stone, weakened, & producing a thick and slimy phlegme each day, as we commonly see it in Calculous people. But this worke must necessarily be done through the wound: for the urinary passage being long, with many turnings, and windings, it cannot be voyded that way; especially the Expulsive faculty at that time being weake and feeble. This slimy humour then being retained in the Bladder, how can a perfect Cure be expected? Will not some new stone be bred, or some dangerous symptom arise? Yes doubtlesse. This we have oft observed in outward Apostemes, yea in green wounds not well cleansed, and cicatrized before their time; for then a sanies is bred & collected in the bottome, and that causeth new and grievous Symptoms. Fourthly, the languishing Patient findeth new paines; for the wound swelling, & the Patient removing his thighes, the stiches cut, and stretch the lips of the orifice, and torment the Patient without intermission. Besides, the way of stitching bruised wounds, is against the method of all expert Chirurgians. And for these reasons  
stitching

stitching is not helpfull, but hurtfull.

That it is superfluous, and not needfull, every wise man may conclude, from the constitution of the part affected; when he shall finde that both the thighes being bound, as hath beene shewed in its place, the wound may as well cicatrize, as if it had beene stitched. These stiches then are not needfull nor helpfull. This is confirmed by the excellent Chirurgian *Pet. Francus. l. de Hernijs. c. 32.*

Yet this error is no new one, but hath been used many yeares; and I beleve that *Theodoricus* was its first Author, as you may see *l. 3. c. 44.* of his Chirurgery; nor is it a wonder, the liberall Arts being then brought to utter Barbarisme, and, as it is probable, *Theodoricus* himselve being a Church-man, and Bishop of *Cervia*, never having put his hand thereto: for as he confesseth in his præface, hee collected it from one whom hee calleth *Hugo de Lucâ*, with whom he stayed not long; so that it is plaine, that hee devised it and learned it not by his owne or *Hugo's* experience. But it is wonderfull that *Lanfranke Guido*, and other famous practitioners should like faithfull schollers, follow this Ecclesiastique, who was no Practicall, but Theoricall Chirurgian, in this pernicious error, and never marked how many sick men being cut, have paid their debt to Nature, by stitching up their wounds. I therefore, with all curtesie, would dissuade every honest Lithotomist from this error.

Many

5. Many Artists immediately after Incision, use to place the Patient in a Bathing-tub which they have filled with a decoction of proper hearbs, and leave him there for the space of halfe an houre, more or lesse, that (as they conceive) his paine may be abated; and the body cooled by incision, may be warmed againe. But the Bath ministreth occasion to these inconveniences, and symptomes following.

First, by the Bath, the wounded veines and Arteries are opened againe, whence ensueth such a flux of blood, that the sicke party is soone overcome with weaknesse, and swoonings. Nor is this the least cause that many dye presently after the Operation, or languish with dejection of strength, and many chronicke diseases, because by the losse of blood, they are so enfeebled, that they cannot bee recovered.

*Hippocrates* adviseth that no hot, but cooling Medicines bee applyed to such as have the flux of blood, or in whom it is suspected.

*Es. Aph. &  
23.*

Secondly, let us grant, that no *Hæmorrhagia* is to bee feared, yet every man knows that the body was troubled in the Operation, through vehement paine and an *Hæmorrhagia*, and the strength so lost, that no better remedy can be used than rest. Besides the Bath sending many vapors upwards, a dangerous *Lipothymy* may thence ensue, as I observed in a man of note some yeares since, after the Operation.

Thirdly, the quality of the Bath being attractive, many preternaturall humours being  
but

but newly moved, are, as by force, drawne downewards out of the upper part of the body, especially out of the loines, and sometimes flow to the wound so impetuously, that a great tumour with an intemperies, and other symptoms follow: for by use of the Bath, all the passages in the affected place are made so large and slippery, that all excrementitious humours flow to the wound, and hinder the cure thereof.

Some Lithotomists reject the use of the Tent, and wholly apply themselves to heale up the wound speedily. This is great rashnesse, and contrary to the rules of Art; for it is not enough that the sicke man bee quickly cured, and restored to his former health; but it must be done safely, that is, without paine, and danger. But I see not how hee can be safely, and without danger cured this way: for unlesse by the helpe of Tents, the necke of the Bladder be kept open sometime, and the Bladder cleansed, there is a new gravell, and phlegme reserved, and the last evill is worse than the first: because this gravell and phlegme is againe coagulated, and hardned by the inflammation, and heate following the Operation. These Retents then, such as are plegme, and coagulated blood, wanting ventilation, are suffocated, and inflamed, whence commonly a gangrene, and death it selfe after most bitter paine ensueth. For, because of the inflammation of the Bladder, the urine cannot

6.



not fall from the ureters into it ; and thence inflammation of the Kidneyes, a vehement internall distemper, Sownings, Convulsions, and the like arise. Some professors of this Art, doe also order their Patients to rise from bed the sixth, or fourth day, & think that thus they have hit the marke, and shall gaine to themselves fame, and credit. But a man of the least judgement may easily conceive how dangerous a course this is ; and what account they are one day to give to God for it ; as I have shewed before many men.

7.

Seventhly, I cannot omit to advise the Reader to beware of a most pernicious error which hath beene delivered, not by the least of our moderne Chirurgians. He writeth, and affirmeth, that it is enough, if after the stone be drawn out, the wound be covered with a cleane linnen cloth ; and concludeth that the urine alone is able to heale it. Admirably spoken ! but how will you helpe such symptoms, as paine, swellings, inflammations, and the like, to which all wounds, great ones especially, and bruised, are subject ? or how will you prevent the symptoms, without proper medicines, and remedies ? Nay rather (say I) the Patient is thus exposed to danger of present death ; for, unlesse the wound be kept open at first by the helpe of medicines and Tents, it will so swell and come together, that not the urine, much lesse the slimy, purulent matter & blood, which remains after incision, can

can issue thence, whence all sorts of evil symptoms and death follow.

But what helpe can bee expected by the urine, and how should it doe the office of medicines to destroy the symptoms, and heal the wound: it then having not the nature of a simple excrement, but another adventitious one? For not only by reason of the paine, and inflammation of the Bladder, and wound, but also because of the preternaturall and Feaverish heat of the heart, and the whole masse of blood, and the sanies collected in the Bladder and about the wound, it getteth such a corroding sharpe pernicious quality, that I may freely affirme the retained urine, to bee one of the principall causes of those dangerous symptoms, which attend this Operation. Let the Chirurgian therefore endeavour by all meanes to give the urine free passage, and not suffer it to bee retained: And this hee may doe without much trouble, by the Cannula and Tents, as hath bin shewed in its proper place.

Eightly, there is another, and no slight abuse done by some Empiricks, who not only refuse the use of Tents in the wound, but endeavour to cleanse the Bladder from phlegme, gravell and the like, and to heale the wound perfectly by their Vulnerary potions. This is a great error, whereby many lose their lives, it being impossible that Vulnerary potions should reach the Bladder, and  
doe

Galen. Ar-  
tis medic. c.  
80.

doe any good there, when Diureticks, as *Galen* and others write, and daily experience testifieth, though they be of a subtile, and peircing faculty, can scarce reach it; for how then can these astringent and dry Trawmatickes attaine thither to cleanse, and heale it? they will rather stop the Mesentery, Liver, and the other internall Bowells, and veines, as hath beene said *Cap. 20.* and raise evill symptomes, as the learned *Io. Matthæus* testifieth, *Difficult. med. 9. 30.*

9. Ninthly, some account it for an especiall and singular remedy, presently after the Operation, to apply a Boulster imbided with white wine, & use it not only at the Patients first binding up, but through the whole course of the cure, as a famous Lithotomist not long since wrote unto mee, desiring mine opinion therein. I answered, that in these and other contused wounds, such medicines were required in the beginning, as were fit to stench blood, asswage paine, hasten suppuration, and repell the nocivous humours flowing from the body; that it is apparant that wine cannot stop the flux of blood, because such medicines should bee cold and dry, and wine besides its sharpnesse, is hot. That it could not asswage paine, much lesse hasten suppuration, because it doth vellicate the wound, and cause paine; and all Anodyna, & Digestives ought to be of an hot and moist nature, without acrimony. And lastly, that it would not repell the preternaturall

turall humours flowing from the body, it being hot, whereas Repellents should be cold.

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CHAP. XXIII.

