

**An account of some new experiments and observations on Joanna Stephen's medicine for the stone. With some hints for reducing it from an empirical to a rational use. With remarks on Dr. Hale's experiments on the same subject; and some additional experiments on the comparative efficacy of dulcified spirit of nitre, spirit of salt, and the juices and decoctions of onions, leeks and cellery, as lithontripticks. Presented to the Royal Society Jan. 14. 1741-2 ... To which is subjoined, An account of the effects of soap-leys taken internally, in the case of James Jurin, M. D. [by himself] / [John Rutty].**

### **Contributors**

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1540  
T E N  
C A S E S

Of PERSONS who have taken

Mrs. *Stephens's* MEDICINES

FOR THE

S T O N E.

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WITH AN

A B S T R A C T

OF SOME

EXPERIMENTS,

TENDING TO

Illustrate these CASES.

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L O N D O N :

Printed for S. HARDING, at the *Bible* and  
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WITH AN  
ABSTRACT  
OF SOME  
EXPERIMENTS  
TENDING TO  
Illustrate these Cases.

LONDON:

Printed by S. Haughey, at the Bible and  
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## ADVERTISEMENT.

*IT is now more than a Year that I have had the usual Symptoms of the Stone in the Bladder, with some Suspicions of that in the Kidneys. This made me listen to the Accounts of Mrs. Stephens's Medicines, and upon inquiring particularly into some Cases, I was encouraged to try them. I have since been much more particular in my Inquiries, and here offer Ten Cases to the Public, with an Abstract of some Experiments, taken from a Journal which I kept of them. The Nine first Cases are sign'd by the Gentlemen themselves, the last rests upon the Authority of the Persons therein named. As to myself, I am neither an Evidence against the Medicines, nor for them, excepting, that since the Use of them, I have voided several angular Bits of Stone, in so soft a State as to crumble easily. I still continue to take,*



## ADVERTISEMENT.

*take, and if ever my Case should be of Importance enough to be known, I shall not fail to communicate it.*

*My Design in printing these Cases and Experiments, is to engage the Public to purchase the Discovery of the Medicines from Mrs. Stephens. She offers this at Five thousand Pounds, and is ready to submit the Effects of the Medicines which she discovers, to any Examination, which Gentlemen of Worth and Skill shall propose. It is easy to see how much I am concern'd to know what those Medicines are, which I take daily. But the Benefit which many Persons have plainly receiv'd from them, in painful and dangerous Cases, and my Opinion of their Efficacy in dissolving Stones of the Kidneys and Bladder, would render me inexcusable, if I did not use my best Endeavours to make them of general Service.*

March 6, 1737-8.

DAVID HARTLEY.



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T E N  
C A S E S

Of PERSONS who have taken  
*Mrs. Stephens's* MEDICINES  
FOR THE  
S T O N E.

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I.

*The Case of the Right Reverend the  
Lord Bishop of BATH and WELLS.*

**A**BOUT Five Years ago he felt a  
Soreness in his Left Side, after having  
rode Four Days together, and made  
Water, which was first coffee-colour'd, and  
then bloody. These Complaints went off in a  
short time ; however, he became, after this,  
subject to make bloody Water upon Riding :  
He felt once a most violent Pain along the  
B Region



Region of the Right Ureter; it lasted only for a Moment, and happened during a Fit of Cholic, occasioned by eating Strawberries. About Two Years ago he was obliged to forbear riding, and could hardly walk without making bloody Water; had Pain in making Water, and a Forcing to go to Stool at the same time, but no Stoppage: He began Mrs. *Stephens's* Medicines in *April* last; they increased the Pain in making Water for some time; his Water became turbid at the time of making, had ropy fetid Matter in it, deposited a thick heavy Sediment, and many small Flakes and Fragments of Stones were voided with it in a soft State: In Five or Six Weeks he grew much better, and was able to go over the Stones in his Coach: His general Health was also much improved. In the Beginning of *July* he had a Return of the Pain in making Water, with a sudden Stoppage now and then: Upon this he voided several Pieces of Stone in a soft State, with one pretty large Piece, Part of which was soft and white, Part brown and hard, and it gave a little Pain in passing: After this the Pain and Stoppage in making Water went off intirely. In *September* he went into the Country, where he often rides a trotting Horse without any Inconvenience; and is free from all Complaints, excepting that he has now and then some uneasy Sensations in the Region of the Kidneys: He has continued the Medicines till a little while ago; but his Water has been in general perfectly clear, during the Use of them;



them; whereas it has twice been turbid upon discontinuing them, and deposits a red Sediment, which dries into a stony Substance.

Feb. 11, 1737-8.

J. Bath and Wells.

## II.

*The Case of Mr. Binford, at Mr. Cameray's, in Tokenhouse-yard, Throgmorton-street.*

**H**E had a Stone taken out of his Bladder by the Operation, when about Ten Years old; has had the Symptoms of a Stone in the Bladder now again, for about Six Years. A Surgeon at *Exeter* examined him twice by the Finger in the Anus, and found both times in the most evident manner a Stone in the Bladder, which he imagined to be as big as an Egg. Mr. *Binford* perceived the Motions of this Stone during the Examinations, and made bloody Water after one of them. He began Mrs. *Stephens's* Medicines about the middle of last *August*, and in a short time after voided many white Scales, and much brown Grit in a soft and rotten State: Since this he has voided many irregular Shells of Stone, of a considerable Size, and of such a Thickness, as to consist of several Coats, from Two to Six in Number:



Many of these, when voided, are covered with a Whiteness, which being rubb'd off, the Shell appears to be brown. On the 30th of *January* he had a Suppression of Urine; Mr. *Hawkins* passed the Catheter then, and found a Stone in the Bladder, which he told Mr. *Binford* he believed to be very small, tho' he would not presume to be certain. Mr. *Binford* has voided many more Pieces of Stone since this, and Mrs. *Stephens* is in daily Expectation of his being perfectly well.

*Feb. 19, 1737-8.*

*Tho. Binford.*

### III.

*The Case of Mr. Bolton, at the Sun and Dolphin in Cheapside, contained in a Letter directed to me.*

*Sir,*

TOWARDS the latter Part of my Life, when in my Fiftieth Year, about 1720, I was forepained with the Stone, until I voided a large one; at several times since about a Dozen; Part came away after a little riding, and then I made Water like Coffee: But I imagine, one of the largest might stay behind; for in 1735 I began to be greatly afflicted; could not endure to ride, or bear a Coach: When I have been making Water, it often stopped



stopped on a sudden, causing much Pain; and no Person in the Country could give Relief, tho' I took a many odd Things. Reading the Papers, I observed, some Specificks for the Stone were advertized, one a Powder, the other a Liquid: I got 'em, and try'd each; but was not able to go thro' with either of 'em; being of a forcing Nature, increased my Pain: Then was advised to smooth palliating Medicines, yet Pain still continued, and excessive; made me begin to think of coming up to *London* to be cut, if it might be safely done at my Age: At that time the News informed us, that the Bishop of *Bath* and *Wells* and others were cured by taking Mrs. *Stephens's* Medicines: I was then more inclinable to come: When I set out, my Thoughts were to undergo the manual Operation, and had wrote to Mr. *Chefelden* about it: When I arrived in *London*, and consulted with some Friends, it was thought, as I was in my 68th Year, the safest way to take Mrs. *Stephens's* Medicines; and accordingly on the 18th of *July*, 1737, I began with 'em, taking Three Powders, and Three half Pints of Liquid every Day: What Effect, and how they did operate, you will see by the following Diary, which I kept as exactly as I could, considering the Pain I had by times; which yet prompted me to keep strictly to the Medicines, believing, that by so doing, I should the sooner be made easy, and took the Liquid Four times a Day for some Weeks.



*A DIARY, as I took the Medicines.*

1737.

*Jul.* 18. Began to take Three Powders, Three half Pints of a Liquid, Three times a Day.

19. The same.

20. The same. Brought away a slimy mucous Matter into the Pot; much Pain.

21. Continued to bring such Stuff away; great Pain.

22. The same.

23. The same.

24. The same.

25. Foul Water.

26. Thick Water.

27. Foul Water.

28. The same.

29. The same.

30. The same.

31. Water clearer,

I was in great Pain  
all this time.

which made me send to *Mrs. Stephens*, who answered, I must have Patience, and begin to try Four half Pints a Day.

*Aug.* 1. Water not so foul. I began with Four half Pints, continuing the Three Powders.

2. The same.

3. Water clearer.

4. Made much Water, and clear.

5. The same.

6. Less Water, and slimy Matter.

All this  
time ea-  
sier than  
before.

*Aug.* 7.



- Aug. 7. Less Water, and slimy Matter. } All this  
 8. Water a little foul. } time ea-  
 9. The same. } sier than  
 10. Water foul and whitish ; much Pain. } before.  
 11. Water whitish, and vèry great Pain  
 when I made Water.  
 12. Water not clear, and great Pain.  
 13. Water slimy, with a white Sedi-  
 ment, very great Pain.  
 14. Clearer, with a little Sediment, but  
 grievous Pain.

*Above are Twenty-eight Days, in which time  
 the Medicines took little Effect, and much  
 Pain almost every Day.*

15. Water a little foul, some Sediment ;  
 very grievous Pain.  
 16. Water clearer, some white Sediment ;  
 most cruel Pain.  
 17. Water foul, a slimy Sediment ; very  
 great Pain.  
 18. Water the same ; very great Pain.  
 19. Water the same ; great Pain.  
 20. Water slimy, with Sediment ; fore  
 Pain.  
 21. Water the same ; very grievous Pain.

It was so intolerable, I sent for  
 Mrs. Stephens, to acquaint her, I  
 was not able to endure : She said,  
 I must have Patience, I should in  
 a little time be easier ; and I might  
 take an Opiate to make me rest in  
 the Night, and forbear to take the  
 Fourth



Fourth half Pint, supposing it might be too hard upon me.

*Aug.* 22. Water foul, with a slimy Sediment; great and grievous Pain: I began to filter it.

23. Water foul, as Yesterday; this Night violent Pain.

24. Water, as Yesterday, with great Pain.

25. Something foul, a little Sediment; very cruel Pain all this Night.

26. High-coloured, little Sediment; great Pain.

27. A Stoppage sometimes, high coloured; great Pain.

28. A Difficulty to urine, a little Sediment; very great Pain.

29. A Stoppage, little Sediment; great Pain in making Water.

30. As Yesterday.

31. A Stoppage, great Pain when I made Water, and continued.

*Sept.* 1. Thick Water, high-coloured; excessive Pain this Night.

2. Thick Water, a Stoppage; great Pain.

3. High-coloured, a Sediment, and much Pain.

4. The same, with great Pain.

5. A Stoppage sometimes, high-coloured; great Pain at making Water.

6. High-coloured, a Sediment, with very great Pain.

7. Made little Water, but with Pain; an easier Night.

*Sept.* 8.



Sept. 8. Made little Water, Pain in making,  
but easier To-day than a great  
while before.

9. Water clear, no Sediment, Pain  
much abated.

10. Made more Water, and clear, pretty  
easy this Day and Night.

11. Made much Water, and clear, pretty  
easy, little Pain. This Night  
made a larger Quantity of Water,  
little Pain.

12. Clear Water, no Sediment, not much  
Pain. Night the same.

13. Water a little foul, and some Pain.  
Night the same.

14. Water more foul, a Sediment, with  
more Pain. Night a Stoppage,  
little Water, and foul with a Se-  
diment.

15. Came foul, and a Sediment, with  
some Pain. Night the same.

16. Was a little foul, no Sediment, but  
some Pain. I took the Elixir for  
sleeping. Night made much Wa-  
ter, and clear, but little Pain.

17. The same.

18. The same. Night the same.

19. The same. Night made much Wa-  
ter, no Sediment, some Pain.

20. Water clear, not so much as Yester-  
day, little Pain. Night the same.

21. Clear Water, with more Pain than  
Yesterday. Night not so much



Water, but clear, and greater Pain.

Sept. 22. The same, with more Pain. Night much Water, and clear, with great Pain.

23. The same. Night the same, clear Water, but with more Pain.

*Having for above a Week past made clear Water, and with much Pain, and nothing coming away, made me begin to think of leaving off the Medicines; yet I was sure the Cure was not finished, and having a Doctor, who happened to be here, then advised me to take 'em a Fortnight longer, so I continued to go on.*

Sept. 24. Made clear Water, moderate Quantity, with sore Pain. Night was foul Water, little in Quantity; some Pain.

25. Water foul, not much; in which Two little Bits of the Stone; with a little Pain. Night but little Water and foul; Pain easier.

26. The same. Night the same; but often Pain.

27. Much the same; with some Pain. Night little Water, foul; Pain easier.

28. Still but little Water, and foul; not much Pain. Night the same.

29. The same; with Pain when I made Water. Night the same.

Sept. 30.



*Sept.* 30. But little Water, not very foul: This Day and the Night following a great many Bits of Stone came away, being the Eleventh Week; more has come away this Week, than in any one Week before.

*Oct.* 1. Moderate Water, and clearer; several Bits came away, pretty easy. Night a few Bits came away; not much Water, clearer.

2. Water began to be clearer; fewer Bits; some Uneasiness. Night Water almost clear; and few Bits, with a little Pain.

3. Water clear; Pain sometimes; no Bits. Night but little Pain; no Bits.

4. The same. Night the same.

5. Much Water, and clear; seldom Pain; no Bits. Night not much Water, clear; no Bits; nor Pain.

6. Water clear; few Bits; no Pain. Night Two or Three Bits; no Pain.

7. Water very clear; with Pain when made it; no Bits. Night clear Water, with a Stoppage, that I could scarce make any; and with Pain.