*Of the Symptomes, and Means  
to abate them.*

**H**itherto the principal heads and things necessary for a Lithotomists knowledge, as farre as concernes the ordering of the Operation, have beene propounded, and explained. But because sometimes numberlesse pernicious symptomes, and preternaturall affects inverting the whole cure, and often deceiving the best experienced and learned physitians, attend this great and dangerous Operation, therefore the Lithotomist should provide some learned Physitian, who well knowes the nature and constitution of the Patient, and direct him not onely for his diet, and the voyding of excrementitious humours, but bend his study to abate, correct and destroy the symptomes. This will purchase the Chirurgian a good name amongst honest and learned men; and though the end answer not his desire, the Physitian may commend his diligence to the Patients kinred, and maintaine his credit. This order I my selfe have observed, as much as I could in all  
difficult

difficult Operations, not in vaine. But because a Physitian cannot bee had at all times, the Chirurgian ought to observe these things following.

First, that during the Cure, some dayes before, in, and after Incision, the Patient keepe a strict diet, but especially that he may purge away whatsoever may heate and inflame the body, humours, and blood, that he take nothing but Broath, Creame of Barly, and husked Oates, which in this case is most commended. Let him abstaine from wine, and in stead thereof, use the Ptisan, and the Emulsion of sweete Almonds, as hath bin said before, and need not be here repeated.

Secondly, he must be carefull to keepe the body open that he may goe to stoole naturally every day; for if the excrements of the Belly be retained in the body, and hardened, they will presse the Bladder, straight gut, and the other parts which were bruised, and exulcerated in the Operation. For purgations he must administer only *Benedicts*, as *Manna*, *Syrup. rosar. solut.* or *Syr. de Cichor. cum Rhabarb.* for how much the Patient may suffer by the use of strong Catharticks, hath beene shewed formerly. The best and fittest medicine for people in this case, is this clyster.

*Clyster.*

℞. *Rad. Althea*, ʒj.

*fol. Althea,*

*Malva,*

*Mercurial,*

*Parietar.*

*Parietar. ana. m. j.**Chamomill.**Melilot ana m. ss.**Sem. Lini,**Fœnugrac. ana. ℥. ss.**Anis.**Aneth. ana ℥ j.*

*Decoquantur omnia in aqua mens. ij. ad consumptionem tertiae partis; Hujus decocti pro adulto accipe ℥x. Butyr. recent. Ol. Aneth. ana ℥ j. Vitell. ovorum num. ij. Sacch. rubr. ℥ ij. Misce. & f. Clyster.*

Suppositories are not so usefull: because by their sharpnesse, and hardnesse, they crush and exulcerate the Fundament, which was not a little stirred in the Operation, & by consequent the neck of the Bladder. In cold weather there may be smal Suppositories made of fresh Butter, & kept in cold water, to be applyed; for these soften the belly, and aswage paine. In Summer, emollient hearbs are to bee added, and boyled with the meat. The best are Succory, Endive, Spinach, and the leaves of Monks Rubarbe, and Mercuriall; the two last whereof, do in a manner loosen and soften the Belly.

Thirdly, for prevention of the symptomes, the Patients constitution is much to be respected; for if he be young, strong, plethoricke, hath not lost too much blood in the Operation, then there may bee a veine opened in his right arme, the second or third day after, and

blood taken, from him, with respect to his strength. This Phlebotomy doth prevent and hinder the internall heat, the Feaver, Inflammation, Tumours, Convulsions, and the like.

Fourthly, twice every day, or as oft as he is opened, let his Belly from the Navill to the Privities, Loines, and *os Sacrum*, be annoynted with *Ol. rosac. vel Myrtill.* or makes for him this Liniment.

A Lini-  
ment for  
the  
Loines.

*R. Unguenti rosac. ℥ j ss.*  
*Butyr. rec. in aq. rosac. loti,*  
*Ol. Violar.*  
*Nymphææ, ana ℥ j.*  
*Mucilag. sem. Cydon. aq. rosac. extract.*  
*℥. ss.*  
*Camph. aceto dissolut. ℥ j.*  
*Misce in Mortario, ad formam Linimenti.*

But if any preternaturall paine arise in the Belly, or neare the wound, then the Oyles used at the first, are to bee reiterated; as of sweet Almonds, of Yolkes of Egges, and the like; to which may bee added a little Oyle of Earth-wormes, against Convulsions; and the *os Sacrum* may be annoynted with it. Let this be spoken generally, and briefly of the Symptoms, and their prevention; for it is not for this place to handle them largely; nor doth that office concerne him wich cutteth the Rupture or Stone, but some learned Physitian called to that purpose.

## CHAP. XXIV.

*Of the retention of the Stone  
in the Ureters.*

**I**N the former Chapter I have treated of the Symptomes in Genere, which attend upon the Operation; but because there are two (no light ones) Symptomes which are commonly incident to such as have the Stone, for the instruction of the young Chirurgians, I shall runne them over briefly in the two following Chapters.

The chiefe, and most dangerous Symptome which can happen unto them, is, when the stone falling into the Ureters, and sticking fast in them, causeth most vehement paine, by reason of the straightnesse, and sense of those parts, as hath beene shewed more largely, Cap. V. An Inflammation of the grieved part, and death it selfe doth often follow this paine, especially if the sicke man hath both the Ureters obstructed, and cannot voide his water. But here I would not have the Reader ignorant that the Ureters may bee obstructed by some other cause besides the stone of the Kidneyes, as appeareth by this example.



An obser-  
vation.

Anno 1595. my eldest sonne died at *Collen*; who till the seventh yeare of his age, had his neck, head, and whole body so cleane, that neither Pustule, Scurfe nor Scab, could be found about him; which made me with griefe sometimes tell my friends, this childe will dye of some strange disease; as it afterwards fell out. In his seventh yeare, after an head-ach, which lasted a day, or two, there followed paine of the Loines, joyned with a Feaver, and such a stopping of the Urine, that he could scarce voide one drop. Three learned men, *Arnolet Manlius*, *Iohn Kuenius* of *Bredenbach*, and *Iohn Slotanus*, all Doctors of Physicke, being called, used all their care and Art to helpe him; but in vaine, for the seventh day hee deceased. The Corps being dissected by *Lodovicus Glandorffius*, an expert Chirurgicalian, in the presence of Doctor *Slotanus*, wee found a great Inflammation of the Kidneyes, and adjacent parts which were gangrenated.

An advise  
for all  
mothers  
of fami-  
lies.

It is therefore needfull, that all mothers of Families should observe that they give no medicines to Infants for the Scab, or Itch, unlesse it bee in the Eyes, Eares, Nostrills, or the like parts; because Nature being not able to purge this child by any breaking out in his body, the vitious matter fell downe to the Loynes in his seventh yeare, as by Criticall expurgation, from the head, and thorax and obstructed his Ureters: And though I ne-

ver saw any example besides this, where the materiall cause of the Itch stopped the Ureter, yet I have met with many preternaturall affects in infants both inward, and outward, from whom Nature hath either not purged away the Itch, or it hath beene cured as by force, and provocation of Nature. Hence we see that children are often troubled with malignant and uncureable Impostumes, Strumes, Ulcers, Fistulaes, and the like; not to speake of those maladies which often grow in their noble inward parts, because Nature is not refined, or hindered in her worke. This I would have both mothers of families, and young Chirurgians to be advised of, because some of them make no scruple, to annoynt children with *Ung. Enulatum*, or *Bernhardinum cum Mercurio*. But let every honest Chirurgian beware of this course; and if necessity require it, fresh Butter alone, or washed with Rose-water, is sufficient to abate the torment of the Itch, if the place bee therewith annoynted, or mingle with it Creame alone, newly drawne from the Milke.

But to returne to our purpose: Nature hath made the Ureters very straight, even to the Bladder, their use and end being to keepe all slimy, and purulent matter from falling into the Bladder. But if it happen (as it doth in some Calculous persons) that many stones, and frequent doe slip through them into the Bladder, they are then in processe of time, so enlarged, that

(I have seene it) stones of the bignesse of a Pease or Beane, doe sometimes fall from the Kidneyes into the Bladder, which can neither be without great paine, because of the exquisite sense of the Ureters; nor without great danger: For if the stone fall into the Ureters, and stick fast there, vehement paine, distemper, a feaver, want of rest, raving, Lipothymies, and the like dangerous Symptomes follow it; and the Inflammation of the affected part increasing, the thread of life is cut off by an ensuing Gangrene, and Sphacelus, as in *June 1623* I saw it happen to a man of note in this neighbourhood. When the Stone was fast in the Ureters, and could not be removed by any remedies, hee died, and after his decease, all his side became black, as it doth by a Gangrene.