8. Clear Water, with some Pain; Two or Three Bits. Night Water very clear; sharp Pain sometimes; Two Bits.



- Oct. 9. The same ; some little Bits. Night the same ; no Bits worth Notice.
10. The same, with frequent sharp Pain ; no Bits material. Night foul Water, with Pain ; no Bits.
11. Clear Water, with some Pain ; Three or Four Bits. Water clear, a little Pain ; some Bits.
12. A Pain when I make Water ; a few Bits. Clear Water ; some little Bits.
13. Clear Water ; no Bits. Night a Stoppage and Dribling ; very few Bits ; small Particles.
14. Clear Water ; no Pain but when at Pot ; a few small Bits. Night the same ; some of the smallest Bits.
15. Clear Water ; Pain at making ; few small Particles. Night a Stoppage and Dribling ; little Pain ; some small Bits.
16. Clear Water, what I made, but had a Stoppage of Urine ; with great Pain when I made Water ; which was but a few Drops at a time ; but several Bits came away. In the Night I rose often to make Water, but could not, which caused very great Pain ; but towards Morning making a little, several Bits came away.
17. Water clear, with Pain ; but several large and little Bits came out, one the



- the largest yet. Night a Stoppage often, with great Pain ; Two large and several lesser Bits came away.
- Oct. 18. A Stoppage, and Pain ; but several Bits, one larger came away. Night little Water, often a Stoppage ; not so clear ; some Bits.
19. Clear Water ; a Stoppage with Pain ; no Bits worth Notice. Night a little Water, being a Stoppage ; a few little Bits.
20. Clear Water, little Pain ; some Bits. Clear Water, a Stoppage, and Pain *in Pene* : Two large Bits sticking came out next Day.
21. In the Morning made me easy, and urine more freely ; a few small Bits came away. Night clear Water, pretty easy ; some few small Bits came away.
22. The same ; only a few Bits came away. Night the same ; Two pretty large Bits came away.
23. Water clear, uneasy when I made it ; some little Bits came away. Night much Water, clear, easy, Two Bits came.
24. The same ; Two or Three small Bits. Night clear Water ; Two larger Bits ; some sticking caused Pain.
25. Water clear ; no Pain but at making Water ; no Bits. Night a Stoppage ;



page; made Water with Difficulty ;  
no Bits.

*Oct.* 26. Clear Water; some Pain in *Pene* ;  
no Bits this Day. Night Water  
foul, with Pain *Pene* ; a Stoppage;  
Three or Four large Bits came  
out in the Morning.

27. Clear Water; Pain by Stoppage;  
no Bits. Night Water not clear;  
a Stoppage, with Pain *Pene* ; se-  
veral Bits found in the Pot in  
the Morning, more than any  
Night before.

28. Clear Water; no Pain, nor any Bits.  
Night the very same.

29. The same. Night the same ; no  
Pain, nor Bits.

30. Water clear; a little Pain at making ;  
no Bits. Night clear Water, some-  
times a Stoppage, with Pain ; no  
Bits.

31. The same. Night much Water and  
clear, did not come freely ; a few  
little Bits.

*Nov.* 1. Water clear ; no Pain ; no Bits.  
Night the same; a dribbling Stop-  
page ; no Bits.

2. Clear Water ; very few Bits. Night  
the same, with a dribbling Stop-  
page ; no Bits.

3. Water clear ; no Pain, nor Bits.  
Night much Water and clear ;  
a Stoppage ; no Bits.

*Nov.* 4.



- Nov. 4. Clear Water ; no Pain, nor Bits.  
Night a Stoppage; little Water,  
and a few Bits.
5. Water clear, some Pain at making ;  
no Bits. The same at Night; a  
small Bit, and some Pain.
6. Clear Water ; a Stoppage, with a  
Pain *Pene*; Bits sticking. Night  
foul Water; a Stoppage, with great  
Pain; Bits sticking, but in the  
Morning several large Bits were  
in the Pot.
7. Clear Water; a few small Bits, with  
a little Pain. Night the same; a  
Stoppage, with some Pain; a few  
Bits.
8. The same; I began to take less Me-  
dicines, to Three times, Pain be-  
ing abated. Night Water fouler;  
a Stoppage; some few Bits.
9. Water clear; no Pain; very few  
small Bits. Night Water a little  
foul; no Pain, nor Bits.
10. Clear Water, some Pain; few Bits.  
Night clear Water, a little Stop-  
page; 2 Bits, and Mucus.
11. Water not clear; no Pain; no Bits.  
Night clear Water, a little Stop-  
page; no Bits.
12. The same. Night Water not clear,  
a Stoppage, with Pain *Pene*; no  
Bits.

Nov. 13.



*Nov.* 13. The same. Night clear Water, Pain and Stoppage; Two or Three Bits.

14. Clear Water, some Pain; no Bits. Night Water foul, with a Stoppage and Pain; no Bits.

15. Foul Water, a Stoppage sometimes; no Bits. Night Water foul, frequent Stoppage, with Pain; One Bit.

16. Foul Water, a Stoppage by times; in the Evening a large Bit came, the biggest that came yet. Night foul Water; a little Pain, but no Bits.

17. Foul high-coloured Water, a Stoppage with Pain; no Bits. Night white foul Water, a Stoppage sometimes; no Bits.

18. Water not clear, a little Stoppage; a pretty large Bit of hard Stone came away. Night foul white Water, pretty easy; no Bits.

19. Water the same, Stoppage and Pain; This Evening the largest Stone came away. Night Water foul, some Stoppage, easy as to Pain; no Bits.

20. Water not so foul; no Pain nor Bits. Night Water foul and white, some Stoppage, little Pain; no Bits.

*Nov.* 21.



Nov. 21. Clear Water, pretty easy; no Bits.  
Night the same.

22. The same. Night the Water a little  
foul, Stoppage sometimes; no Bits.

23. Clear Water; no Pain, nor Bits.  
Night foul Water, a Stoppage  
without Pain; no Bits.

24. Water sometimes clear, sometimes  
foul; no Pain; no Bits. Night  
Water foul and high-coloured;  
easy, no Bits.

25. Clear Water, Pain *Pene*; a little  
Bit. Night Water clear; a Pain  
by Stone sticking *Pene*; Two  
large Pieces came away in the  
Morning, where the last had  
stuck in the Passage a Day and  
Night.

26. Water clear; a little Pain *Pene*, by  
reason of the sticking of the Two  
last Pieces. Much Water and  
clear this Night, a little uneasy;  
no Bits.

27. Water the same, easy from any Pain;  
no Bits. This Day, the last of  
Twenty Weeks, I began to for-  
bear the Medicine; I only took  
Two Bottles after this Day.

28. I walk'd abroad as far as the Cus-  
tom-house, having confined my-  
self for Twenty Weeks, taking  
the Medicines regularly, without  
stirring out of Doors.



## P O S T S C R I P T.

S I R,

**Y** O U may please to observe, I have had great Pain from the Stone, and the Medicine's Operation, but now being intirely free from any, may be compared to a Woman in Travail; is forgotten, and do believe myself now to be cured of the Stone, having no Symptoms of that Kind. Thanks to Friends for Advice, & *Laus Deo*.

Dec. 31. 1737.

*I am, Sir,**Your most obliged,**humble Servant.*

Fran. Bolton.

*From Newcastle super Tinam.*

## IV.

*The Case of the Honourable Mr. Carteret,  
Postmaster General.*

**H**AVING been very much afflicted with the Stone and Gravel, and having by the best means I could, endeavour'd to get Relief, at length, in the utmost of my Extremity, I was recommended to Mrs. *Stephens*; and soon  
after



after taking her Medicines, I began to bring away in my Urine a whitish Powder, which, when dry, appeared to be what came from a Stone. This continued for some time, and in about Two or Three Months I found myself freed from a Pain, I had felt at times for several Years, on the Right Side of the Bladder. And I am well assured, it was a Stone or calculous Matter, which stuck to the Bladder. Besides this, I had a loose Stone in the Bladder, which for several Months after gave me extreme Pain, by its forcing when I made Water; which at length came away in Pieces, almost every time I made Water, for about Nine Weeks following; until at last it came all away, as appeared by my being freed from all manner of Pain. The Kernel of the Stone itself having come away, I thought myself then intirely well, tho' afterwards, upon a Journey to *London*, some Stones fell from my Kidneys, which came away to the Number of Seven at one time, which made me presume too far in discontinuing the Medicines in great Part, having little or no Pain; when a Stone, which had stuck in the Ureters, came down, and stopped the Passage of the Urine, which occasioned a Suppression of it, and out of Fear of its not passing, I had the Assistance of Mr. *Chefelden*; and, I thank God, I am now free of any Pain, and have been so ever since.

*Ed. Carteret.*



## V.

*The Case of Mr. Daubuz, in Throgmorton-street.*

**H**E has been subject to void Gravel for a long time, and had the following Complaints for about Ten Months. Pain along the Urethra, and at the Neck of the Bladder, especially upon walking much, or going in a Coach. Violent Pain and Difficulty in making Water: A sudden Stoppage very often: Forcing to go to Stool: Bloody Water upon much Motion. He began Mrs. *Stephens's* Medicines the first Week of last *August*: Upon this his Water became turbid at the time of making, and he voided a good deal of red Gravel. He was much better in a Month, free from all Complaints in Six Weeks, and his Water ceased to be turbid at the time of making, tho' he still continued the Use of the Medicines. He left them off in *October*, having voided Three small Stones, Two flat, and One round, a little before this; and has been perfectly well ever since.

Feb. 16, 1737-8.

*Step. Daubuz.*



## VI.

*The Case of Mr. Holland, Warder of  
the Tower.*

**H**AS had Pains in the Region of the Kidneys, with the voiding of small Stones, ever since the Year 1721. In *August* 1734, had a very bad Fit, but voided no Stone after it. In the *October* following found, that he could neither bear a Coach, ride, nor walk, without a great deal of Pain, and often making bloody Water. Had frequent Provocations to make Water, and made very little at a time. He began Mrs. *Stephens's* Medicines on the Third of last *October*: Upon this his Water became white, and had small white Gravel in it, like Scrapings of Chalk. He was in great Pain for the first Month after he began the Medicines. *November* the Fourth he was examined by the Catheter, and a Stone was found in the Bladder. Since this he has voided several Scales like Egg-shells, white on one Side, and brown on the other, with many white rotten Bits of Stone. He is at present very easy, can walk very well, and continues the Use of the Medicines.

*Witness my Hand to the Truth of this.*

*Feb. 19, 1737-8.*

*Thomas Holland.*

## VII.



## VII.

*The Case of Mr. Neau, in Compton-street, near St. Ann's Church.*

**H**AS had the Symptoms of a Stone in the Bladder for about Six Years: Was examined soon after the Appearance of these Symptoms by the Catheter, and a Stone found in the Bladder. Had great Pain and Difficulty in making Water; a sudden Stoppage often; Forcings to go to Stool; And made bloody Water upon Motion. He began Mrs. *Stephens's* Medicines upon the Fifteenth of last *September*. He was examined by the Catheter on the Twenty-seventh of *October*, and a Stone was found in the Bladder. Upon taking the Medicines his Water became turbid at the time of making, and he has voided several white Shells in so soft a State, as to crumble easily, with one large irregular Stone. He voided a large Stone and several Shells before he took the Medicines, but they were all brown, and very hard. He has now very few Complaints, is able to go over the Stones in a Coach, without Inconvenience, and continues the Use of the Medicines.

*Feb. 16, 1737-8.*

*Henry Neau.*

## VIII.



## VIII.

*The Case of Mr. Snape, in Panton-street,  
near the Hay-Market.*

ABOUT Three Years ago he began to have a Pain in making Water, made little at a time, and had a Provocation to it every Quarter of an Hour. Had violent Forceings to go to Stool at the same time: Made bloody Water upon much Motion. In the End of the Year 1735, after having taken some lenitive Electuary, he voided many small Stones in a hard State, but received no Relief thereby. In *April* 1736 he began Mrs. *Stephens's* Medicines: Upon the Use of these he grew much easier, his Water became turbid at the time of making, and he voided a great Number of small Stones in a soft State, which by their Corners seemed to have been Pieces of larger. He took the Medicines for about a Year, and has been perfectly well ever since he left them off.

*Feb. 18, 1737-8.*

*John Snape.*

## IX.



## IX.

*The Case of the Rev. Dr. Sykes, in  
Great Marlborough-street.*

**H**E has been subject to Pains in his Back, with Vomitings, and the voiding of small Stones, for many Years. About Four or Five Years ago, after a Jolt in a Coach, he had a Pain in making Water, which continued about Three Weeks. In *November* 1736, after another Jolt, he had a Return of the same sort of Pain in making Water: This became very violent after some time, was often attended with a sudden Stoppage, and he had great Provocation to make Water, especially upon Motion: Made bloody Water after much Motion in the Chariot; had an uneasy Sensation in the Region of the Bladder, upon turning in Bed, as if something moved within him. These Disorders continued about Fourteen Months, at the End of which, *viz.* in *February* last, he began to take *Mrs. Stephens's* Medicines. They increased his Pain in making Water very much for some Days; his Water deposited a white heavy Sediment, and he voided many Flakes of Stone in a soft State, and some Fragments in a hard one. He grew easy and free from all Complaints in about Two Months, excepting that he had now and then



then some small Pains in the Region of the Ureters. However, he continued the Use of the Medicines till the End of *August*, his Water depositing a white heavy Sediment, till the last Ten Days or Fortnight of taking. He has continued perfectly well ever since, and can ride a trotting Horse, or go over the Stones in a Coach, without any Inconvenience.

*Feb. 1, 1737-8.*

*Arthur-Ashley Sykes.*

# X.

## *The Case of Mr. Thomas.*

**H**E had the usual Symptoms of a Stone in the Bladder, and began Mrs. *Stephens's* Medicines in *September* last, being about 75 Years old. *October* the Eighth Mr. *Hawkins* examined him, and found a Stone in the Bladder, which he told Mr. *Thomas*, he believed to be a large one: Upon first taking the Medicines Mr. *Thomas's* Water deposited much heavy Sediment, which dried into a stony Substance: Some time after he voided soft white Scales in great Quantities with Grit and Slime, which I saw. His Pains were great at this time: They continued, he lost his Appetite, grew feverish, and died *Jan. 20.* His Body was opened, and a Stone taken out of the Bladder. This Stone Dr. *Shaw* and Mr. *Hawkins* saw *Jan. 30.* I saw Dr. *Shaw* that Evening, and took down from his Mouth the

E

following



following Words, relating to the Appearance of the Stone.

*The Stone was light, white on the Outside, a great Part of it covered with a cretaceous Coat, which broke off in Flakes with great Ease, perfectly like to those before voided, as appeared by comparing them. The Stone would to any indifferent Person plainly appear as if acted upon by a Solvent, so as to have greatly diminished its Bulk. The inner Part of the Stone was reddish, and harder than the external, when tried by a Knife. There were Two Bulgings, which rose pretty high above the Stone, and which appeared to be less acted upon by the Solvent than the other Parts. The Stone was not covered equably with the same Coat, but what covered one Part appeared to have been taken off in others.*

The next Day I saw Mr. Hawkins, and took down from his Mouth the following Words relating to the Appearance of the Stone:

*He saw a Stone weighing nearly Two Ounces, as Mrs. Thomas said. The Surface was of a whitish Colour, and in Part covered with a Matter that had all the Appearance of the soft Shells that had before come away in Mr. Thomas's Water. This Matter was very soft, and ready to fall off and crumble upon the least Touch. By these Appearances he says, that he should imagine that the Stone had been larger, and that this soft Matter seem'd to be ready to fall off in a little time. The*  
Part



*Part of the Stone not covered with this scaly Matter, appeared, when scraped with a Knife, of a rusty Iron Colour, and considerably hard.*

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**A**NY Person who is disposed to inquire more particularly into the Effects of these Medicines, may have a List of those that take them, at Mr. Winter's, in Richbell-Court, Red-Lyon-street, from whence they are given out: However, I hope, these Ten Cases will be sufficient to engage the Attention of all Well-Wishers to Mankind; and I have been determined in my Choice of them, rather by the Eminence of the Persons, by their living in Town, or by the strong Presumption of at least a partial Dissolution of a Stone, than by the Greatness of the Benefit received. Some of these are indeed complete Cures, as far as one can judge; but there are several others as complete among Persons of less Note, or who live at a Distance from London; and that, with all the probable Circumstances of the gradual wasting and crumbling of Stones. There are also a great Number of unfinished Cases; which add much Light and Evidence to these Ten. Neither are these Medicines prejudicial to the Body; but, on the contrary, have plainly improved the general Health of many, that have taken them. I still go on with my Inquiries in the most impartial manner I can; and should be extremely sorry, not only to deceive myself, but to be any Occasion of imposing upon others.



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A N  
A B S T R A C T  
O F S O M E  
E X P E R I M E N T S,

Tending to ILLUSTRATE the  
Foregoing Cases.

I. **S**INCE I have taken Mrs. *Stephens's* Medicines, my Urine has been of a more urinous Smell than usual ; turbid at the time of making, and *alkaline*, that is, it turns Syrup of Violets green, and ferments with the following acid Liquors, Oil of Vitriol, Spirit of Vitriol, Oil of Sulphur, Spirit of Nitre, Spirit of Sea-Salt, Vinegar, and Lemon-Juice. And as far as I can judge, the Case is the same with all who take these Medicines. This I thought very remarkable when I first observed it, and began to hope, that Urine, which was so different from common Urine, might have different Effects upon Stones in the Kidneys and Bladder. And I have lately been informed, that even common Urine, when it putrifies, that is, turns alkaline



line by being kept, will dissolve and take up the calculous Incrustations, upon the Sides and Bottoms of Chamber-pots.

II. In order to satisfy myself the better in this Affair, I thought it not amiss to try what Effects my Urine, thus render'd alkaline by the Medicines, would have upon Stones taken from a human Body, by digesting them in it with a gentle Heat. For this Purpose I took the Stones A and B, and sawed each of them into Four Pieces, of nearly the same Shape and Size. A was a white hard Stone of an uniform Substance throughout. It consisted of Coats indeed, but these were all, as far as one could judge, perfectly alike. B was a brown Stone; it's Shell was hard and knotted, but the internal Parts were much softer. I called the several Pieces A 1, B 1; A 2, B 2; A 3, B 3; A 4, B 4; in order to denote thereby the several Liquors in which each was digested; 1 standing for New River Water; 2 for a Mixture of Mrs. *Stephens's* Powder and New River Water; 3 for common Urine; and 4 for my own Alkaline Urine. I then digested all these Pieces of Stone for a Week in their respective Liquors, with a gentle Heat. This Heat was intended to have been the same as that of Urine in the Bladder; but my Contrivances not being good, it was, at different Times, both considerably greater, and considerably less. I examined them pretty often, and recruited the Liquors as they wasted, with others of the same Kind.

Two



Two or three Days after they were put into Digestion, I observed that A 4 had some white Scales lying upon its Surface in several Parts, which fell off upon being press'd with my Nail. After a Week's Digestion, I took them out, and rubb'd them all with a Cloth. They were then laid in a Window till they became perfectly dry. And the following Table shews the Effects which the several Liquors had upon them.

		Weights when put in.		Weights when dry.		Loss.		Proporti- onal Loss.
A 1	Grains	$308\frac{1}{2}$	—	$304\frac{1}{2}$	—	4	—	0,012.
A 2	—	276	—	273	—	3	—	0,010.
A 3	—	$219\frac{1}{2}$	—	$220\frac{1}{2}$	Gain	1	—	0,004.
A 4	—	$213\frac{1}{2}$	—	191	—	$22\frac{1}{2}$	—	0,105.
B 1	—	257	—	243	—	14	—	0,054.
B 2	—	227	—	217	—	10	—	0,044.
B 3	—	222	—	$223\frac{1}{2}$	Gain	$1\frac{1}{2}$	—	0,006.
B 4	—	$212\frac{1}{2}$	—	190	—	$22\frac{1}{2}$	—	0,105.

III. By this Table it appears, that the Pieces A 4, B 4 in my alkaline Urine, had lost more than any of the others; A 1, B 1, in New River Water, more than A 2, B 2 in the Mixture of Mrs. *Stephens's* Powder and New River Water; and that A 3, B 3 in common Urine had receiv'd a small Addition. That my alkaline Urine should occasion the greatest Loss, is a Presumption in favour of Mrs. *Stephens's* Medicines; that the New River Water should have a greater Effect, than the Mixture of Mrs. *Stephens's* Powder and New River



River Water, was owing, I believe, to the Powder's adhering closely to the Stones in several Parts; which both kept the Water from coming freely in Contact with the Stones, and also added to their Weight; and the Increase of Weight in A 3, B 3, is an Appearance of the same Kind with the Growth of Stones in the Body. And upon examining A 3 accurately, I perceived that it had got an exceeding thin Coat in several Parts, which separated easily, and which I supposed to be an Accretion from the stony Particles of the common Urine, in which it had been digested.

IV. After this I washed the several Pieces of the Stone A, and rubb'd them well with a Brush, so as to take off all loose Parts; I took out the soft internal Parts of the Pieces of B, reserving proper Portions of each of the hard Shells; I sawed the Stones C, D, and E into Four Pieces each, of nearly the same Shape and Size, and F into Two; I took Two Pieces of the white Shell G, Two of the brown Nucleus H, and gave them all Names as in the following Table, in which 1 denotes New River Water, as before; 2 Mrs. *Stephens's* Liquid; 3 common Urine, as before; and 4 my own alkaline Urine, as before. These Pieces were digested for a Week, in the Manner above-mentioned, excepting that the Liquors were now changed every Morning, and all the Pieces rubb'd at the same Time with a wet Sponge. They were rubb'd also when taken out as clean as could be



be without Violence, and then laid in a Window till they were perfectly dry. And the following Table shews the Effects which the several Liquors had upon them.

		Weights when put in.	Weights when dry.	Loss.	Proportional Loss.
A	1	Grains 304	288	16	0,052.
A	2	272 $\frac{1}{2}$	228	44 $\frac{1}{2}$	0,163.
A	3	219	216 $\frac{1}{2}$	2 $\frac{1}{2}$	0,011.
A	4	190 $\frac{1}{2}$	151 $\frac{1}{2}$	39	0,204.
B	1	71 $\frac{1}{2}$	61 $\frac{1}{2}$	10	0,139.
B	2	68 $\frac{1}{2}$	50	18 $\frac{1}{2}$	0,270.
B	3	63 $\frac{1}{2}$	62	1 $\frac{1}{2}$	0,023.
B	4	63	45	18	0,285.
C	1	162 $\frac{1}{2}$	150 $\frac{1}{2}$	12	0,073.
C	2	155	132	23	0,148.
C	3	132	130 $\frac{1}{2}$	1 $\frac{1}{2}$	0,011.
C	4	122	109	13	0,106.
D	1	47	36	11	0,234.
D	2	42 $\frac{1}{2}$	36 $\frac{1}{2}$	6	0,141.
D	3	42	42		
D	4	29	27 $\frac{1}{2}$	1 $\frac{1}{2}$	0,054.
E	1	50	44 $\frac{1}{2}$	5 $\frac{1}{2}$	0,110.
E	2	36	27	9	0,250.
E	3	36	36		
E	4	32 $\frac{1}{2}$	26 $\frac{1}{2}$	6	0,184.
F	3	30	30		
F	4	23 $\frac{1}{2}$	18 $\frac{1}{2}$	5	0,212.
G	3	9	9		
G	4	6	6		
H	3	3	3		
H	4	2 $\frac{1}{2}$	1 $\frac{1}{2}$	and a little more.	

V. Bur



V. By this Table it appears, that the Stones had lost much more in general by this Week's Digestion, than by the former; which without doubt was owing in great measure to my having rubbed them every Morning with a wet Sponge; and it was also upon this account, I suppose, that some of the Pieces in common Urine had lost a little. However, the great Difference of Loss in the several Pieces of the same Stone could not arise from this Cause; and the rubbing them gave me an Opportunity of observing the Manner in which the several Liquors acted upon the Stones. This was, in general, giving a Whiteness to the Surface of the Stones, which, when it was rubbed off, left the Stone of its former Colour; but in those which were most affected, soft white Scales fell off upon being rubbed, and some of them were corroded, and honey-combed. Thus the Pieces in New River Water had a Whiteness upon their Surface, and the Water itself became milky; A 2, A 4, C 2, C 4, F 4, and H 4 had all lost white Scales; B 2, E 2 and E 4 were all pretty much corroded; D 2 a little corroded; B 4 was corroded within, and at the same time its knotted external Surface rendered smooth; D 4 had its brown Surface turned white, but G 4 seemed not to have been affected at all.

VI. In order to satisfy myself still farther, I took all the foregoing Stones, H<sub>3</sub> and H<sub>4</sub> excepted, which were lost by reason of their Smallness; and digested them again in their

F

respective



respective Liquors, having now got a Contrivance, by which they were kept in a Heat, not differing materially from that of Urine in the Bladder. I got also Two small round Stones from the Reverend Dr. *Hales*, which were both taken out of the Bladder of the same Person, and which the Doctor judged to be very hard ones, and called them I 3 and I 4. I 3 weighed Twenty-five Grains and an half, and was put into common Urine; I 4 weighed Twenty-one Grains and an half, and was put into my own alkaline Urine. I began the Digestion *July* 26. The Liquors were changed every Day during the whole Digestion, and the Stones all rubbed with a wet Sponge every Day for the first Ten Days; then once in Three or Four Days till *Sept.* 3, but after that not at all. And the following Table shews the Day on which each Stone was either so far wasted as not to be found, or reduced to such a Size, as to be in Danger of being confounded with the small Pieces, which fell from the rest.

E 2	-	-	-	<i>Aug.</i> 24.
D 1	-	-	-	27.
B 2	-	-	-	30.
D 2	-	-	-	<i>Sept.</i> 8.
B 1	-	-	-	9.
B 4	-	-	-	9.
D 4	-	-	-	12.
F 4	-	-	-	24.
G 4	-	-	-	24.

C 2



C 2	-	-	Sept. 27.
E 4	-	-	27.
I 4	-	-	Oct. 11.
C 1	-	-	15.
E 1	-	-	15.
A 2	-	-	15.
A 1	-	-	31.
A 4	-	-	Nov. 5.

I omitted to set down the Day, on which C 4 was judged to be wasted; but I remember, that it was not till towards the latter End of the Digestion.

VII. All this time the several Pieces in common Urine continued intire, and even had Incrustations upon them. I took them out Nov. 5. and having weighed them Nov. 15. when they were perfectly dry, found that they had all receiv'd an Increase of Weight, as in the following Table:

		Grains.
A 3	had gained	17 $\frac{1}{2}$ .
B 3	-	16.
C 3	-	18.
D 3	-	7 $\frac{1}{2}$ .
E 3	-	4.
F 3	-	4.
G 3	-	2.
I 3	-	2.

VIII. The Manner in which the other Pieces wasted, was in general the same as that which is described above in the 6th Paragraph, excepting that those in New River

F 2

Water



Water became after some time as much honey-combed as the rest, and wasted as fast; that D 4 and G 4 remained unaltered to Appearance for a long time, and then grew quite rotten in a few Days; and that I 4, the small hard Stone given me by Dr. *Hales*, had several Cracks in it, after about a Month's Digestion.

IX. Besides these I made several other Experiments, the Result of which it may not be improper just to mention.

X. I digested different Pieces of the same Stones in my own alkaline Urine, with different Heats; the one, that of Urine in the Bladder, the other so great, that I could not bear my Hand at rest in it; and I found, that the less Heat had the greater Effect.

XI. I boiled different Pieces of the same Stones in common Water, my own alkaline Urine, and common Urine, for Five Hours each. Those in Water and my Urine wasted considerably, and the Surface of the last was turned white and soft; but those in common Urine had little Effect produced upon them.

XII. I digested different Pieces of the same Stones in common Water, the distilled Water of Water-Pepper, the Juice and the Decoction of it; and found that common Water had a greater Effect than any of these. The Heat in this and all the following Experiments did not differ materially from that of Urine in the Bladder.

XIII. I digested Pieces of Stones taken from the human Bladder, from the Bladders of  
Dogs,



Dogs, and the Stomachs of Horses, in *Thames* Water, and in Pump Water, and found, that both the Waters dissolved all the human Stones intirely, and wasted the others very much; but the *Thames* Water had the quickest Effect. The Waters were changed every Morning, at which time I observed, that the Pump Water poured on the Day before, had always some Bubbles upon it. Some of the human Stones were cracked during the Dissolution.

XIV. I digested Pieces of the same Dogs and Horses Stones in common Urine, and my own alkaline Urine; but did not observe any Effect, except that one of the Dog's Stones seemed a little softened by my Urine.

XV. I digested a large Kidney-stone, Two Pieces that had been boiled in my alkaline Urine, and a round hard Stone in common Urine, which was a Mixture of different Urines. The Kidney-stone and the Two Pieces lost something of their Weight. The round hard Stone grew black at first, but whether it was wasted or not, I cannot determine from its Appearance, and I had not weighed it. The Surface of the Kidney-stone was rendered so brittle, that large Scales broke off with very little Force, but they were neither white nor soft.

XVI. I digested a large Kidney-stone of the same Shape, Size and Texture, with the foregoing, and taken out of the other Kidney of the same Person, with Twelve different Stones, or Pieces of Stones, in the alkaline Urine of a Gentleman,



Gentleman, who took Mrs. *Stephens's* Medicines. They all wasted very fast, excepting one Piece, which received a small Addition. It was iron-coloured, and exceedingly hard, as I found by sawing it. It appeared to me, that this Gentleman's Urine had in general a quicker Effect than my own. The Stones mentioned in this, the 10th, 13th, 14th and 15th Paragraphs, were none of them rubbed.