How the Stone is detained in the Ureters.

The Stone is detained in the Ureters, because it is sharpe, rough, uneven, and Angulous, and the Ureter narrow, and small. And besides, if the expulsive faculty be weake, and feeble through much paine, the Stone by reason of its sharpnesse, cannot passe the the straights of the ureters, but remaines fast; and if the sicke man bee full of evill humours, and will use strong Diureticks, he shall bring downe abundance of phlegme, and vitious humours to the part affected, and so adde fuell to the Fire.

There is lesse dangerto have one ureter only obstructed than both; for Nature doth deduce

deduce the Urine to the other Kidney, and through the Ureter thereof to the Bladder. I can truly affirme, that Anno 1624. *John Wolfe*, a grave man, and Citizen of *Berne*, had some stones impacted in his right Ureter, for three weekes together, that during the time hee felt much paine in the place affected, but the other Symptomes were not grievous, because his Urine passed through the left Ureter into the Bladder, & thence by the common passages. I ordered the Cure for this man, as long as the Stone was detained in the Bladder, after the method which shall be described hereafter; and gave him few Diureticks, least I should drive downe other humours from the body into the Bladder. At length the stones fell downe to the Bladder, and were voyded by the yard without paine.

But when both the ureters are stopped by stones, sand, or the like, there ensueth vehement torment, & the sick man (as the excellent *Ambrose Pareus* testifieth *lib 17 c. 36*) is often oppressed with the same paine, which they endure who are drowned. For the urine returneth againe to the *vena cava*, suffocateth the vitall spirits and extinguisheth the naturall heate. Of such torment, and the retention of the stone in both the ureters, a good woman of *Lausanna*, by name *la Flammande* Hostesse of the white Crosse, dyed 30 yeares since. Besides it hath bin observed, & *Pareus lococitato* witnesseth that some have beene brought to such extremities that they have voyded their

The Obstruction of the ureters dangerous.

An Ob-  
servation

urine vpward by vomit. The famous *Gregor Horstius* ordinary Phisitian, of the Imperial, & free state of *Ulm*, my good frind, wrote vnto me this memorable case some yeares since. Four yeares agoe (saith he) I saw a Boy at *Darmstact* 12 yeares old, who from his childhood once a day at least vomited a salt water by his mouth like Horse-pisse. The cause was because when he was but halfe a yeare old an Hogge bit of his *pudenda*, and left him as bare as the back of a mans hand, & the lips of the wound by the Barber-surgeons negligence. grew together. The brave French Chirurgion *Barthol Cabrollius* obs. 20. reports, that there was brought unto him a young gentlewoman, the neck of whose bladder was so closed up from her childhood, that shee voyded her urine by the navill, not without much paine. I haue here inserted these two observable, and new examples, for the industrious Phisitians sake, by which it appeares, how wonderfull the Almighty worketh sometimes, and produfeth admirable things in many men by his Servant Nature.

Order for  
Diet.

As soone as the Stone is impacted in the ureters, let the Patient have a fit Diet prescribed for him; let him refraine all things that be crude and of hard digestion, such meates, as inflame the blood, and humors, as spices, wine, and the like, and in stead thereof use the Emulsion of sweete Almonds, ex *Amygd.* part. 2. and

and *sem Cucurb.* part 1. or provide him this following Potion.

℞. *Agrimon.* *Veron.* ana. m. β.  
*Liquirit.* ℥j.

*Incidantur, ac decoquantur in aqua mens. ij. mellis. cochl. j. per horam dimidiam.* Let him drinke hereof at his pleasure. After, let him take the following Clyster, and keepe it as long as he can.

℞. *Rad. Malv.* *Alth.* ana ℥j.  
*fol. Alth. Malv.*

A Clyster.

*Viol. Mercurial.* ana m. β.

*Parietar.* m. j β.

*flor. Chamomill. Melilos.*

*Sambuc.* ana. m. β.

*sem. Anis. Fœnicul.*

*Lini. Fœnugrac.* ana ℥ij.

*Incidantur, & contundantur omnia, postea f. decoctio in aqua fontan. ℥iiij. ad consumptionem tertie partis: In Colatur. ℥x. dissolve,*

*Butyr. recent.*

*Ol. Lilior alb.*

*Lumbricor.* ana ℥j.

*Vitell. Ovor.* num. ij.

*Salis,* ℥ij. *Misce, f. Enema.*

These Clysters administred often, or at least once every day will much helpe the Patient: for they mollifie the inward urinarie passages, and make them slipperie, especially if they be long held by the sick man. If they be detained in the Guts, let the Belly be moved by a Suppositorie, and adde but a scruple of salt, unlessse

unlesse he can containe them sufficiently.

A Saccu-  
lus, A Sacculus made of the same Hearbs, which  
are prescribed for the Clyster, of such bredth,  
and length that it may cover the whole side,  
is to be applied to the affected place; and if  
the stone yeeld not to these medicines, make  
a bath of the same hearbs, and let the Patient  
sit therein up to the navill, let him also drink  
*Ol. Amygd. dulc. cochl. j.* with a little *Syr. de  
Albea*, the decoction of *Agrimon. and Vero-  
nic.* with an addition of *Licoras.* If it may be,  
let him exercise his Body with riding, or wal-  
king that thereby the stone may the better fall  
downe to the bladder. Let the Bath be so or-  
dered that the Patient may hold his feete  
without the water; for so he will be able to  
sit the longer.

Some Apothecaries, and some which are  
subject to the Stone, use to keepe such Ba-  
thing Tubbs, for their use, and if any would  
have them made for him, he may see their  
forme in *Parvus lib 17. cap. 38.*

For want of one of these, hee may use a Cover  
or Kinnell, of such breadth, as he may conve-  
niently sit in it, and so deepe that the Bath  
may reach the Navill; this vessell, is to be a  
little rayfed behinde, that his Back may leane  
thereon, and to be cut open or hollowed be-  
fore, that the Patients thighe may hang forth.  
Herein let the Patient be seated as convenient-  
ly as may be; let the Bath be kept temperate,  
and let him abide in it a convenient time.

Let

Let hearbs enough be put into the Bath that it may be more efficacious. From the Bath let him be carried to his warme Bed, that his belly take not cold, and anon after his going out of the Bath, give him this Potion.

℞. *Ol. Amygd. dulc.*

*Syr. de Althea Fernel. ana. ℥j.*

*Coofect. Alkerm. ℥j.*

*Cum aqua Parietar. & decocti pro potu ordinario praescripti, ana. part. equalibus f. Potiuncula; detur tepide.*

A potion  
to be tak-  
en after  
the Bath.

When he hath rested a while after his Bathing, let his Belly be annointed even to the back bone, with this Liniment.

℞. *Ol. Lilior. alb. Scorpion.*

*Amygd. dulc. Lumbric. ana ℥j.*

*Pingued. Anseris, Capon. ana. ℥ss, Misce.*

The Body being thus annointed, let the foresaid Sacculus, or this Cataplasme be applied hot.

A Lyne-  
ment,

℞. *farin. Tritici, Hordei, ana ℥ij.*

*Pulv. rad. Althea,*

*fol. Malva, Parietar. ana ℥ij.*

*sem. Lini, Foenugrac. ana ℥ij.*

*Coquantur cum decocto rad. & fol. Althea & Parietar. fiatque Cataplasma: addendo sub finem.*

A Cata-  
plasm,

*Butyr. recent.*

*Ol. Lilior. alb. Lumbric. ana. ℥.*

*Vitel. Ovor. num. ij.*

*Croci, ℥j. applicetur calide.*

But let the Bath, inunction of the Loines,  
bagges



bagges and Cataplasme be so often reiterated, as necessitie and paine require it.

Of Vomit-  
ing

In this case, to remove the stone downward to the Bladder, vomit also conduceth, for by the motion, and concussion of his body, the Stone doth sometimes fall into the bladder, therefore unlesse he Vomit naturally, provoke him to it by *Benedict* medicines.

A Vomit.

A draught of warme water mixt with *oleo Olivarum* doth procure it, especially if anon after the Vomitorie, the finger, or a feather dipped in oyle, be thrust upon the vnula. or.