XVII. There are some Appearances mentioned in this Abstract, which I cannot account for; but if the Experiments were repeated with more Accuracy, and other new ones tried, it is probable, that many useful Discoveries would arise. And thus much I think one may venture to conclude, even from these Experiments, that the Dissolutions by the several Sorts of common Water prove against the absolute Necessity of an acrimonious Liquid for this Purpose, and that those by the Two alkaline Urines are strong Presumptions in Favour of Mrs. *Stephens's* Medicines, especially when compared with the foregoing Cases. I shall be much obliged to any Gentleman, who will furnish me with Stones, for the farther Prosecution of this Matter.

F I N I S.



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P O S T S C R I P T.

*SINCE the Date of Mr. Binford's  
Case, N<sup>o</sup> 2. he has voided a few  
more Pieces of Stone, and is become free  
from all Complaints, having been able  
to go over the Stones in a Coach, without  
any Inconvenience, for a Week past.*

March 7, 1737-8.

Tho. Binford.

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P O S T O R I T

WITNESSETH the Court of the County of Lincoln  
that the said John W. a. has asked to have  
his name changed to John W. and in doing so  
has not complied with the law and  
is not entitled to the same, and the Court  
has ordered that he be restored to his  
original name, John W. a.

The Clerk.

Med. Therap.



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ON

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additional Experiments on the comparative  
Efficacy of dulcified Spirit of Nitre, Spirit of  
Salt, and the Juices and Decoctions of Onions,  
Leeks and Cellery, as Lithontripticks.

*Presented to the Royal Society Jan. 14. 1741-2.*

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By J O H N R U T T Y, M. D.

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To which is subjoined,

An Account of the Effects of Soap-Lees taken  
internally, in the Case of JAMES JURIN, M. D.

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L O N D O N: Printed for R. M A N B Y, over-  
against the *Old-Bailey* on *Ludgate-Hill*.

---

M D C C X L I I.



A N

# ACCOUNT

Of some New  
Experiments and Observations  
ON  
JOHNNA STEPHENS

Medicine for the Stone:



With some Hints for reducing  
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With REMARKS on  
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By JOHN RUTTER, M.D.

To which is appended,

An Account of the Effects of Soap-Less taken  
internally, in the Case of James Jerin, M.D.

LONDON: Printed for R. MANLY, over-  
against the Old-Bell in Ludgate-Hill.

MDCCLII.





T H E

# INTRODUCTION.

**I**T is well known that animal Concretions of various Kinds may be resolved. Those called Tophaceous, produced by the Gout, have yielded to an entire vegetable Diet, as Venereal Nodes have done to a Course of Guaiacum, and Fumigations of Cinnabar : And it appears by some Experiments, that several Stones taken out of the human Body have been greatly lessened by long Digestion in simple Water ; from whence it does not seem improbable, that the Particles of Stones formed in the Bladder or Kidneys might in process of time be dissolved, or rather washed away, by the aqueous Parts of the Urine, provided the Meat and Drink were calculated to prevent their Increase. But the Action of Water is so weak and slow, that it cannot be allowed, in any tolerable Sense, a Dissolvent of the Stone. The only Menstruum that has been hitherto

B                      deemed



deemed worthy of that Character, and is an effectual Dissolvent, is Aqua fortis, or Spirit of Nitre ; but its caustick Quality renders it unfit for internal Use.

The World has lately been favoured with a new Discovery of a Remedy said to be effectual, and to be taken internally with Safety : I need not say that it is the Discovery of *Joanna Stephens* that I mean. The Instances of the Success with which the Medicines have been used, deserve the serious Attention of Physicians, and ought to excite them to a careful Examination of their Effects, so as to render this Discovery as useful to the Publick, as the Nature of the Thing will admit, and as the *British* Parliament generously intended it to be.

The Medicine, as communicated to the Publick, is a Composition operose and troublesome, several Parts of it being of little or no Use, and others plainly calculated to disguise the rest. The Ingredients of which it consists have lately been examined by the ingenious Dr. *Hales* and Dr. *Hartley*, who have with much Judgment rejected the superfluous Parts, and reduced this pompous Medicine to a slacken'd Powder of calcin'd Egg-shells, and a Solution of Soap, in the following Form :

“ Let two Scruples, two and a half, or a  
 “ Dram of Egg-shells (calcin'd until they ac-  
 “ quire a pungent fiery Taste, and from being  
 “ black, become white again ; and afterwards  
 “ exposed



“ exposed to a dry Air for a Month, six  
 “ Weeks, or two Months, that is, till they  
 “ slacken, or fall into an impalpable Pouder  
 “ in great measure) be taken, three times every  
 “ Day, in three or four Spoonfuls of Water,  
 “ small Beer, Wine, or Wine and Water;  
 “ drinking after each Dose the third Part of  
 “ the following Decoction.

“ Take two Ounces, two and an half, or  
 “ three of *Alicant* Soap; slice it thin, and  
 “ dissolve it in a Quantity of Water sufficient  
 “ to make a Pint and an half of the Decoction.  
 “ Strain it, and sweeten it with Honey,  
 “ or Sugar, to the Taste.”

Thus these learned Gentlemen have, in some measure, rescued this Medicine from the Imputation of being merely Empirical; and indeed our whole Faculty must acknowledge themselves in a particular Manner indebted to the accurate Dr. *Hales* for his ingenious Experiments on this, as well as several other Subjects: However, as his Experiments are confined to two Stones, neither of which seem to have been of the hardest Kind, I thought that the Importance of the Subject required the like Experiments to be repeated and diversified on a greater Variety of Calculi, which very much differed as to the Degrees of their sensible Hardness and Solidity.

Perhaps the Distinction of Solvents of the Stone and Lithontripticks is very supportable;



for if by Solvent we understand that which effects such a Commintion of the Parts of the Stone, as keeps them suspended in the Pores of the Menstruum, I know of nothing which lays claim to that Title but Spirit of Nitre; the several Ingredients of this Medicine, which are to be the Subject of the following Series of Experiments, do only corrode and precipitate the Parts of the Stones, and therefore in Strictness should seem rather to deserve the Appellation of Lithontripticks than Solvents.

It must be owned, that the reasoning from the Effects of Medicines on Stones out of the Body, to their Effects on the same Stones in the Body, where those Medicines may undergo great Alterations, is not always conclusive; however, it must, in the present Case, be likewise acknowledged, that the Effects of the Infusions of the Ingredients of this Medicine on Stones out of the Body, do so far correspond to the Observations of the Appearances arising on the internal Use of them, as to render those Experiments, and these Observations, a reciprocal Illustration and Confirmation of each other.

I know it is urged, that the calcarious Matter voided by Patients during their Use of these Medicines, is nothing but the calcarious Parts of the Ingredients. But to this I answer, that the calcarious Matter thus voided, differs from the Calx of the Medicines in two important Respects. 1<sup>st</sup>, That it is found to be  
in



in a great measure volatile in the Fire, as are the Stones taken from the Gall-bladders of Oxen, Bezoar, and the solid Parts of Animals, as well as the Stones of the human Body; but the Calx of these Medicines is fixed in the Fire. 2dly, I have found the calcarious Matter voided during the Operation of these Medicines, to agree likewise with the Stone of the Bladder, as well as to differ from the Calx of these Medicines, in that it made an Ebullition peculiarly, or chiefly, with Aqua fortis, and not with Vinegar, Spirit, nor Oil of Vitriol; whereas the Calx of these Medicines makes a strong Ebullition with Spirit and Oil of Vitriol, and even with Vinegar. And here, by the by, allow me to obviate a vulgar Prejudice against the Use of Waters abounding with calcarious Matter, as contributing to the Generation of the Stone. For, were we to suppose that the stoney Particles of such Waters did coalesce in a Warmth equal to that of the Pelvis or Bladder, (otherwise than obtains in the Concretions formed by the petrifying Waters, one principal Requisite for which is the Cold \* of Winter) yet the Concretion thereby formed being, according to all Observations, chiefly a true native Limestone, would be very different from the animal Calculus, viz. both fixed in the Fire, and exciting a strong Ebullition with Spirit and Oil of Vitriol, and

\* See Dr. Short's Natural History of mineral Waters.



vj    *The* INTRODUCTION.

even with the weaker Acids, as Vinegar, &c. whereas the Calculus is volatile in the Fire, and makes no Ebullition with Spirit nor Oil of Vitriol, nor the weaker Acids, but peculiarly or chiefly with Aqua fortis.

My Design in these Papers is, to endeavour to establish the Credit of these Medicines upon a Basis of Truth and Certainty; to discourage a too great Fondness of them, without detracting from their real Merit; to shew more distinctly the different Degrees of Solubility of different Stones, and of different Parts of the same Stone, from their various Degrees of Hardness and Solidity; to shew the Importance of the Lime in these Medicines, and from the Effects of calcined Limestone on the Calculi, and the Appearances it excites on its Admixture with other Bodies, exactly like those excited by the calcined Egg-shells; to give Hints of the Usefulness of Lime-water; and lastly, to subjoin some Experiments, shewing the comparative Efficacy of Spirit of Nitre, Spirit of Salt, and the Juices and Decoctions of Onions, Leeks and Cellery, on Fragments of the same Stones, which were the Subjects of the Experiments with Soap, Soap-Lees, and Lime-Water.

In pursuance of this, I shall first describe the several Stones which I procured from some Gentlemen of the Profession in this City, who were Witnesses to the Result of most of the Experiments.



## *The* INTRODUCTION. vij

N<sup>o</sup>. 1. is the exterior Part of a Stone of the softer Kind, having been broken into several Pieces under the Forceps in the Extraction.

N<sup>o</sup>. 2. is the Nucleus surrounded by N<sup>o</sup>. 1. and is much harder than N<sup>o</sup> 1. the exterior Part of the same Stone.

N<sup>o</sup>. 3. is a Stone still softer than N<sup>o</sup>. 1. viz. so soft that I could penetrate it with my Nail.

N<sup>o</sup>. 4. is a hard Stone, (one of those called *Mulberry-Stones*, from the little Protuberances on the Surface) and of a brown Colour. It was so hard as to require a forcible Stroke of a Hammer to break it.\*

N<sup>o</sup>. 5. is an exceedingly hard, solid, and compact Stone.

N<sup>o</sup>. 6. is the Nucleus of the last, which, contrary to what is usually observed, is less hard than the surrounding exterior Part.

B 4

N<sup>o</sup>. 7.

\* “ I should not think, says *Morand* in his Examination of  
“ *Stephens's* Medicines for the Stone, that these Medicines can  
“ have any Effect on those called *Mulberry-Stones*, especially  
“ such as are black; these Stones appearing to be of a different  
“ Kind from the white and chalky, the *Mulberry-Stones* be-  
“ ing composed of little, and almost conical Clusters pointing  
“ to the Centre of the Stone, and rising from the Surface in  
“ irregular Knots, with considerable Spaces between them.  
“ On the external Coat of these Stones, and sometimes on the  
“ Inside, we find little Lumps of dried Blood; whence I  
“ judge them to be a particular Composition of Urine and  
“ Blood, making a much harder Concretion than the white  
“ Stones, and resembling what we are told of the Cement of  
“ the Ancients, the Hardness whereof is ascribed to the Bul-  
“ lock's Blood used in the Composition.” However we shall  
find in the Sequel, that some even of these do partly give way  
both to Lime-Water, and to the Decoction of Soap. *Vide*  
Exper. 18, 27, 28.



viii *The* INTRODUCTION.

No. 7. is a moderately hard Stone, superior in Hardness to No. 1, and 3. but less hard than No. 5.

No. 8. is a small Stone of two Grains Weight, smooth and hard, lately discharged from the Kidneys.

No. 9. is a second hard Mulberry-stone.

No. 10. is the Nucleus of No. 9. exceeding it (as the Nuclei generally do the surrounding external Part) in Hardness and Solidity.

No. 11. is a hard, solid, compact Stone extracted about fifteen Years ago.

No. 12. is the Nucleus of No. 11. exceedingly hard, much harder than No. 11. it's surrounding exterior Part, multangular, and polished like a Marble in all Parts, except at the Angles.

No. 13. is a hard, compact, and smooth Stone extracted two Months ago.

No. 14. is the Nucleus of the last.

No. 15. is a Collection of small, moderately hard Gravel-stones, which were usually voided in great Numbers together.

SECT.





## S E C T. I.

### *Of Soap-Lees, as a Solvent of the Stone.*

**A**S the Efficacy of the Soap in these Medicines has been determined by Dr. *Hales* to be owing to the Soap-Lees, *i. e.* to a Solution of an alkaline Salt deriving its Activity from its Combination with the fiery Particles of Lime; which he found to be such, that his softer Stone “ was dissolved by being boiled in Soap-Lees “ Half an Hour, in a hot Cucumber-Bed in “ four Hours, in a less hot one in 18 Hours, “ in cold Soap-Lees in three Days;” it will be worth our while to examine their dissolving Power on a greater Variety of Calculi. I therefore procured some very strong Soap-Lees, being as strong as the strongest Sort mentioned by the Doctor; mine yielding a fourth Part of dry Salt upon Evaporation. With these I made the following Experiments.

*Exp. 1.* I infused a Fragment of the softer Stone, No. 1. weighing Gr. 25. in a moderate digesting Warmth, six Hours; when taking it out, I found it to be become, in its  
external



external Part, soft like Pap. I suffered the same Fragment to continue immersed cold a Month in the same Soap-Lees; when I found it had lost 16 Grains out of 25; its external Part being corroded and precipitated in the Form of a Powder, and the remaining Part rotten.

I infused another Fragment of the same Stone in a blood-warm Heat eight Hours, with the like Event; preferring Trials made in such a Degree of Heat before those made in a boiling one; which neither obtains in the human Body, nor is found to be so powerful a Solvent as the milder Heat equal to that of our Body.

*Exp. 2.* A Fragment of No. 3. the softest of all the Stones above enumerated, weighing Gr. 17. being kept in a moderate digesting Heat 14 Hours in Soap-Lees, was entirely mouldered into a Powder like slacked Lime.

Thus we see that Soap-Lees, assisted by a moderate Heat, do comminute the Parts of the *softer* Stones; and the following Experiments will shew, that they do also corrode and reduce to Powder, Stones of a considerable Hardness.

*Exp. 3, 4, 5.* A Fragment of No. 7. a Stone of a middle Hardness, and another of No. 11. a Stone of superior Hardness and Solidity, although they both resisted a Digestion  
of



of six Hours, and a subsequent cold Infusion of two Months, in Soap-Lees, thereby not suffering any considerable Diminution of Hardness, nor any Loss, but some Acquisition of Weight; yet a Fragment of N<sup>o</sup>. 7. weighing nine Grains, being digested nine Days and Nights in Soap-Lees, in a Heat nearly equal to that of the human Bladder, was entirely mouldered into a Powder like slacked Lime; as was also a Fragment of N<sup>o</sup>. 11. weighing eight Grains, digested in the like Heat four Days and Nights; and another Fragment of the hard, solid Stone, N<sup>o</sup>. 5. digested in the like manner as the last mentioned. Again,

*Exp. 6.* Three small Gravel-stones, of N<sup>o</sup>. 15. were, even by 48 Hours warm Digestion in Soap-Lees, become easily reducible to Powder like slacked Lime.

But the Effect of the Soap-Lees on the *hardest* Stones, and their *Nuclei*, was found to be truly but very small. For, in

*Exp. 7.* A Fragment of the hard Mulberry-stone, N<sup>o</sup>. 4. being infused in a blood-warm Heat eight Hours in Soap-Lees, did not exhibit any Precipitation of an abraded calculous Matter, as did a Fragment of N<sup>o</sup>. 7. infused in the same Heat the same Space of Time; but suffered only some little Corrosion on the Surface. So in

*Exp.*



*Exp.* 8, 9. A Fragment of the second hard Mulberry-stone, N<sup>o</sup>. 9. and its Nucleus, N<sup>o</sup>. 10. were digested in a Sand-Heat in Soap-Lees 26 Hours; but still continued their Hardness. Again, in

*Exp.* 10. I infused cold in Soap-Lees, above a Month, several Fragments of the excessively hard and polished Nucleus, N<sup>o</sup>. 12. by which they suffered no Loss of Weight nor Hardness. I then digested these Fragments, thus previously infused, in a moderate Warmth 14 Hours in the same Soap-Lees; when I found they had suffered no Loss of Weight, and are still very hard, although somewhat less hard than before.

Another Fragment of the same Nucleus was infused cold in Soap-Lees four Months; when indeed it is become rotten, although still not dissolved, nor (by the bye) so rotten as another Fragment of the same Nucleus infused cold the same Space of Time in Spirit of Salt. Moreover, in

*Exp.* 11. N<sup>o</sup>. 2. the Nucleus of the softer Stone, N<sup>o</sup>. 1. infused also cold four Months in Soap-Lees, although become partly rotten, still retained its Cohesion to some considerable Degree.



It must then be a Work of a long Time to dissolve such a Nucleus as that of N<sup>o</sup>. 12. even if the Menstruum (Soap-Lees) were allowed to act on it with its entire Force, otherwise than does or could happen in the human Body without Injury to the fleshly Fibres; the same Objection lying against the internal Use of Soap-Lees as of Aqua Fortis.

Hence we may cease to wonder, that Dr. *Hartley* has taken these Medicines three Years and a half; and although he has voided Scales and Fragments of Stone during the whole Time, yet has most of his Symptoms remaining, tho' in a less Degree.

Upon the whole of the recited Experiments it however appears, that Soap-Lees unmixed, out of the Body, do corrode and precipitate the Parts of not only the softer Stones, but likewise of those of a considerable Hardness and Solidity; and yet that they are but a very slow and imperfect Solvent of the hardest Stones and their Nuclei.

But inasmuch as the Lees in the Soap must be greatly diluted and weakened before they arrive at the Bladder, they cannot be supposed to act there with the Force they did in the preceding Experiments. It was therefore of great Importance to determine, what Proportion of them was sufficient to give the Urine a stone-dissolving Quality; which, according to Dr. *Hales*, was any Number of Drops from 16 to 26 to an Ounce of Urine; which several



ral Proportions were infused with divers Fragments of his softer Stone *A* in several Phials, and kept in a warm digesting Heat nearly equal to that of Urine in the Bladder, for 16 Days, renewing the Urine and the same Number of Drops every Morning; and he was so happy as to find, that all those Fragments were softened and whitened to a considerable Depth from their Surfaces; and in 13 Days more some of them were totally dissolved. I therefore thought it well worth while to repeat this Experiment on different Calculi. Accordingly,

*Exp. 12.* I infused a Fragment of the softer Stone, N<sup>o</sup>. 3. in an Ounce of fresh Urine, impregnated with 26 Drops of Soap-Lees; and found that, on only 12 Hours warm Digestion by a Heat nearly equal to that of Urine in the Bladder, it was become far more friable than before: But I was not so fortunate as to find so considerable an Effect, even by a much longer Infusion of Soap-Lees diluted with the same Proportion of Urine, on the harder Stones. For in

*Exp. 13, 14, 15.* A Fragment of the hard Mulberry-stone, N<sup>o</sup>. 4. and two of the hard and solid Calculi, N<sup>o</sup>. 5. and N<sup>o</sup>. 11. were kept for the greatest part of 28 Days and Nights in the Heat before-mentioned in several Phials, each respectively containing



containing the Proportion of 26 Drops of Soap-Lees to an Ounce of Urine renewed every Morning; and the Result was, that the Fragment of N<sup>o</sup>. 4. still retained its Hardness; as did also that of N<sup>o</sup>. 11. both its Hardness and Weight when dried. The Fragment of N<sup>o</sup>. 5. only was become rotten.

Soap-Lees then thus diluted, that is, in the largest Proportion in which they are (by means of the Soap daily taken in the Quantity ordered in the Receipt) supposed to be mixed with the Urine, is but a very slow or imperfect Solvent, especially of the harder Stones.

These Experiments, however, do not conclude against the Efficacy of the Medicine; because, besides the Soap-Lees, the Co-operation of the Powders must also be taken into the Account; which in the Section on Lime will appear to be very considerable: And indeed, if we take for granted the Truth of the Observations of *Morand*, *Geoffroy*, and *Dr. Hartley*, that the Urine of those who take the Medicines, when freed of its Slime, did (being renewed every Day) corrode and lessen the Weight of several Stones infused in it in a Heat equal to that of the human Bladder; I do not see how we can resist the Force of the Evidence of their lithontriptick Efficacy.

## S E C T.



## S E C T. II.

*Of the Decoction of Soap, as a Solvent  
of the Stone.*

**D**R. *Hales* found, that Pieces of his less hard Stone *A* were dissolved in a Decoction of *Alicant* Soap: I have known *Castile* Soap to have been successfully substituted to the *Alicant*. It may be worth our while to compare the Effects of the *Castile* and common *Dublin* Soap on a Variety of Stones; which I did in the following Experiments.

*Exp.* 16. A Fragment of the softer Calculus, N<sup>o</sup>. 1. and another of the Stone of a middle Hardness, N<sup>o</sup>. 7. being kept nine Hours in a Heat below that of Simmering, in a Solution of *Castile* Soap of the same Strength as in the Medicine; the first became more friable than before, the last evidently less hard: And yet a Piece of N<sup>o</sup>. 2. the Nucleus of N<sup>o</sup>. 1. as also a Scale of the hard Mulberry-stone, N<sup>o</sup>. 4. having suffered the same Infusion, still retained their Hardness; but we shall see in the Sequel, that a longer continued Infusion softens them.

*Exp.*



*Exp.* 17. A Fragment of the Stone of a middle Hardness, No. 7. being kept three Days and Nights in such a Heat as I could bear my Hand in, in a Decoction of *Castile* Soap of the same Strength as in the Medicine, is corroded and mouldered on the Surface like flacked Lime.

*Exp.* 18. A Piece of the hard Mulberry-stone, No. 4. and two others of the hard and solid Stones, No. 5. and No. 11. were severally digested in a Heat nearly equal to that of Urine in the Bladder, 12 Days and Nights in a Decoction of *Castile* Soap, and in a Decoction of common *Dublin* Soap of the same Strength: They were all corroded on their Surfaces, and rotten; and these Effects were as conspicuous in the Decoction of our common Soap as that of *Castile*.

*Exp.* 19. I made two Decoctions, the one of *Castile*, the other of *Dublin* Soap, both of the same Strength as the Decoction of *Alicant* Soap in the Receipt: Into each of these I put severally Fragments of the Stone of a middle Hardness, No. 7. of the hard Mulberry-stone, No. 4. and of the two solid and hard Stones, No. 5. and No. 11. and kept them all in a Heat nearly equal to that of Urine in the Bladder, for the greatest Part of a Month; when taking them out,  
C I found



I found them all rotten, and from hard Stones become friable into a Powder like flacked Lime, by a gentle Crush between my Fingers; and this Effect was every whit as great in the Decoction of *Dublin* Soap as that of the *Castile*.

*Cor. 1.* These Experiments, shewing the Efficacy of Soap as a Lithontriptick, and in a Heat not exceeding the natural, seems to be a strong Confirmation of its good Effects in the Medicine, and are of more immediate Use than the Experiments on mere Soap Lees; because the caustick Quality of these is so far checked and sheathed by the Oil or Tallow with which they are incorporated in the Making of Soap, that it's well known this may be safely taken internally in large Quantities.

*Cor. 2.* Common Soap then has not only the same essential Principles as the *Alicant* and *Castile* (*viz.* an alkaline Salt combined with the fiery Particles of the Lime) but agrees with them, in disposing not only the softer Stones (such as Dr. *Hales* tried) but also the hard ones, to a Solution, and probably may be successfully substituted to either of them.



S E C T. III.

*Of Lime and Lime-water, as a Solvent  
of the Stone.*

I COME now to consider the grand essential Article of this Composition, the calcined Egg-shells, or, to speak more properly, the Lime. For, when the volatile Parts of the Egg-shells are exhaled by Calcination, as in the Receipt, the remaining Part is reduced to a mere Lime like that from the Limestone, which it exactly resembles in all Trials; as in Taste, in being fixed in the Fire, in the Appearances it exhibits with Acids, with Alcalies, with Logwood, Brazil, Rhubarb, and Galls; in turning yellow with Mercury Sublimate corrosive, as in the Phagedenick Water; and, lastly, in its caustick Quality. Accordingly *Dioscorides* having recounted the Limes made both of Shells and of the Stone, says thus of them all \*; *Habet communiter omnis Calx fervidam vim, erodit, urit, & ignis modo crustas inducit.*

The Lime then must be allowed to be the most powerful Ingredient in this Medicine; since all the Experiments hitherto made seem to evince, that the active, fiery Particles of

C 2

which

\* Lib. v. cap. 87.



which it does consist, give Energy to the Powders, and to the Soap\*; the alkaline Salts, actuated by the fiery Particles of the Lime (according to Dr. *Hales's* ingenious Account of the Manner of the Operation of this Medicine) dissolving the Oils, which are the Band of Union of the Parts which constitute the Stone: But those fiery Parts are so acrid in themselves, as to make it necessary to expose them for a certain Time to the Air, whereby their deleterious, caustick Quality may be abated. If they are administered internally without this necessary Precaution, they produce most terrible Effects; an Instance of the Truth of which was lately met with in this City; the Powders ill prepared having been administered to a Patient, threw him into strong Convulsions.

Since then it is necessary that the calcined Egg-shells be exposed to the Air, to deprive them of Part of their Acrimony; and in the Sequel of these Experiments it will appear that fresh made Lime-water corrodes the Stone more strongly than an Infusion of an equal Proportion of *Stephens's* Powders, which must arise from its superior Acrimony; and it is also certain that Lime, by being long exposed to the Air, loses all its fiery Parts, and becomes a mere terrestrial Absorbent:  
If

\* Dr. *Hartley* has rejected the Snails, as void of any dissolving Power, being not reduced to Lime; and therefore useless in the Medicine.



If then the calcined Lime-stone be either exposed to the Air for a proper Time, or sufficiently diluted, as it may be to what Degree we please, so as to be brought to the same Standard of Acrimony with the Powders of calcined Egg-shells, what should hinder it from being substituted to these as a Lithontriptick equally efficacious, with these Advantages, that 'tis prepared in a much shorter Time, and at a cheaper Rate?

*Latet in Calce viva admirandum contra Podagram & Calculum Remedium*, says *Hermannus* in his *Cynosura Materiæ Medicæ*; and we have a recent Instance in *Stephens's* Hospital, of the Efficacy of the mere Powders (without the Assistance of any alkaline Salts) in a Boy of nine Years old, who having laboured under the Symptoms of the Stone seven Years, was searched, and found to have a Stone in the Bladder, was in great Pain, could retain his Water but a very little while, and was much emaciated; who, upon taking a Scruple of the Powders prepared as in the Receipt four times a Day, washing them down, instead of the Decoction of Soap (against which he had an invincible Aversion) with that of Mallows sweetened with Honey, and persisting herein for the Space of half a Year, discharged Plenty of a scaly Matter, became much freer from his Pains, was able to retain his Urine, and recovered a plump Habit of Body.



After all this, it is surprizing that Dr. *Lobb*, in his Treatise of Dissolvents of the Stone, should deny this Property to Lime-water, whilst he attributes it to many other Articles of inferior Efficacy. Surely the Lime-water he used must have been very weak, or very old; and indeed even the Lime-water with which Dr. *Hales* made his Experiments in Favour of the stone-dissolving Property of Lime, appears to have been much weaker than that which I used; his making very little Impression on his harder Stone *B*, whereas mine made a very considerable one on several of the hardest Stones above enumerated; sometimes exciting an Ebullition with them like Aqua Fortis (although in a less Degree) and so shewing their Disposition to be dissolved by it, and generally corroding and precipitating a Part of their Substance. Now this superior Efficacy of the Lime-water I made use of, was probably owing to its being fresh made of good Lime-stone; whereas Dr. *Hales's* was of Chalk, which makes a much weaker Lime than our Lime-stone. I also made the following Experiments with the Calculi and Lime-water in Phials well corked; a Circumstance absolutely necessary to be observed, because otherwise the Lime-water would soon be deprived of its active Particles by being exposed to the Air. The Lime-water I used was generally made in the  
Proportion



Proportion of eight, or at most twelve Parts of Water to one of Lime.

I shall first relate the Effects of the Lime-water on divers of the Calculi above-mentioned; and then compare its Effects with those of Water impregnated with an equal Proportion of Powders calcined and slackened as in the Receipt.

*Exp.* 20. A Fragment of the softer Stone, N<sup>o</sup>. 1. was infused cold in Lime-water 13 Days; whereupon it was become in its exterior Part so soft, that I could penetrate it with a Pin; and on 18 Days Infusion it mouldered into Sand, on the Application of a very small Force to it.

*Exp.* 21. A Fragment of the Stone of a moderate Hardness, N<sup>o</sup>. 7. weighing eight Grains, was infused in Lime-water in a Warmth nearly equal to that of Urine in the Bladder, 22 Days; when a great Part of it was mouldered into a Powder like slacked Lime, and the remaining Part was very rotten.