℞. Rad. Raphan. ʒ ij.

*Menth. Horaci decorticat. ana p. j.*

*Coquantur omnia in aqua lbj β. ad consumptionem dimidiæ partis: adde parum Olei, vel butyri recent. & agro propina.*

An other.

Another, a little stronger. ℞. *Agaric. ʒ ij.*

*Rad. Raphan. Asari, ana ʒj.*

*flor. Roris marin. p j.*

*Coquantur in aqua, ut colatura redeat ad ʒ vj. In quibus dissolve Syr. Acetos. ʒ ij. Misc.*

This potion being administred warme, the Patient is to be advised, to procure vomit by his finger, or a feather thrust downe his throate.

Purgati-  
ons.

Purgations, are not to be administred to such Patients: for the preternaturall, excrementitious, slymy humours, and the like, being driven downe to the guts, some part thereof may easilie fall to the Kidneys, and ureters.

Some take *Cassia* in this case, and extoll it as a singular medicine to coole the Reines, and Loynes; but others haue found by experience, that

that it procures urine, and makes it acrimo-  
nious; of which subject, the reader may peruse Of Cassia  
the learned *Petr. Pigra*. lib. 7. cap. 4. and *Cens*  
*1. Epist. mearum*, *Epist.* 34. and 35.

Some also in this retention, and Interception  
of the stone in the ureters, commend the vul-  
gar official powder called *Lithontribon*, and Of strange  
Diureticks  
other strong *Diureticks*; which are not voyd  
of danger, unlesse the body hath been lately  
purged of all vitious humours: for otherwise  
these kind of medicines ( as I have oft obser-  
ved ) will drive downe evill humours to the  
Kidneys out of the upper parts of the body; so  
that not onely the stone is locked faster in the  
ureters: but, as I have sundry times found it, an  
inward Inflammation, and death doth ensue.  
Here then, much discretion is requisite; and  
if sometimes nature be to be succoured by these  
medicines, let a third part of *sem. Cucurbita*  
be added to the Almonds, which doth not on-  
ly coole the Reines, and ureters, but after a  
kind procure urine also.

Sometimes also the Patient may take a lit-  
tle draught of *Aque Parietar.* or *Petroselin.*  
mixt with the *Syr. de Althea Fernel.* or add  
to the Emulsion of Sweet Almonds, a little of  
the said waters; for so he shall move urine,  
more or lesse according to the quantitie of  
the water.

These greivous sicknesses, are most com-  
monly attended with dangerous symptoms, Of the  
Symptoms  
as an hot inward distemper, *Lipothymies*,  
want

want of rest &c. and it is therefore necessary that the Chirurgian should consult with some learned Physitian, that nothing may be omitted, but all things may be undertaken with discretion, and wisdom. For nothing is to be done rashly in this case; and an error once committed, is scarce to be repaired. If therefore any great internall distemper, or thirst afflict the Patient, it will not be amisse to open a veine in the right Arme according as his strength will beare it.

Phlebotomy indeed will hinder the inward inflammation, and other Symptomes; yet besides that, let him be præscribed a diet, for the cooling of his body, of which we have treated *cap. 9.*

If he be costive, he is to be eased by the prescribed Clyster, and to prevent Lipothymies, caused by vehement paine, disquiet, and watching, let the reader peruse *cap. 19.*

If his paine will not be mitigated by the foresaid medicines, and the Patient can take no rest, administer unto him this potion.

A potion  
to miti-  
gate paine  
and to  
procure  
sleepe.

*R. Aq. Lactuce. Parietar. ana ℥jss.*  
*Syr. de Papavar. ℥j. Althea Fernel. ℥ss.*  
*Confect. Alkerm. ℥j. Misce f. Potio.*

Give it two howres after Supper that hee may sleepe upon it. In my Patients I have oft observed that the paine being asswaged, and sleepe following it, by this potion, and other medicines of this kind, nature alone hath driven forth the Stone.

## CHAP. XXV.

*Of the Retention of the stone  
in the Yard.*

**T**HE stone (by Gods blessing) being fallen out of the ureters into the bladder, the paine ceaseth presently; but the Operation is not done. For the stone is not seldome retained, in the Yard, and *Vrethra*, where it stoppeth the urine, and causeth great torments; yet it is lesse dangerous than if it should bee detained in the ureters, because the *Vrethra* passing through the Yard, is commonly larger than the ureters: I adde *Commonly*. For I have had some Calculous persons in cure, whose urinary passage through the Yard was so narrow, that the stone could not be voyded then, without much trouble, and torments; when neverthelesse, they had fallen out of the Kidneys, through the ureters into the Bladder, without any forcing.

This straightnesse of the *Vrethra* may arise from nature or its first conformation, because nature doth not alwayes keepe the same tenor in all particular subjects, but doth some times produce some member bigger, or lesse in one than another. Againe, it may be caused by accident; as if the *Vrethra* of a calculous man hath beene weakened in his youth, by the *Gonorrhoea*,

The  
straights-  
nesse of  
the *Vrethra*  
whence it  
procedeth

*Lithotomia Vesicae.*

*hemorrhœa* or some stone hath bin taken from him; for then the *Cicatrix* straightens the passage, more than it was formerly.

There is respect to be had of the age also; for as young men have all their members, veins, & passages, soft slippery, & large; so they are all dryed, and hardned in old men; and therefore their vessels, veines, and cheifly the urinary passages be lesse, and straighter: whence, and from the weaknesse of the expulsive facultie, they voide they vrine, not without trouble and difficultie. But they who frequently, and for many yeares together have voyded many stones from the Kidneyes, through the ureters and *Vrethra*, have their passages a little more enlarged, & they elder they grow, they voyde them with lesse danger.

An Observation.

Thirtie yeares since, I went to a noble personage of the familie of *Hatzfeld*, Lord of *Wildenberg*, who shewed me an incredible number of stones, which he had voyded from his Kidneyes through the yard; who though he was then 60 yeares old, could voide stones as bigge as pease, and beanes, without much trouble; because his urinarie passages had bin long worne. and enlarged by the multitude of stones, which he voided.

An other.

I yet keepe at home in my study, a stone like a date-stone, which I tooke from a man of threescore, without cutting, though not without some paine, to him, yet with out danger of death, for he survived 6 yeares after, & often voided

voyded stones without much trouble.

But this being granted; yet the retention of the stone in the yard, is not so dangerous, as in the ureter; because wee can reach it better, with our Instruments, and medicaments, than if it was fastened in the ureter: and though all other wayes should fayle, yet wee can flye to the last refuge, that is, the Incision of the yard in the place where the stone is fixed, as shall be shewed at large hereafter.

If it therefore happen that the stone be retained in the yard; for a faithfull and careful Chirurgicalian, for his owne glory, & a large reward presently to appoynt incision, this I say becomes not a rationall, & faithfull Chirurgicalian, but all remedies are first to be applyed to bring forth the Stone without cutting, and if they bee fruitlesse, and the Stone abide unmoved, of two evils the lest is to be chosen, and in the end he must use incision as his last remedy.

The knife must be kept as much as may bee from the Urethra, because in the wounded place a hard scarre, will still remaine hindering the enlarging of the Urinarie passage.

Afterwards therefore, when other stones are to be voyded, the yard being cut in that part where the stone was, growes harder, and narrower, because of the cicatrice, & the stone is stopped againe, and a new Incision isto be ordered in the same, or a neer adjoyning place. Hence it often happens that the wound turnes into a Fistula; and

cannot be cicatrized.

But what inconvenience the Patient may suffer hereby, I leave it for every wise man to judge; seeing the seed, and the urine do both issue out of the Fistula; for which cause I have alwaies endeavoured to bring away the stone without Incision.

Therefore as often as the Chirurgian shall thinke that the stone will fall into the yard, as haveing already slipped out of the ureters into the bladder, hee must prepare, and open the way for it, keeping the lower Urinarie passage of the yard soft, and slippery; to which purpose the Clysters, Liniments, Cataplasmes, and Baths, described in the former Chapter, are usefull.

If then when the stone is detained in the Urinarie passage, thou art called to the sick man, thou shalt prescribe him a fit diet, of which because wee have treated enough, and enough, in the ninth, and former Chapter, it is here needelesse to speake more.

Afterward thou shalt apply unto him hot a bagg of that bignesse that it may cover all his privities, filled with the emollient hearbs mentioned in the former chapter, and boyled in water or new milke; the place affected being a little fomented, thou shalt take away the bagg, and annoynt the whole region of the *Pudenda*, the yard, lower belly and *Perineum* with the unguent described in the former  
Chap.

Chapter; afterward, thou shalt againe apply the bagg, & bee carefull that the affected part take no cold; for cold in these diseases is most pernicious; and it is requisite that two baggs be provided, that the cold one being taken away, an hot one may bee at hand for thy use.

If perhaps the Patient should desire to use the Bath, which in this case is most condu- cible, then anon when hee is come out of the Bath, & wiped with hot linnen; the Privities, the lower belly, and *Perineum* are to bee annoynted with the foresaid Oyntment warme, and the baggs afterward to be applied warme, and this course to bee continued till the stone appeare unto thee. But let the Chyrurgian while hee annoyns the yard, lift it vp gently with one hand towards the navill, and with the other hand drive the stone as much as hee can upwards toward the Glans, with care that he drive not the stone back into the bladder, but by all meanes mollifying, and making slippery the Urinarie passage to bring it out: to which end I use to take a sufficient quantity of hearbs prescribed in the former chapter, and boyle them in new milke, and a scruple of butter, and put the *Colature* into a pot or jarre that the sick man may hang his yard therein covertly; and as soone as this *Colature* begins to coole, it must bee changed, and an other be in readinesse for the same use.



By these unguents, and baths, the Urinarie passage is softened, and made slippery, that the stone may thereby the easier bee expelled. Nor doth it a little helpe if Oyle of sweete Almonds mixed with Oyle of Scorpions bee injected by a Syringe into the bladder, to the very place where the stone sticketh; for this injection hath a double use, the Urethra being not only mollified, and made slippery by the Oyle, but also in a manner enlarged by the ayre and spirit breathed in by a Syringe, and if the Patient would then endeavour to voyde both his Urine & the stone, the stone might slipp out more easily. This I have often observed in my Patients, especially in the venerable and discrete old man of Seventy, *Anthony Vetzarin* of blessed memory, whom six or seven yeares before his death I so happily cured, by Gods helpe, of the retention of his urine & stopping of the stone in the ureters and yard, that I never needed to use Incision; but his paine sometimes increasing, I gave him the Potion described in the end of the former chapter, by which himselfe and many other sick persons have found much benefit; for thereby the tormenting paine being allayed, the Patient would take some rest, nature be refreshed, strength recovered; and hence the expulsive faculty is quickened, and expelleth whatsoever is offensive to nature.

This I observed Anno 1621 at *Muratuen*  
in

in a man of sixty, of no obscure family, *Io-* An obser-  
*hannes Iacobus* of *Diesbach*; to whom (not vation.  
 neglecting Baths, Epithemes, Clysters and  
 and the like, though in vaine applied) in the  
 retention and suppression of his urine, at last  
 one evening at nine of the clock I gave the  
 prescribed potion, and when hee had slept all  
 night upon it and swett abundantly, his paine,  
 internall heat, and other symptomes well  
 abated; though, his strength being dejected,  
 till the sixt or seventh day after, hee could not  
 hold his water, yet by Gods blessing hee re-  
 covered his health, and lived till the ninth of  
 January 1627 current.

Now some Chirurgians, use to employ a  
 servant, to suck or milke the membrum virile,  
 attempting thereby to draw out the stone;  
 but besides that by this sucking, the passage of  
 the urine can not bee enlarged, but is rather  
 contracted, and the stone held faster, unles it  
 bee in the former part of the yard, this in-  
 convenience also followes, that thereby a-  
 bundance of blood, and humors are by vio-  
 lence drawne downe to the yard, and the e-  
 vill is made worse. It is better therefore to  
 insist and continue the prescribed medicines,  
 and to be carefull that the Patient bee not co-  
 stive, and to prescribe him a good diet.

The stone not giving way to these medi- How the  
 cines, wee shall attempt to breake it, as it may stone is to  
 bee done easily, if it bee a soft one. be broken  
 in the

*Ambrosius Parvus* that excellent and fa-  
 mous

How the stone is to be broken in the Yard.

mous Chirurgian, useth to this end a screwed pearcer, small, and sharpe, which ought not to bee made of steele, but slender Iron. That the *urethra* may not bee hurt, let the cannula be first thrust up to the very stone, and then let the Chirurgian, taking the yard with his left hand, in that part where the stone is inclosed, take hold of the stone with his thumbe and forefinger, & afterward the cannula being gently thrust downe by some attendant to the very stone, let the Chirurgian thrust the pearcer to the stone, twitting it round, & so the poynts thereof will by little diminish and breake it. This done, let the Oyle of sweete Almonds, and Scorpions, bee injected into the yard, and the use of the baggs and Liniments bee continued, till nature can expell the broken stones, and gravell together with the urine. The *Cannula* must bee made of fine silver, and the Pearcer of Iron, because steele may bee easily broken, and leave its splinters in the urinarie passage.

The Chirurgian ought to be carefull, lest in this boaring, and breaking, hee hurt the passage of the urine. If therefore the stone may bee reached with the Pincers, it is the best and safest way; because the stone may thereby at once be drawne out, and a sick man delivered without further trouble. The Pincer ought to bee made of thinn Iron, & the beake thereof not to exceede the biggnesse of a middleing quill; in the hinder part it should be made of

of strong and thick Iron, that the beake thereof may the better catch and hold what it hath caught. It must be round and light, annoynted with Oyle of sweete Almonds, or fresh butter, and not to be used cold, but warmed in hot water.

Let the Pincers be put into the yard as gently as thou canst, even to the stone: which that thou mayst doe the better, take the yard about the Glans with thy left thumbe and forefinger, and lift it up; but the Pincer being brought to the stone, commit the yard to some attendant to be held up; and thy selfe having a little opened the Pincers, take hold of the stone with thy thumbe, and forefinger of thy left hand, & drive the stone to the Pincers, that they may the better take hold of it and draw it out. The stone being drawne out, let some Oyle of sweete Almonds, or new milke be injected into the urinarie passage, that it may be brought to its naturall lubricitie. But if the stone hath bruised, exulcerated, or caused an inflammation in the Urethra, in lieu of Oyle of Almondes apply this medicine.

*Rx. Aq. Plantag. Rosar.*

*Fragar. ana. ℥ij.*

*Sem. Cydonior. contus. ℥ij.*

*Macerentur per horam in loco calido, postea fiat expressio, cui adde*

*C. C. usti & preparat.*

*Tutie preparat.*

M 4

Plum-

*Plumbi squamosi loti & preparati.  
Caphurae ℥ss. ana ℥j.*

*Misce.*

This medicine asswageth paine, suppresseth the Inflammation, and healeth the exulcerated parts.

There remaineth another meane, whereby the stone may be brought out of the Urethra with lesse paine, and danger than by Incision, or fraction by the pearcers, or pincers, that is by dilating the passage with a light Inflation. The Chirurgian then, having by his Syringe injected the Oyle of sweete Almonds into the yard to the very stone, that the passage may bee filled therewith, let him permit the Patient to rest halfe an howre, that the Oyle may thoroughly moysten, softē and lubricitate the stone and the Urethra, the yard being still covered with the Emollient bagg before described.

These things thus done, let the Chirurgian thrust the Cannula into the urethra, and having brought it to the stone, let him take the yard neere the glans with his left hand, and crush it strongly. The urethra then being a little enlarged by the breath inspired through the Cannula, with the fore-finger of his right hand let him gently drive out the stone, which if it can not be done the first or second time, let him not therefore give over, but with moderation repeate the former course to  
avoyde

avoyde paine. Every Fidler, Emperick, juggling Mountebank, or drunkard, is not fit for this worke; but a discrete, and skilfull Chirurgian.

### CHAP. XXVj.

*How the stone is to bee cut out  
of the Yard.*

**I**F the stone doth not give way to any Remedies, and cannot be driven out, so that by continuall retention of the Urine, the symptoms grow dangerous, and fearefull, Lithotomie is to be used, as the last remedie; wherein the Chirurgian againe, shall not first neglect to prescribe a fitting Diet; and then make choyse of a convenient place for the Operation.

Some Chirurgians make Incision upon the very stone, that is in the lower part of the yard, and middle of the Urethra; which is not to be approved: because the urethra there is scarce fleshy, and therefore the wound cannot be well cicatrized, but that as I have observed, Fistulaes may be remaining: for this reason, Incision is to be made neere the urethra, and in the carnous part of the yard, in manner following.