Another Fragment of the same Stone, weighing 22 Grains, was infused 15 Weeks in Lime-water cold, when I found it had lost eight Grains, being the calculous Matter mouldered off, and precipitated in the Form of a white Powder, and the remaining Part had lost much of its Hardness.



## 16 *Of Lime and Lime-water,*

*Exp.* 22. A Fragment of the hard solid Stone, N<sup>o</sup>. 11. weighing 17 Grains, infused cold 15 Weeks in Lime-water, lost six Grains moulder'd off, and precipitated in the Form of a Pouder, and the remaining Part was become much less hard.

*Exp.* 23. Some of the small Gravel-stones of N<sup>o</sup>. 15. weighing all together eight Grains, being digested a Month in Lime-water, (which was sometimes renewed) in an Heat nearly equal to that of Urine in the Bladder, were entirely moulder'd into a Pouder like slacked Lime.

*Exp.* 24. I infused, N<sup>o</sup>. 8. the small, hard, smooth Stone, weighing two Grains, in cold Lime-water six Weeks, when it had lost one half of its Weight, moulder'd off and precipitated in the Form of a white Pouder, and the remaining Part was reducible to Sand by the Application of a very small Force.

*Exp.* 25. A Fragment of the hard, solid Stone, N<sup>o</sup>. 5. weighing seven Grains, by 25 Days cold Infusion in Lime-water lost three Grains mouldered off, and the Remainder was somewhat rotten.

*Exp.* 26. A Fragment of the hard Mulberry-Stone, N<sup>o</sup>. 4. weighing 15 Grains, by a cold



cold Infusion for two Months in Lime-water, was become rotten.

*Exp. 27.* I immersed three Fragments of the second hard Mulberry-Stone, N<sup>o</sup>. 9. all together weighing 20 Grains, (another Fragment of which had resisted 26 Hours Digestion in Soap-Lees. See *Exp. 8* and 9 above) in Lime-water cold, and continued the Infusion six Weeks, when I found they had lost three Grains precipitated in the Form of a chalky Matter; and the remaining Part, although still hard, was more easily broken than before.

I proceed next to compare the Effects of Lime-water made from fresh Lime, with those of a Water made from the Pouders of the Egg-shells calcined and slackened, and Snails prepared as in *Stephens's* Receipt.

*Exp. 28.* With these Pouders, and with Quick-lime, I made a Lime-water, putting eight Parts of Water to one of each of them severally, pouring them into two Phials; and into each I put a Fragment of an equal Weight of the Stone of a middle Hardness, N<sup>o</sup>. 7. labelling each respectively, and continued the Infusion cold for 10 Weeks, when taking out that Fragment which had been infused in common Lime-water, I found it had lost five Grains out of seven; but that Fragment which had been infused in the Lime-water made of  
the



## 18 *Of Lime and Lime-water,*

the slackened Pouders, had lost but three Grains out of seven; and the remaining undissolved Part in the common Lime-water was remarkably more rotten than that in the other.

Left a single Experiment might deceive, I at the same time made another in Concert with the last, *viz.*

*Exp. 29.* I infused a Fragment of the hard solid Calculus, N<sup>o</sup>. 11. weighing four Grains, in Lime-water; and at the same time another Fragment of the same Stone, weighing seven Grains in Lime-water made from the slacken'd Pouders, continuing the Infusion cold 10 Weeks, as in the foregoing Experiment, and the Result was agreeable, *viz.* the Fragment infused in the Lime-water made from the slackened Pouders, had out of the seven Grains lost three, precipitated in the Form of a chalky Matter, and the remaining Part was rotten; but the Fragment in common Lime-water was totally mouldered into a Chalk-like Matter.

*N. B.* There was a remarkable Fœtor in both Fragments, as well that infused in the Lime-water made of the slackened Pouders, as that infused in the Water made of the fresh Lime.

*Coroll.*



*Coroll.* Thus we see that the Lime in the Water fresh made from the calcined Stone, doth, in proportion to its superior caustick Quality, effect a more powerful Comminution of the Parts of the Stone, than that in the Water made from the Pouders slackened and prepared as in the Receipt. We also see that both agree in corroding and precipitating the Parts of some of the hardest Stones, and that they do this even without the Assistance of Heat; and this Effect of the Lime-water in both these, in Experiments on Stones out of the Body, seems to be a strong Illustration and Confirmation of the good Effects and great Importance of the Pouders in the Receipt, which doubtless yield a Lime-water to the Vehicle they were given in, and to the aqueous Parts of our Blood and Juices; the Effects of which appear to be agreeable to those in the foregoing Experiments, in the Scales and Parts of calculous Matter abraded, precipitated, and discharged in the Urine of Persons who take the Medicines. It is highly probable then, that Lime-water fresh made from the calcined Stone, conveying the same corroding fiery Particles diluted, may answer the Purpose of a Lithontriptrick as effectually, as the slackened Pouders in the Receipt taken in Water, small Beer, or Wine and Water, with this Advantage, that it's much less unpleasant; besides that Lime-water may, at the Discretion of the  
Phyfi-



## 20 *Of Spirit of Nitre and of Salt,*

Physician, be render'd more pleasant, as well as be more capable of Improvement, by being variously combined with other Ingredients, no way defeating, but in some Cases improving its Operation.

As to Dr. *Hales's* Proposition of dissolving the Soap in Lime-water, since this turns grumous with Soap, it must be a less congruous Vehicle; and therefore it were better taken alone.

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### S E C T. IV.

#### *Of the comparative Efficacy of Spirit of Nitre and Spirit of Salt, as Solvents of the Stone.*

HAVING examined the Effects of alkaline Salts assisted by Lime, in comminuting the Parts of the Stone, as also those of mere Lime, (which, by the bye, is not a pure Alkali, but possessed of several Properties common to Acids, as well as Alkali's) it may be worth our while to enquire into the Efficacy of some of the strongest mineral Acids, which, notwithstanding the Contrariety that's generally supposed between Acids and Alkali's, seem however to agree both with the Lime and the alkaline Salts in this, that they all owe their  
Activity



Activity to the Particles of the Fire. And here we shall find that Spirit of Nitre, or Aqua fortis, (which is nothing but Spirit of Nitre raised from the Fermentation of Nitre with Vitriol) is a Solvent of the Stone so far superior to Soap-Lees, Soap or Lime-water, as to effect a much more perfect Comminution of its Parts, keep them suspended in its Pores, and make one Fluid with them; and that Spirit of Salt may be not unworthy the Notice of Physicians as a Lithontriptick.

Spirit of Nitre indeed is too corrosive to be taken internally, nor hardly ever given except combined with Spirit of Wine, as in the *Spiritus Nitri dulcis*; yet because the Effects of Spirit of Nitre, or Aqua fortis, and Spirit of Salt, on several of the Calculi above enumerated, will give a considerable Light to our Subject, and furnish us with some useful Conclusions with regard to the absolute and comparative Efficacy of the Solvents, or rather Lithontripticks already considered, as well as give Hints for a proper Use of those mineral Acids themselves, I shall relate the Experiments I made on them.

*Exp.* 30. I poured Aqua fortis on a Fragment of No. 7. a Stone of a middle Hardness: It was dissolved with great Ebullition in the Space of one Day without the Assistance of Heat, so as to be kept suspended in the Menstruum, and make one uniform Fluid with it.

*Exp.*



## 22 *Of Spirit of Nitre and of Salt,*

*Exp.* 31. I poured Aqua fortis on a Fragment of the hard and compact Nucleus, N<sup>o</sup>. 11. which was likewise dissolved, as the former, in 24 Hours, and without Heat.

*Exp.* 32. *March* 14. I poured Aqua fortis on a Fragment of the Nucleus, N<sup>o</sup>. 12. being excessively hard, and polished like a Marble, and weighing 9 Grains; and at the same time I poured on another Fragment of the same Nucleus, weighing eight Grains, a like Proportion of strong Soap-Lees: There arose instantly a great Ebullition from the Fragment immersed in Aqua fortis, which was not observable in that in the Soap-Lees.

*April.* 11. A great Part of the Fragment of the Nucleus in Aqua fortis was dissolved; but there still remained a small Part of it in the Centre undissolved, and which indeed was not compleatly dissolved until *April* 16. *viz.* when it had suffered above a Month's Infusion; but the Fragment of the same Nucleus, by the like cold Infusion in Soap-Lees for the same Space of time, had suffered no sensible Diminution of Hardness nor Weight. Compare *Exp.* 10 and 11. above.

*Exp.* 33. I infused cold, during the same Space of Time mentioned in the preceding Experiments, another Fragment of the same Nucleus, N<sup>o</sup>. 12. weighing 10 Grains, in Spirit of Salt; which although it was not remarkable



markable for raising an Ebullition, as did the Aqua fortis in the foregoing Experiment; yet at the Month's End this Fragment was become very rotten, and capable of being penetrated by a Pin.

*Exp.* 34. To compare the Efficacy of Spirit of Salt and of Soap-Lees, I infused a Fragment of the hard solid Stone, N<sup>o</sup>. 11. in fresh Urine impregnated with Spirit of Salt, in the proportion of 26 Drops of the Spirit to an Ounce of Urine. At the same time I infused another Fragment of the same Stone, N<sup>o</sup>. 11. in fresh Urine impregnated with the same Proportion of Soap-Lees, and kept both Infusions in the same Degree of Heat. The Fragment in the Infusion with Spirit of Salt was become rotten on only five Days Infusion, and in 24 Days had lost, when dried, two Grains out of six; whereas the Fragment in the Infusion with Soap-Lees retained both its Hardness and Weight even after 28 Days Infusion. The Result was agreeable to this in another Experiment I made on Fragments of the hard and solid Stone, N<sup>o</sup>. 5. Compare also *Exp.* 10. above.

*Corol.* 1. The most solid Parts of the human Calculi are not dissolved by a less potent Menstruum than Aqua fortis; and even of it, require a Month's cold Infusion to effect a compleat Solution.



## 24. *Of Spirit of Nitre and of Salt,*

*Corol. 2.* Aqua fortis, or Spirit of Nitre, still maintains its Prerogative of being the only complete Dissolvent of the Stone; and truly no wonder that such compact Nuclei should resist weaker Menstruums, for which we are not yet so happy as to have found any Solvent but what would equally destroy the solid Parts of the human Body.

*Corol. 3.* Spirit of Salt is a Lithontriptick superior in Efficacy to either of the Articles of the preceding Sections; *viz.* Soap-lees, Soap or Lime-water, and next in Strenth to Aqua fortis.

*Exp. 35, 36.* That I might compare the Effects of Spirit of Salt and dulcified Spirit of Nitre, I infused in each of them, diluted in the Proportion of an Ounce of Water to 26 Drops of each, two Fragments of equal Weight of the hard, solid Stone, No. 5. and kept each a Month in a Heat nearly equal to that of Urine in the Bladder.

I also, during the same Space of Time, and in the same Degree of Heat, infused two Fragments of equal Weight of another hard and solid Stone, No. 11. severally in Phials containing Spirit of Salt and dulcified Spirit of Nitre equally diluted with Water. The Result was, that all these Fragments became rotten, and that with the Spirit of  
Salt



Salt as rotten as that with the sweet Spirit of Nitre.

But since it may be objected, That there was in the last Experiments a greater Proportion of the Acid than can be taken internally with Safety; I therefore repeated the Experiment with a smaller Proportion of it; viz.

*Exp. 37.* A Fragment of the solid and hard Stone, N<sup>o</sup>. 5. was infused in the same Degree of Heat as the last mentioned, a Month, in Spirit of Salt diluted in the Proportion of an Ounce of Water to 10 Drops of the Spirit; and it became so rotten, as by a very small Force to moulder like slacked Lime.

Now Spirit of Salt, although a strong mineral Acid, yet is much less corrosive than Spirit of Nitre; and when diluted, is very safely taken internally, and highly esteemed by *Hoffman* as preferable to all other mineral Acids, being of an exceedingly volatile Nature, otherwise than most Acids, and very penetrating; a Diuretick, a Quencher of Thirst, a Resister of Putrefaction, cooling, and a proper Ingredient in refrigerating Ju-  
leps mixed with any grateful Syrups: And as this and Spiritus Nitri dulcis are powerful Acids, no doubt the Use of them in divers Cases of the Stone must be preferable to that of the alkaline Salts and Lime; which, altho'



## 26 *Of Spirit of Nitre and of Salt,*

hitherto used empirically without regard to the Diversity of Temperaments, Habits and Circumstances attending the Disease, ought, doubtless, like all other Medicines, to engage the Attention of the rational Prescriber to these things.

It is well known, that the alkaline Salts and Lime do in all Experiments greatly exalt the animal Salts and Oils, and advance them to an alkaline State; nor can any one doubt, that they produce the like Effects in the Use of *Stephens's* Medicine, who has observed that the Urine of the Persons who take it has a much more rancid Smell, resembling Spirit of Sal Ammoniac; that it makes a greater Ebullition with Oil of Vitriol, and turns greener with Syrup of Violets than Urine in its natural State; but must be led to conclude, that in all Cases where there is a Tendency in the Juices to an alkaline State, the Use of the Medicines before examined must increase it; and that in bilious Habits, where Heat and Thirst prevail, and where-soever there is a Disposition to Putrefaction in the Fluids, their Use is greatly to be suspected; but that Acids, and particularly the Spirit of Salt and Spiritus Nitri dulcis, ought rather to be substituted in their Place. These have formerly been of great Reputation in calculous Cases; nor ought they to be laid aside, being of use not only to correct any putrid Disposition of the Juices, but perhaps  
of



of at least equal Efficacy as Lithontripticks with those alkaline Medicines.

I know it may be objected, That Acids are, by the digestive Powers of the Body, entirely changed into a Salt of another kind: This indeed is true of the vegetable Acids, but not of these mineral Acids, which are not easily overcome by our concoctive Powers, but probably retain their acrimonious, or some Degree of their corrosive Quality (which they possess in common with Lime, and derive likewise from the Fire) till they arrive at the last Stages of the Circulation, or at least at the Bladder \*.

The Spiritus Nitri dulcis is a Combination of the strongest (and strictly speaking the only) Solvent of the Stone with Spirit of Wine, which blunts its caustick Acrimony, and renders its internal Use safe: And as to Spirit of Salt, which, by the preceding Experiments on Stones out of the Body, appears to be next in Efficacy to Spirit of Nitre, as a Solvent of the Stone, *Vanhelmont*, in his Seventh Chapter *De Lithiasi*, has given us a most ample and pertinent Testi-

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mony

\* *Acida quidam Vegetabilium possunt a viribus validi animalis, inprimis accedente ingenti motu, sic mutari ut amissa natura sua acida, abeant in aliud Salis genus. Illa autem acida quæ — Auro, Argento, Mercurioq; solvendis apta, non ita facile superanda per vires coëctrices animantium, sed fortiora his eas ut plurimum destruunt, hincq; venena fere evadunt Animalibus, nisi in Casibus paucissimis exceptis, ubi Putredo & Alcalescentia nimis increfcunt. Boerhaave Elem. Chem.*



## 28 *Of Spirit of Nitre and of Salt,*

mony of the good Effects of its internal Use in these Words:

*Didici quod Spiritus Salis Hispalensis extremo Reverberii Igne, unà cum Terra Figuli destillatus, mane singulo bibitus cum Vino albo pridie e Vase deprompto, nedum Senum tollat mortales Strangurias totusque Diureticus aliquot sanaverit, verum insuper quibus decidens justo major Calculus Rene per aliquot Menses in Vesica moratus erat, tandem minutus meiendoque excretus fuerit: quem tamen antea multoties repetito Introitu in Collum Vesicæ toties per Cathetera repelli introrsum necessum fuerat.*

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### S E C T. V.

*Experiments on the Juices and Decoctions of Onions, Leeks, and Celery.*

**I**T were greatly to be wished, that in describing the Properties of Medicines due Limitations were set to their Praises; that not only their Virtues, but also the Inconveniencies attending their Use, and even their Vices, were faithfully related, with the Circumstances prohibiting as well as those encouraging



couraging their Use. Such a Conduct alone can maintain the Reputation of any Medicine. Nothing, on the contrary, tends more effectually to destroy the Credit of any Remedy, than an unbounded Lavishness in its Praises; which, when found not to stand the Test of Reason and Experience, the applauded Catholicon insensibly dwindles into Disuse, and gives way to some other, each maintaining its Repute for a while, but by and by succeeded by some new one; so that we have a Rotation of the Medicines in Vogue, as of Cloaths in Fashion, to the Reproach of our Profession.

The Design of the present Enquiry then, the Efficacy of other possible Lithontripticks is, not to destroy, but rather secure the Credit of *Stephens's* Medicines upon a lasting Basis. It is not to be supposed, that any Remedy can be discovered of such universal Use and Efficacy in calculous Cases, that it ought to supersede the Administration of all others. In the preceding Section I have hinted at a Circumstance greatly discouraging, if not prohibiting the Use of *Stephens's* Medicines: Besides that, we find from the Observations made by Order of the Royal Academy of Sciences, and communicated by *Morand* (otherwise an Advocate for the Medicines) that the Use of them was found to be inconvenient in Ulcerations of the urinary



Passages, the Acrimony of the Medicines having been observed to increase the Pain in such as made purulent Urine, with or without the Stone.

In those Cases milder Dissolvents are required, and greatly to be wished for. Dr. *Boerhaave* was not without Hopes of the Possibility of the Discovery of a Medicine which might be possessed with a Power of dissolving the Stone, which at the same time was entirely void of any corrosive Quality with respect to the Fibres: We are not yet so happy as to be favoured with this Discovery. Dr. *Lobb*, indeed, has presented the World with a large Catalogue of Dissolvents of the Stone, to be used in our Diet; but the Trials he made of them on Stones out of the Body, want the Confirmation of a like happy Success attending their internal Use: It must however be acknowledged, that the Safety of taking them in large Quantities is a great Recommendation of their Trial. And here it may not be useless to observe, that if ever a fair Trial were desired of the Efficacy of the alkaline Salts and Lime in calculous Cases, it has certainly been obtained in the Use of *Stephens's* Remedy for dissolving the Stone; where, besides three Drams of slacked Lime-Powder, a Quantity of Soap, containing also about three Drams of alkaline Salt, have,  
by



by great Numbers of Patients, been swallowed every Day for many Months, and by some for several Years together; a Constancy which Physicians very rarely find among their Patients; from whence, however, they may learn to be much more liberal than they commonly are in their Doses of those Alterative Medicines, from whence they expect considerable Effects: And it is highly probable, that there are in Nature Vegetables, of which, if the Juices and Decoctions had been taken with the same Liberality and Perseverance as *Stephens's* Medicines have been, we should not fail to have heard of their good Effects in comminuting at least the softer Stones.

To render this probable, and to encourage Trials to this Purpose, which may be made with great Safety, I have selected only three out of *Dr. Lobb's* Catalogue, which are of the most familiar Use in the Kitchen, and withal were most remarkable for their lithontriptick Efficacy on Stones out of the Body: With the Juices and Decoctions of these I made Experiments on the Fragments of the same Stones which had been the Subjects of the foregoing Experiments with Soap-Lees, Soap and Lime-Water, in order that some probable Estimate might be formed of the comparative Efficacy of each: And inasmuch as the Decoctions and long-con-



### 32 *Experiments on the Juices, &c.*

tinued warm Infusions of Leeks and Onions, which have in a great measure lost their volatile and acrid Parts, were found to effect a Comminution of the Parts of the Calculi infused in them, as well as their Juices; it follows, *First*, That their Activity, as Lithontripticks, does not principally depend on their acrid and volatile Parts. And, *Secondly*, We are hence encouraged to the Use of these Vegetables when boiled in Broths, and in Substance in large Quantities, as being much milder than the strong mineral Acids of the last Section, or the alkaline Medicines of the preceding Sections, and consequently preferable where we have Reason to apprehend Danger from the too great Irritation or Corrosion of either of them.

I proceed to relate,

#### *I. The Experiments on the Juices and Decoctions of Onions.*

*Exp. 38.* is one of Dr. *Hale's*, mentioned in his *Hæmæstaticks*; viz. “ A hard Stone  
“ taken out of a human Body being put  
“ into a Pot with the Pulp of Onions, and  
“ kept in a Hot-bed 13 Days, the Surface  
“ of it was become so soft, that he could  
“ scrape it off with his Nail; and the same  
“ Event happened when he put a small  
“ Calcu-



“ Calculus into Onion-juice mixed with  
“ Water, which was kept warm in a  
“ Chimney - corner for fifteen Days, in  
“ which Liquor the reddish, gritty Gravel  
“ of two other Persons was dissolved: From  
“ whence he concludes, that Onions fre-  
“ quently eaten should, if not waste, yet  
“ prevent the Increase of the Calculus.

*Exp.* 39. A Fragment of the softer Stone, No. 1. weighing eight Grains, another of a Stone of a middle Hardness, No. 7. weighing 42 Grains, and a third of the solid hard one, No. 11. weighing 64 Grains, having severally been previously infused cold 13 Hours in a Mixture of equal Parts of the Juice of Onions and Water, were digested eight Hours in the same in a constant moderate Heat; when I found the Fragment of No. 1. to be become a little softer on its Surface, but no sensible Impression was made on either of the two others. I then suffered all three to infuse 21 Days in the same Mixture (warm for the greater part of the Time) when the Fragment of the softer Stone, No. 1. had lost three Grains out of eight, and was become very easily penetrable and divisible into Sand, by thrusting a Pin into it; but the other two retained their Hardness, and had not lost, but gained in Weight.



## 34 *Experiments on the Juices, &c.*

*Exp.* 40. Four of the Gravel-stones, No. 15. of a moderate Hardness, on an Infusion of 14 Days in a Mixture of equal Parts of Juice of Onions and Water, in a Heat nearly equal to that of Urine in the Bladder, became very rotten; and on continuing the Infusion 15 Days longer, were so softened as to be reducible to Pouder like Chalk by scraping with my Nail.

*N. B.* In *Lobb's* Experiments, the Decoction of Onions was also found greatly to soften some Stones digested in them.

*Coroll.* The Juice of Onions then, as far as we can confide in any Evidence from Experiment made on Stones out of the Body, appears to be a Lithontriptick with regard to the less hard Calculi, although inferior in Efficacy to Soap-Lees, the Decoction of Soap and Lime-Water; as appears by comparing the Effects of these on Fragments of the same Stones in *Exp.* 1, 3, 4, 6, 16, 17, 21, 22, above.



## II. *Experiments on the Juice and Decoction of Leeks.*

*Exp. 41.* A Fragment of the softer Stone, No. 1. having been infused cold in the Juice of Leeks three Days, was digested in a Mixture of equal Parts of the same Juice and Water in a Sand-heat 12 Hours: Its Surface was in part consumed, and what remained was easily friable into Sand.

The like Event happened to another Fragment of the same Stone, infused and digested in the like manner with the Decoction of Leeks in Water.

*Exp. 42.* A Fragment of the hard and compact Stone, No. 11. was infused cold in the Juice of Leeks six Days, and then digested in a Sand-heat 12 Hours in a Mixture of equal Parts of Juice of Leeks and Water, and then infused cold 12 Hours; when it was become rotten.

*Exp. 43, 44.* Several Fragments of the hard Mulberry-stones, No. 4. and No. 9. were infused and digested severally in the Juice of Leeks diluted, and in its Decoction, in like manner as the Fragment of No. 11. in *Exp. 42.* and as the Fragment of No. 1. in



in *Exp.* 41. but neither suffered any Alteration in point of Hardness.

*Coroll.* The Juice of Leeks then appears to have a considerable Effect, not only on the softer, but some of the harder Stones, and a greater than the Juice of Onions had on the same Stones; as is evident from *Exp.* 39, 41, and 42, compared; although it has no Effect on the hard Mulberry-stones.

### III. *Experiments on the Juice of Cellery.*

*Exp.* 45, 46, 47. A Fragment of the softer Stone, N<sup>o</sup>. 1. another of N<sup>o</sup>. 7. the Stone of a middle Hardness, and a third of N<sup>o</sup>. 11. the hard and compact ones, were digested in a Sand-heat about 17 Hours in the Juice of Cellery: The only Effect remarkable was, that the Surface of the Fragment of N<sup>o</sup>. 1. was become so soft, that I could easily penetrate it with my Nail. I then suffered all three to steep cold 22 Hours longer in the same Juice; when the Fragment of N<sup>o</sup>. 1. was become, in its external Part, soft like Sand, and in the internal very brittle; and the Fragment of N<sup>o</sup>. 11. from a very hard and compact State, was become very friable; as was also that of N<sup>o</sup>. 7.

See



See in *Exp.* 1. and 16. the Effects of Soap-Lees and Soap on Fragments of the same Stones: From whence it appears, that the Juice of Cellery acts upon them much like Soap-Lees, but requires a longer Time to produce the same Effects. We ought not then to despair of finding out Lithontripticks with respect at least unto the softer Calculi, even among the Juices of Vegetables.

Upon a summary View of the preceding Experiments and Observations, the chief Result seems to be,

1. That the principal Ingredients of the Remedy for the Stone, published by *Joanna Stephens*, appear, by Experiments made on a Variety of Stones out of the Body, concurring with the Experience of the happy Success of their internal Use, to be the most efficacious Lithontriptick yet known, except the strong mineral Acids of Spirit of Nitre and Spirit of Salt; and therefore, as the long continued Use of them appears, by many Experiments, to have been generally very safe, and any Person troubled with the Stone cannot, by the Search of the Catheter, or any other Experiment, be assured, but that his may be of such a Degree of Hardness, as to give way to these Medicines; it seems very well worth his while to try their Efficacy,



cacy, rather than run the Hazard of one of the most terrible and dangerous Operations in Surgery ; to which he need not have Recourse, but as to the last Refuge, when disappointed of the Use of the other.

2. That, of the several Articles examined, the only absolute Solvent of the Stone is Spirit of Nitre ; the rest are rather Lithontriptick, of which the strongest in Efficacy is Spirit of Salt ; the next, Soap-Lees ; the next, Lime-Water ; and probably the Juices of Onions, Leeks, and Cellery may deserve a Place among the milder Lithontripticks.

3. Since these several Lithontripticks are of a different and opposite Nature, some being alkaline, some acid, others neutral, some more, some less corrosive ; and since there is a great Diversity in the several Habits of Body, and different Symptoms and Circumstances which attend the Disease passing under the same general Name of the Stone ; it will still require the Sagacity of a Physician to determine which of these Medicines is to be preferred ; when it may be proper to use the milder, when the sharper, and when to premise or interpose the Use of one or the other.

4. The



4. The Author of the foregoing Experiments is sensible, that, in order to the establishing certain Rules for adapting the respective Medicines to the different Circumstances of the Distemper, further Observations, drawn from the several Appearances in the Sick, and the various Symptoms diversifying each Case in which those several Medicines shall have been given, are still wanting; and he shall think himself abundantly rewarded, if the Hints he has given shall engage the Gentlemen of the Profession to make and communicate them for the Publick Good.

*Dublin, Nov. 26.*

1741.

The



As the Author of the foregoing Exposition  
 is sensible that in order to the effec-  
 tually carrying out his plan for adapting the re-  
 spective Meditations to the different Circum-  
 stances of the Liturgy, further Observa-  
 tions, drawn from the several Appearances  
 in the Bible, and the various Symptoms of  
 Religion, such as in which those several  
 Meditations shall have been given, are still  
 wanting; and he will think himself obliged  
 to make and communicate them for the  
 Publick Good.

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## The Case of JAMES JURIN, M. D.

FOR some years past I have been incommoded with gravel of the common red sort, but by taking from time to time a decoction of the purging waters with manna and *Glauber's* salt, I generally got rid of it pretty easily, it not being often so large as to occasion any considerable pain.

But having neglected to take this medicine for about a twelvemonth, or somewhat more, about *Christmas* 1740 I was seized with a severe nephritick fit, accompanied, as usual, with frequent vomiting. This held me for three or four days, when, the stone having passed the ureter into the bladder, the vomiting and pain ceased; and a day or two after, upon taking my usual purge, I voided a rugged, red stone, of the size of a small pea.

I now thought the affair was over, and went about my business as usual. But in the months of *January* and *February* following, I was troubled with an unusual frequent provocation to make water, especially when abroad in the cold. This led me to reflect, that the Stone I had voided, was hardly big enough to occasion so severe a Fit as I had suf-

E

fered



## 42 *The Case of James Jurin, M. D.*

ferred the *Christmasts* before, and made me suspect, that, besides that small stone, a larger might have passed the ureter at the same time, and might now be in the bladder.