The Patient being layd upon his back, place thy selfe on his right hand, and with the  
thumb

An error  
of some  
Chirurgi-  
ans.

thumb, and fore-finger of thy left hand, take hold of his yard; yet so, as thy hand may lye upon the *Os pubis*, and the yard laid upon thy fore-finger may hang out, and be pressed downewards, with thy thumbe, towards the Belly; yet the stone, may lye fast upon the upper part of the fore-finger, and then order the Incision, neere the urethra, by the length of the yard, till thou mayst reach the stone, with the point of the razor. If then the stone (because the skinne distended in the upper part, doth rayse thy fore-finger, his yard, and stone together upward) doth not voyde of it selfe, it is to be drawne out, with an Instrument of Art for this purpose. If any flux of blood ensue, the Chirurgian is to haue a Tent ready dipt in the white of an egge, and dressed with the powder to stop blood, which wee haue described cap 10. to put it into the wound, which hee is also to cover with the Boulster imbided in the yolke of an egge, and to bind it up. At the first opening, let him annoint the belly, and inguina of the Patient, with the Oyles described in the beginning of cap. 20, and dresse his Tents, and Emplasters with the Digestive described in the same chapter, and so open him twice a day. If at last hee would apply a balsame to cicatrize the wound, it will not be amisse. But if any paine, and flux of euill humours fall upon the yard, the following Cataplasme may

may be applied hot.

℞. farin. hordei ꝑ ij.  
Pulv. Rosar. rubr.  
Balauft. ana ꝑ i.

*Coquantur cum q.s. aqua Parietariae ad formam Cataplasmatidis, addendo sub finem Oxymelitis simpl. ꝑ j. cum vitello ovi unius.*

That the urethra may not grow narrower in the place whence the stone was cut out, or proud flesh grow there, and afterward afflict the Patient, it is requisite that the Chirurgical thrust into the yard a waxe candle, or Leaden fillet annointed with *Ol. Diapompholigos*, or the Emplaster *de Ranis*, and renew this Operation, as need requires.

CHAP.



## CHAP. XXVIj.

*How they are to be handled, from whom the stone cannot be taken away for its biggnesse or other causes.*

**B**Ecause it happeneth that the stone in the bladder, is sometimes so bigg that it cannot be drawne out, without danger of death, and therefore it is best not to meddle with it, that is to appoint no Incision for it, as *Avicenna* and *Lancfrancus* write, and that excellent *Medico-Chirurgus Ioh. Andreas. à Cruce* adviseth *lib. 5. tract. 3. c. 3.* and in his *Officina Chirurgica*; lest the Patient should dye, or a *Fistula* remaine in the place affected, by reason whereof he must spend the remnant of his age in great misery; and because some sick people are of such dejected timorous spirits that they die of meere feare; and it becomes not a pious and faithfull Chirurgian (as hath bin shewed els-where) to shorten the life of any one; it is therefore needfull, that I hereunto annex the manner how such Patients are to be handled.

Thou shalt exhort him to Christian patience, and shew him that the Originall cause of this, and all other diseases, afflictions and griefes, is partly from our selves, partly from God our heavenly Father, for the scripture hath said, there is no evill in a Citie which  
 God

God hath not done: which notwithstanding, is to be piously understood, and with a distinction.

The Spirituall, præternaturall, and sometimes the naturall cause of all Sicknesse, is from our selves, and in our selves. The Spirituall, and præternaturall cause, is the corrupted nature derived from *Adam* to our selves, because wee are conceived, borne, grow, and waxe old in sinne, yea, because our whole nature, life, and Actions are inclined to sinne, and so deserve not only a Temporall but Eternall punishment.

The naturall cause of Diseases, is caused in us by our inordinate lives, by drunkennesse, and the like, as shall be shewed at large in its proper place.

That which I before affirmed, *viz* that there is no evill in a Citie, but the Lord hath done it, is not untrue, though it be spoken to another end. For because the mercy of God towards man-kind is so great, that God from the beginning appointed his most beloved Sonne should dye, as a Sacrifice, and propitiation for sinne, that man might be saved; and nothing uncleane, and polluted with sinne can communicate, and partake of his Kingdome: therefore sicknesses, afflictions, and miseries are layd upon us to this end, that by them wee should be brought to repentance, and purified like Gold in the fire. As there-

therefore a skillfull Artist will not suffer his Servant to take the Gold out of the coales, till it be well purified, and fit for his purpose; so God, our Heavenly Father, will not permit the sick man, or Physitian, to shorten, or cut of the thread of life in the greatest torments, griefe and miseries, but will punish such impatient people as refuse to take up the *Crosse with Christ*, and by many tribulations to enter into his Kingdome. Let the sick man therefore alwayes remember that sentence of the Prophet; *Lord, I will beare thine Anger, for I have sinned against thee*: Helpe me, behold my infirmitie, and give me patience, and constancy in all things.

But if God will not spare such sick people, as are driven to impatience by torment, how will hee deale with those rash Quacksalvers, and Impostors, who though they know the Patient must die, if hee be cut, are nevertheless, so giddy-headed, that for a sordid gaine, they sleight the matter, bewitching the Patient, with magnificent words, and large promises, till they have brought him to the slaughter? How, say I, shall they bee dealt with? They will make an ill account of their actions before God; yea, their owne consciences, will accuse them before his Tribunall.

Let no pious and honest Chirurgian therefore, in this, and other dangerous Operations, where the Patient may survive some time  
with

with his disease, endeavour with vaine promises to perswade him to be cut, nor extenuate the businesse, but waite, till the Patient, or his Kinsmen call, and sollicite him to it; lest willingly, for filthy lucre, hee cut of his dayes.

But in such a sicknesse whereof the Patient must needes dye without helpe within few dayes, let him labour all hee can to preserve him. For example. Anno 1614 when I was called to *Coper*, and sollicited to cut of the thigh of a childe (whome I have mentioned *cent. 4. Obs. 91.*) above the knee, I undertooke the Operation, when I saw the child otherwise could not live above five or six dayes: but the Operation gave mee some hope, and God so blessed it that hee survived in health to this yeare 1626. and perhaps to this hower.

The case of the stone is otherwise; for hee who is diseased therewith, may carry it about him for many yeares, and doe good service to God, and his Countrie; as I have knowne many, who in this miserable state, and torment, haue lived to an old age.

This Operation then being dangerous in elder people (especially when the stone is bigg) for two causes: first, because their nature is decayed, and growne weake; secondly because the skin, muscles, veines, and other parts which should bee enlarged in the Operation

peration, through old age are withered, dryed and deprived of all juyce, and natural humor; therefore the stone is harder to bee taken away from old people than the yonger sort, as hath beene shewed more largely *cap. 10.* Whosoever therefore refuse to submit themselves to the Operation, and desire a Palliative cure, let them consider the things following.

What is to be observed by such as have the stone.

First, it is required that such as have the stone, observe an exquisite diet, and refraine and beware of all such things which may augment the stone or make it bigger. They shall therefore avoyde all grosse, crude, and slimie meates. All Spices, except Cinnamon, Saffron, Mace, and Nutmeg, are hurtfull for them; for thereby the efficient cause of the stone is nourished: strong wines, immoderate exercise of the body, and in one word, all things that heate the body, are naught for them, as the Reader may see more largely *cap. 9.* For ordinary drinke, they may use white wine of a yeare old; but of no astringent qualitie. Such as are compelled to use beere, must not drinke it new, but well boyled and purged, or they may provide for themselves the Decoction of Agrimony, and Veronick, with Licoras; as hath beene sayd *Cap 9.* and use it.

The Emulsions of sweete Almonds prepared as before, are very healthfull for them;

Ol. Mentha,  
Cydonior. ana. ℥ ℞.

Dissolvantur omnia lentissimo igne & percolentur; postea admisce Cera nova ℥ j ℞.

Pulv. Mastic.  
Oliban. ana. ℥ iij.

Gariophyll.  
Nuc. moschat.

Rosar. rubrar. ana. ℥ j.

Misce, fiatque Cerotum s. a. addendo Ol. Mentha, q. s.

It is also required in this palliative cure, that the Patient should a little coole his Liver, Kidneyes, and Urinarie passages, and resist præternaturall Heate, which is done aswell by inward as outward Medicines.