And in this suspicion I was farther confirmed, upon finding towards the latter end of *February*, that my urine would sometimes be suddenly stopped, while it was coming away in a full stream, and that this stoppage was accompanied with an uneasy sensation at the neck of the bladder, as if a stone had presented itself there, but was too big to pass. Another remark I made was, that for almost two months I had not voided any gravel, contrary to my usual custom for some years past; and this made me think, that the fabulous particles of my urine, from which the gravel had been usually formed, were now all bestowed in increasing the bulk of the stone by a constant accretion. The apprehension of this, and that the stone would in a while become too big for being voided at all, put me upon using all the lenient means I could think of for getting rid of it, but without effect.

While I was in this condition, I had occasion to go about 14 miles out of town, about the beginning of *March*, and upon driving very fast, and some part of the way happening to be a little rough, I felt a considerable pain about the neck of the bladder, which gradually increasing upon me with a violent provocation to make water, upon getting out



of the coach, I found I made bloody water to such a degree, that it looked as if it were almost all blood; and this happened to me several times before I got to my journey's end, the last part of which I was obliged to perform on foot, not being able to bear the coach any longer.

After staying two or three hours, and having taken a basin of water-gruel with honey dissolved in it, I set out on my return home; and by walking some miles of the roughest part of the way, I got to town with somewhat less pain than I had felt in going, tho' not without several times making bloody water: But when I came upon the stones, I could not bear the motion of the coach, by reason of the excessive pain it occasioned, and was therefore obliged to get out and walk home; which I did in great pain, tho' much less than in the coach.

From this time I could not bear the motion of my own chariot upon the stones, tho' not an uneasy one, being hung with the common springs, without great pain and making bloody water, if I went any thing more than a footpace: nor could I walk to any considerable distance without the same complaints, having sometimes made bloody water upon walking only half a mile, and that very gently. This I ascribed to the effects of my journey, in which the coat of the bladder having been much fretted and wounded by the stone, it



#### 44 *The Case of James Jurin, M. D.*

was thereby render'd susceptible of injury from such motion as had not before given me any inconvenience. And that this was the true reason, seemed to be confirmed from my bearing the slow motion of the chariot pretty well, when I first set out in a morning, and my growing by degrees more and more uneasy the longer I used it; as likewise from my not failing to make bloody water in case I used it again in the afternoon; so that in the afternoons I was obliged either to walk, which I could only do very gently and for a little way, or else to make use of a chair.

Being now fully persuaded, as well from what has been above related, as from several other circumstances, that I had a stone in my bladder, and that too big to get rid of by ordinary means, I began seriously to consider what course I should take to avoid being cut.

Mrs. *Stephens's* medicines, I was sensible, had given great relief to many persons in my condition; and some numbers had to appearance been cured by them: But, on the other hand, I considered, that of those who had died and been opened, after they were reported to be cured by taking her medicines, there had not been one, but what had a stone or stones found in the bladder. To this I added, that the number of those, who had taken those medicines ineffectually, was very great: and it fell in my way to be informed of not a few instances of such, as after taking them  
for



for many months together without any benefit, had submitted to be cut, rather than go on any longer with a medicine so extremely nauseous, and which had greatly increased their pains without bringing any thing away.

These considerations, joined to the knowledge I had of the weakness of my own stomach, which could ill bear any nauseous medicines, especially in large quantities and often repeated, made me turn my thoughts to the Lixivium, or Lye, of which soap is made, by boiling it with oil or fat.

This Lixivium, I knew, had, notwithstanding its caustick quality, been taken without inconvenience by several persons; and tho' the good effects of it, which had come to my knowledge, were not very considerable, yet that, I thought, might be owing to the smallness of the dose it had been given in. And from a careful perusal and consideration of the experiments made by my ingenious and learned friend, to whom the world is so much indebted upon this and many other accounts, the Rev. Dr. *Stephen Hales*, I was greatly inclined to think, that the virtue of the soap resided principally in the lye from which it was made; and that the efficacy of the lye for dissolving the stone, was rendered less, as well as the medicine was made much more nauseous, by the addition of oil or fat to make it into soap.



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But an experiment, which came a little nearer to my own case, determined me to make use of this medicine. I mixed a Theaspoon-full of the Lixivium, with about two ounces of river water, and by a cold infusion in this mixture, the stone I had voided about *Christmasts*, was dissolved in two days.

Resolving therefore to enter into a course of this medicine, I began it upon the 6th or 7th of *March*, 1740. for I kept no journal, and continued it constantly for above six months, when by the blessing of God, I found myself perfectly cured. But in order to make this relation as useful as I can, I shall particularly describe

- I. The sort of Lixivium I used.
- II. The dose.
- III. The vehicle I took it in.
- IV. The regimen I observed.
- V. The observations I made during the use of it, and the success.

I. The Lixivium, or Lye, which I at first made use of, was what is commonly called the capital soap lees, of a due strength for making soap, which is about one sixth part specifically heavier than river water; of this I took in all about six ounces. What I afterwards took and constantly kept to, was the Lixivium of the first running. This is much stronger both of the lime and potash, than  
the



the capital soap lees, it being, when clear, above one fifth part specifically heavier than river water ; and if it be taken up before it be settled, as was done for me, is so full of lime as to look milky : but after standing some time, most of the lime falls to the bottom in a large sediment, leaving the liquor clear. This I always shook up when I used it, so as to take the liquor white and turbid ; which I did from an opinion that the virtue of the medicine lay principally in the lime, it appearing from Dr. *Hales's* experiments, as well as from some since made by myself, that a strong lime water alone will dissolve the stone out of the bladder, whereas a lye from the potash alone does nothing towards it. Nor do I think it unlikely, that quick lime alone taken in a proper vehicle, may dissolve the stone in the bladder without other assistance.

II. The dose I at first took was twenty drops twice a-day, from which, finding no inconvenience to my stomach or bowels, on the second day I took the same dose three times : I then proceeded, by adding every day ten drops to each dose, to take thirty, forty, fifty, sixty drops three times a day. I then gave over dropping the Lixivium, and took a theaspoon-full three times a day, in a vehicle somewhat larger than before ; then the same quantity four times a day ; and soon after I came to take two theaspoons full at a dose, twice a-day, and one at a dose two other times a day,



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to which quantity I arrived before the end of *March*, and continued for above five months: but now and then I went farther, taking seven, eight, nine thea-spoons full in a day, sometimes by taking the medicine oftener, and sometimes by taking three thea-spoons full for one dose. The thea-spoon I used, held 114 drops of the Lixivium from a small vial; and as I poured into the thea-spoon till it ran over, each thea-spoon-full was at least 120 drops; so that I took usually 720 drops in the day, and sometimes 840, 960, or 1080. But as this is a very uncertain way of measuring, because a drop of any liquor is larger or smaller in proportion to the surface it hangs by, it may be of more use to observe, that an ounce Troy of the Lixivium, thick and milky as I took it, makes nearly 6  $\frac{1}{2}$  thea-spoons full; so that I usually took about an ounce Troy each day, and sometimes an ounce and a quarter or an ounce and a half.

As for the times of taking the medicine, I could by no means be regular, on account of my business; and therefore took the largest doses at my dinner and supper, one of the smaller ones at breakfast, and the rest at such times as I happened to be at home.

III. The vehicles I used, were of various kinds; in the morning sometimes milk and tea sweetned with honey, balsamick syrup, or sugar; sometimes milk and limewater sweetned in the same manner: in the afternoon  
sometimes



sometimes the same liquors as in the morning, sometimes limewater and honey, with a glass of sack, which made it sit better on my stomach, and sometimes small beer only. What I used at dinner and supper was a mixture of small beer and common sweet ale from the ale-house. Into a glass holding about three quarters of a pint, I put my dose of two, or sometimes three thea-spoons full of lye; then filled the glass with about equal parts of the two liquors, and after the first draught, which was disagreeable enough, I added more small beer and ale, which made the second and third draught no way offensive.

IV. The Regimen I observed, was only to abstain from every thing that could be suspected of lessening the efficacy of my medicine, which being highly alkaline, I forbore all vinegar, fruit and wine, except now and then one glass of sack or other sweet wine, which I was sometimes obliged to take with the lime water and honey in an afternoon as above-mentioned. In all other things I observed no regimen, living upon common food of all kinds, and for exercise, my business gave me as much and more than I could well bear.

V. During this course,

I. The first observation I made was, that the provocations to make water were more frequent and pressing than before, as also that  
I had



I had more pain in making it, and especially after it was made; but this I bore with patience, it being naturally to be expected from so sharp a medicine coming into a bladder fretted and wounded by the stone, as mine was by the constant use of the chariot. To obviate this as well as I could, I made use of all the springs that have been invented, both within and without the chariot, notwithstanding all which, I could only go a foot-pace upon the stones, and could hardly ever use it twice a-day, without making bloody water.

2. My second observation, which gave me great comfort amidst the pains I endured, and which from the beginning of the course I had constantly attended to and waited for, was that upon my coming to take three or four theaspoonfuls of the lye in a day; my water did not at all furr the chamber pot, as usual, how long soever it was suffered to stand therein. This made me not only conclude, that I was safe from any farther increase of the stone, but also gave me hopes that it was now beginning to dissolve. For it was reasonable to think, that whatever could prevent the fabulous matter from precipitating and concreting in the chamber pot when the water was cold, must not only hinder its doing so while warm within the bladder, but must also be acting upon the stone towards a dissolution. This observation



vation therefore I would particularly recommend to all persons, who shall enter into a like course.

3. Soon after, I had the pleasure of observing an oleaginous coloured film upon the surface of the urine, after it had stood some hours, and likewise a calcarious sediment in pretty large quantity at the bottom. This had the appearance of a confirmation of Dr. *Hales's* hypothesis, that the particles of the lime and pot-ash dissolve the stone by licking off that oily substance, which is the band of union to the fabulous particles, I flattering myself with the imagination, that the oleaginous film arose from that oily substance, which had before bound the particles of the stone together; and that the calcarious sediment consisted partly of those particles now loosened from the surface of the stone, and partly of the particles of the lime, which, upon the water's cooling, might have separated from the oleaginous particles, which composed the film, just as the particles of the ochre separate from those, which compose the coloured oleaginous film, in *Tunbridge* and other chalybeate waters, upon standing some time exposed to the open Air. But here it is to be observed, that lime-water alone, upon standing exposed to the Air, will contract such a coloured film upon the surface.

4. The



4. The next observation I made was, that my urine would sometimes be whitish and turbid when first made, especially what was discharged three or four hours after taking my largest dose: and this urine deposited a calcareous sediment in larger quantity, and the oleaginous film upon the surface was thicker than before. This gave me great hopes of being speedily rid of my complaint. For I had great reason to think, that I had no stone in the bladder but what had passed the ureter about *Christmas*; and consequently could have had little more than two months growth in the bladder, before I began with my medicine: forasmuch as the only nephritick fit I had had, was that about *Christmas*, and I could be pretty sure I had no stone in the bladder before that time, as having been obliged to take frequent journeys out of town the latter end of the year, when I had drove very fast in a rough hung chariot, such as are usually kept for hire, without suffering any pain or inconvenience. So that if the stone were but a little wasted, there was reason to think it would be rendred small enough to pass the urethra.

5. About the latter end of *June* I grew sensibly easier, and from the beginning of *July* I felt no pain, tho' I had as yet voided no flakes, nor bits of stone, nor any thing more than



than the calcarious matter abovementioned. I could now not only go about in my own chariot, but did once or twice go in another much less easy, without pain or bloody water.

6. On the tenth of *July* I voided a small, smooth stone, nearly of the shape and size of an oat, which came away so imperceptibly, that had I not at that time made use of a chamber pot, I should not have known that I had voided it. This stone was of a reddish colour, but paler than the gravel I had formerly been used to void: its surface was very smooth, and was penetrated with small roundish holes, much like those made in books or in wood when worm eaten.

On the 21<sup>st</sup> of the same month I voided a second stone, shorter, but of more than twice the diameter of the former; in colour, smoothness of surface, and perforations, like the other. This I plainly perceived, when it was passing, but with little or no pain.

*August* the 6<sup>th</sup> I voided a third stone, somewhat less than the second, but like it in all other respects. And about the beginning of *September* I passed another much smaller, about the size of a corking pin's head.

Each of these stones was dissolved in two or three days by a cold Infusion in strong lime water.



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Some time after voiding the last of these stones, as I now thought myself quite well, being able to bear a hackney coach, or the roughest hired chariot, upon the Stones, or to walk three or four miles and sometimes more without the least inconvenience, I began to abate of the quantity of my medicine, coming from six or more, to four, afterwards to three, and then to two thea spoonfuls in a day. Now also I drank red wine moderately, and eat fruit, and used Vinegar as before my illness: and for the greatest part of *October* and *November* I forbore any use of the medicine, when I found my urine again furr'd the chamber pot, and I sometimes voided a little small gravel, as I had formerly been accustomed.

But in *December* last, upon using a very rough chariot for some days, while my own was repairing, I had a little return of my former complaints, upon which I returned to the use of the Lixivium, taking about three thea spoonfuls, or about half an ounce in a day, and having done this for about a week, I voided a small rough, reddish stone, and then was perfectly easy. Since which, I continue to take two thea spoonfuls in a day, in small beer and ale, or small beer with a glass of sack or sweet Mountain, which quantity I find pretty generally keeps my urine from furring the chamber pot, and therefore I hope may be sufficient to prevent the generation of  
fresh



fresh gravel, either in the kidneys or in the bladder.

From the severity of the pains I had undergone, and the smoothness of the three stones I voided in *July* and *August*, I make no doubt but they had once been much larger. Nor is it improbable, that I might have voided several others, besides what are above-mentioned. For as some of those came away insensibly, and others with no more pain than what I often had in making water only, it is not likely that all should come away when I used a chamber pot, and none at other times, especially as I was usually absent from home for great part of the Day.

But whether those I voided, had originally been distinct stones, or parts of one larger stone, cannot easily be determined; though I must needs say, I incline to the latter Opinion: and it is not difficult to conceive, how the medicated urine, after eating out the more soluble parts of a stone answering to the perforations above-mentioned, might afterwards corrode the partitions between those perforations, and thereby reduce a large stone into several smaller: and then the edges and thinner parts of these being dissolved, while the thicker parts were less wasted, they might easily be brought to the form they were voided in.

I shall



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I shall not pretend to make any deductions from this case, as it is a single one, and not yet corroborated by any other. But possibly this plain relation of matter of fact, may give encouragement to Physicians to make farther tryal of the medicine, and I heartily wish the like happy success to all those who shall hereafter have occasion to make use of it.

Feb. 4. 1741-2.

*F I N I S.*

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*E R R A T A.*

Page 28. l. 8. for *aliquot* read *aliquos*.

Page 29. l. 15. after *then* add *into*.

E. D. I.

*Q. Med. Twinkl*