Amongst internall medicines, gentle Emollient Clysters, and purging Lenitives, are principall: for the body being purged by degrees, & the obstructions of the inward Bowells taken away, the refrigeration and restoration of the inward Bowells must needes follow. But amongst the Purgatives, such things as are too sharpe and violent, are to be carefully avoyded, lest by them other excrementitious humours should be drawne downe to the Kidneyes and Bladder, from the Upper parts of the Body: in his case, Manna, Syr. rosat. solut. comp. Syrup de Cichor. cum Rhab. or the Magistrall Syrup described cap. 9. are sufficient.

Of Purgatives.

Of Cassia

Some much commend Cassia to those which have the Stone, and some have used it to good purpose: yet I would have the Industrious physitian know, that others have used it with ill successe, and thereby increased the Maladie. The valiant and noble *Zacharias Geizcofter* of *Geilenbach* complaines in an Epistle dated *May 18 1609*. Saying that after the use thereof he was troubled with a scalding Urine.

*Peter Pigray* the famous Chirurgian to his Majestie of France, confirmeth the same, l. 7. cap. 4. where he writeth that Cassia is naught for such as have the Stone. *Anno 1623*. a young Gentleman at *Basil*, aged 22 yeares, of the familie of the *Burckhards*, being come to visit me, because of the singular love betwixt his Father and my selfe, told me, that in summer in the Dog-dayes, being in *Italie*, he was taken with *Febris Continua*, and the physitian giving him Cassia, and that in no common Dose, as from  $\zeta j$ . to  $\zeta j \text{ss}$ . not working by degrees, he increased the dose to  $\zeta ij \text{ss}$ . whence such a flux of Urine followed, that as oft as he made water for three dayes together, he felt it so sharpe, that it seemed like a red hot iron wire drawne through his yard. By this it appeares, what is to be thought of the use of Cassia for such as have the Stone. Let the foresaide medecines therefore suffice, amongst which the Magistral Syrrup described cap. 9. ministred with  
Succory

Succory, and Sorrell waters, is singularly helpfull.

There is good hope of helpe, for such as have the stone, by the use of Clysters: because they carry away the phlegme and filth from the lower belly, drawe the noxious humours to the guts, which would otherwise flowe to the Kidneyes, and Urinarie passages, mollifie and lubricitate the Ureters, asswage paine, and coole the Inward Bowells: let the Patient therefore use this Clyster often.

℞. Rad. Althea, ℥ss.

fol. Althea.

Malv. ana. m℥ss.

Parietar, m. j.

flor. Camomill.

Melilot.

Sambuc. ana m℥ss.

sem. Lini,

Fenugrec.

Sem. Anis.

Fœnic. ana. ℥ij.

Coquantur in s. q. aqua, f. decoctio ad consumptionem tertie partis: in ℥j. Colatura dissolve

Electuar. Diacathol.

Mellis Mercurial. ana, ℥ss.

Ol. Lilior. alb.

Anethin. ana. ℥j.

Vitell. ovar. num. ij.

Salis ℥ij. Misce, f. Enema.

If he still complaine of paine, and heate of the  
N 3 Urine

A Clyster



Urine, and a Clyster be to be injected presently; then take of new milke ℥j. powdered Sugar *cochl.* ij. yolkes of eggs. *n.* ij. sweet butter, and Oyle of sweet Almonds *ana.* ℥j. *Misce f. Enema.* Renew it as oft as neede requireth. If you would not have him to retaine it long, add thereunto Salt ℥j. The frequent use of this Clyster cannot be offensive unto him. But in purging, a moderation is to bee used, and the Patient not to be troubled unseasonably, for the reasons before mentioned.

Furthermore, they which have the stone, must also sometimes take something to coole the inward Bowels, especially the Liver, Kidneyes, and Urinary passages: to which end, this following Julep is very proper.

A Julep.

℞. *Aqua Cichor.*

*Endivia, ana* ℥ij.

*Syr. de succ. Citri,*

*Acetos. ana* ℥j.

*Misce pro duabus dosibus.* or;

℞. *Aqua Cichor.*

*Parietar.*

*Acetos. ana* ℥i℥.

*Syr de Althea Fernel.* ℥j.

*Misce pro duabus dosibus.*

If these distilled waters please not his palate, this following potion may be made for him.

℞. *Rad Petroselin.*

*Acetos.*

*Liquirit. ana ℥ij.*

*Herb. Parietar.*

*Herniar.*

*Veronic. ana m.β.*

*flor. 3. Cordial. ana P. j.*

*Coquantur in ℔ iij. aqua, ad dimidie partis  
consumptionem. In ℥ iij Colatura clarificat.  
dissolve*

*Syr. de Nymphaea,*

*Succ. Berberor. ana ℥j.*

*Misce pro duabus dosibus.*

Let the Patient take these potions fasting in the morning, and two howers before Supper, that is about three of clock in the afternoone. Some would have them to be taken after Supper; but so they would hinder Concoction: yet if paine enforce it, of two evils the least is to be chosen, as shall be shewed hereafter.

They which sometimes can use sowre <sup>Of sowre</sup> sauces, cannot but finde much good there- <sup>sauces.</sup> by; for these coole the Liver, and Kidneys, cleanse the Ureters, and Bllder of all slyme, & hinder the generation of the stone, as the learned *Tabernemontanus* witnessets. in his *Thesaurus Aquarius* in sundry places. But for the use of these sowre sauces, the Patient ought to know the Constitution of his owne body, or advise with some learned Phisitian thereupon: for if the breast or Lungs, be never so little perished, they

are not to be used, for the maladie increaseth, and waxeth worse thereby.

Outward remedies  
To coole the Liver outwardly, the sick Person may once, or twice a day, anoint his right side, and Loines, with this Liniment.

A  
Liniment

℞. *Vnguenti rosae Mes. ℥ij.*  
*Ol. rosae.*  
*Nymphaea, ana ℥ss.*  
*Capsura dissolut. in acet. rosae. ℥j.*

*Misceantur in mortario, fiatque Linimentum.*

Or hee may apply the *Emplastrum Santalin* to the Liver, and renew it once each other day.

I passe over other Topicks, and Epithemes, made of distilled waters, vineger, and other coolers, because they are not without danger; for as they repel the præternaturall heate, they some-time suffocate the naturall: and therefore the Patient must desire the counsell of a learned Physitian, that all thinges may be applyed rightly.

Of opening a veine  
To suppress the inward distemper of the Liver, phlebotomy is very helpfull, which neverthelesse can not be made without advise of the physitian, who is to respect the strength and constitution of the Patient; for if he be weake and feeble, as many Calculous people are, a veine is not

to

to be opened ; or if through old age ,  
or the greivousnesse of the sicknesse , the  
body be not plethoricke , Cacochymous,  
and full of evill humours. Bleeding is not  
convenient ; but it will be better to purge,  
and cleanse the Body with Benedictees ; as  
hath bin shewed , cap . 9 . The veine is  
to be opened in the right Arme , unlesse  
the Patient feele some notable paine on  
his left side, and then it is to be done in  
the left Arme:

If the stone fall downward to the  
neck of the Bladder , and stop the Urine,  
as it often doth, and cause great paine ,  
then all meanes must be used to repell the  
stone from the necke of the Bladder, and  
asswage the paine : and because it oft hap-  
neth, that winde and the dried excre-  
mentes of the Guts presse both the blad-  
der and stone downward toward the  
neck , one of the Clysters described for-  
merly in this chapter , is to be injected .

The first Clyster is to be a little  
quickned , that it may presently bring  
forth the wind , and retained excrements ;  
but the rest may be kept longer .

Some in this case put the Patient into  
a Bath , made of emollient Hearbes , which  
doth in some manner mitigate paine ,  
make the Urinarie passages soft , and slip-  
perie , and procure Urine ; but if the Pati-  
ent sit upright in the Bath, the stone falleth  
downe

downe to the neck of the Bladder, and stoppeth the Urine: It is better therefore that the Patient should be laide upon his backe, that his belly may be higher than his head, and so the stone may returne upward.

In lieu of the Bath, you shall applic unto him a bagge filled with the following Herbes bigg enough to couer the lower Belly, to the navill, the *Inguina*, and *Perinæum*, and renew it as neede requireth.

A  
Saculus:

℞. *Rad. Lilior. Alb.*  
*Althea, ana. ʒ ʒ*  
*fol. Malva,*  
*Althea,*  
*Branca ursin. ana. m. j.*  
*Parietar. m. j ʒ.*  
*flor. Melilot.*  
*Sambuc.*  
*Chamomill. ana. m. j.*  
*sem. Lini,*  
*Foenugrac.*  
*Anis. ana. ʒj.*

*Incidantur et contundantur omnia grosso modo pro Sacculo.*

The Bagge is to be boyled, in milke or water, and to be applied hot; and that being removed, the Belly, and Pudenda are to be annointed with this Liniment.

A  
Liniment.

℞. *Butyr. recent ʒj ʒ.*

*Ol. Amygd. dulc.*

*Scorpion, ana. ℥j. Misce.*

The following *Anodynous* potion, may  
be also administred unto him.

Apotion  
after sup-  
per.

*Rx. Aq. Lactuc. Paritar ana ℥jss.*

*Syr. de Papaver. ℥j.*

*Confect. Alkerme ℥j.*

*Misce. f. Potio.*

Let it be given him two howres after  
Supper; or let him drinke this Emulsion.

*Rx. Amygd. dulc. decorticat. ℥ij.*

*sem. Papaver. alb. ℥iiij.*

*frig. quatuor Major. ana. ℥j.*

*Cum ℥b ij. decocti sequentis f. Emulsio; ad-  
dendo.*

*Syr. de Althea Fernel.*

*Nymphaea, ana. ℥iiss.*

The decoction for the Emulsion is this.

*Rx. Horidei decorticat.*

*Vvarum passular. exacinat.*

*Liquirit. mundat. & incis. ana ℥j.*

*fol. Veronie.*

*Parietar.*

*Herniar. ana. m. ss.*

*Cum ℥b iiij. aqua fontan. f. decoctio ad  
ad tertia partis consumptionem.*

But if the stone cannot be driven backe  
from the necke of the Bladder by these  
meanes

meanes, nor the paine asswaged, Let the Chirurgian, or some other versed in this businesse, drive it backe with his Forefinger, annointed with oyle, or sweete Butter, and put it into the Fundament.

If the stone can neither be put backe with the finger, nor the Urine procured, let the Chirurgian put it back gently with one of his Instruments, or Catheters, annointed with oyle of sweete Almonds, and thrust through the yard into the Bladder, that the Urine may find an issue through the Cannula, and all the sicke persons paine may be abated.

I have knowne some Calculous people, which by this Palliative Cure have lived many yeares, to the great good of their freinds, and Country.

*Anno 1625*, a noble man in France comming from Italic, lodged here at the signe of the Crowne, who for a whole day, and the night following could not make one drop of water: I being called in the morning, and by my Instrument having given it a passage, He himselfe put a waxe Candle into his yard, mounted on Horsebacke, and set forward one his journey, shewing that the waxe candle did not trouble him, though he was riding: But this experiment is not dangerlesse, because by this meanes, the Urinary passage may be hurt, and exulcerated.

*Peter*

*Peter Pigray* 1. 7. chap. 4. testifieth, that himselfe knew a Noble man, who was troubled with the stone 25 yeares together, and as oft as he was to make water, applyed the Catheter with his owne hands, to open the passage.

*Theodoricus lib. 3. cap. 44.* writeth, that the stone may be so thrust to the Bottom of the Bladder, that it may sticke there 40 yeares together; which I durst not have inserted here, had not *Guido de Cauliaco Tractat. 6. doct. 2. cap. 7.* confirmed it.

But it being granted that *Theodoricus* wrote somewhat largely, yet it is certaine, and I have observed it in many, that by meanes of the saide Cure they have lived many yeares. Since then as Christ our Head and Saviour hath taught us, by many miseries and afflictions wee must goe to æternall rest; let no sicke man, if the stone cannot be cut out, without danger of death, by reason of its biggnesse, out of impatience breake of the thread of his life; but with a Christian patience and constancy waite for his delivery by the great physician of physitians.

These things at the request of some freinds I would not conceale from the Ingenuous reader.

God of his mercy grant that grace to all Chirurgians, that they may order them

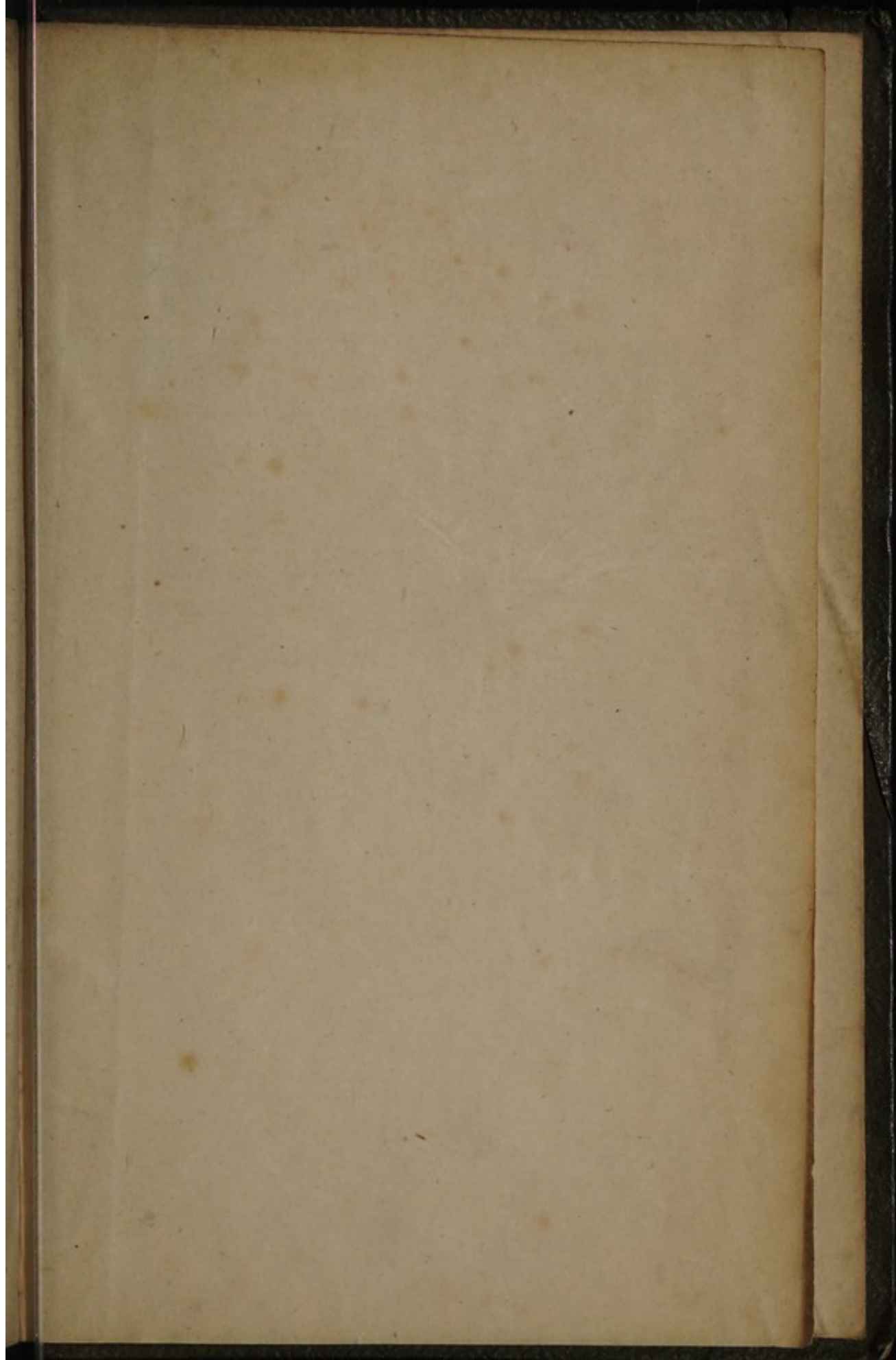
The Conclusion.



them, to the Glory of his name, the profit of their Patients, and their owne salvation. And that thou mayst enjoy thy desire, and God almightie may blesse thy Handyworke, thou shalt crave his assistance in all thy actions; live an honest, sober godly, modest, and chaste life; more regard the health and safety of thy Patients, then thine owne Good; and so will God preserve thee in this life, and afterwards of his mercy give thee Eternall Happinesse.

*Soli Deo sit Gloria.*

FINIS.



1800 - 1801 - Feb.

