

**The works of the late Joseph Else, F.R.S. surgeon to St. Thomas's Hospital, and member of the Royal Academy of Surgery at Paris : containing a treatise on the hydrocele, and other papers on different subjects in surgery. To which is added, an appendix, containing some cases of the hydrocele, with a comparison of the different methods of treating it by caustic and seton by Geo. Vaux, surgeon.**

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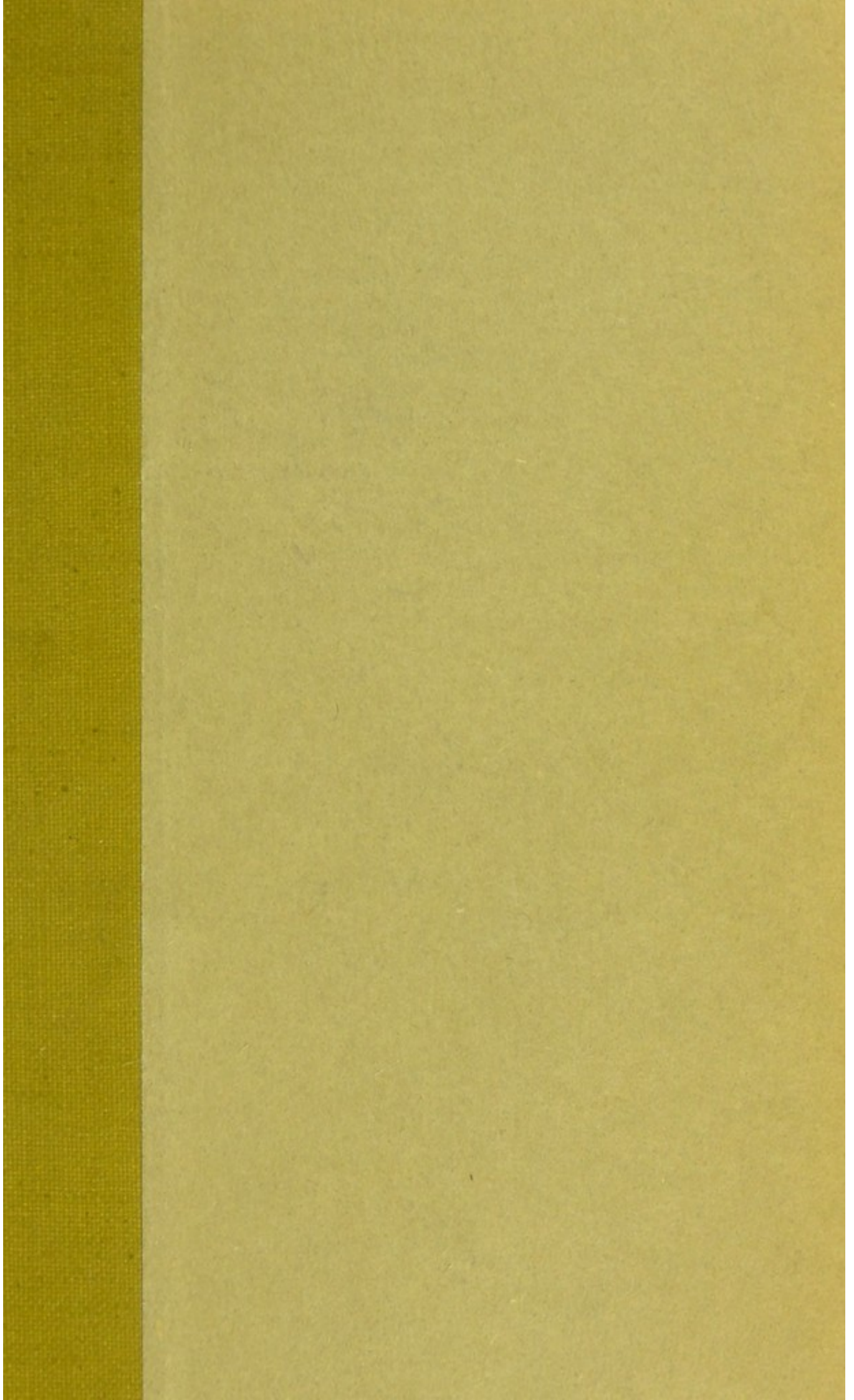
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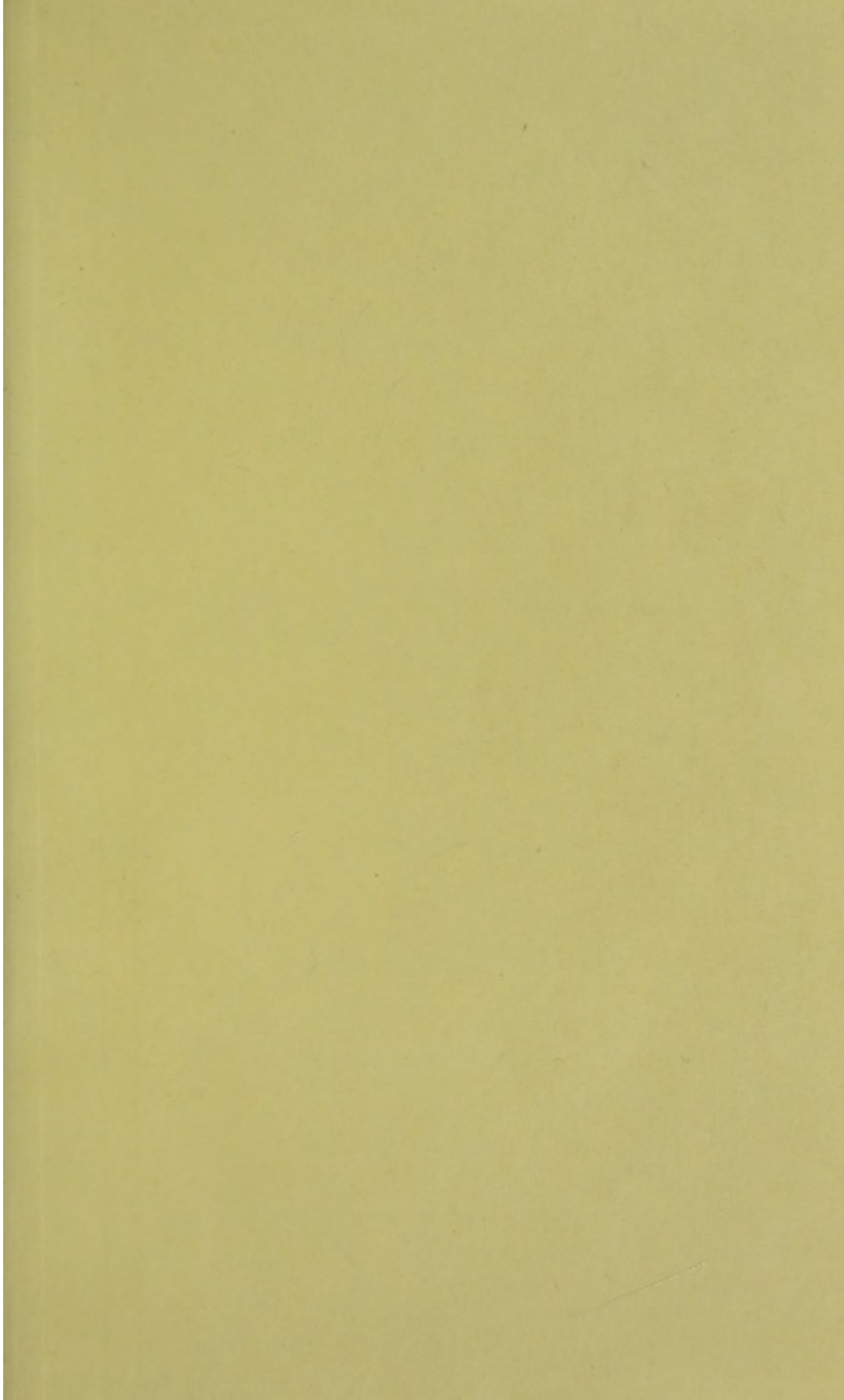
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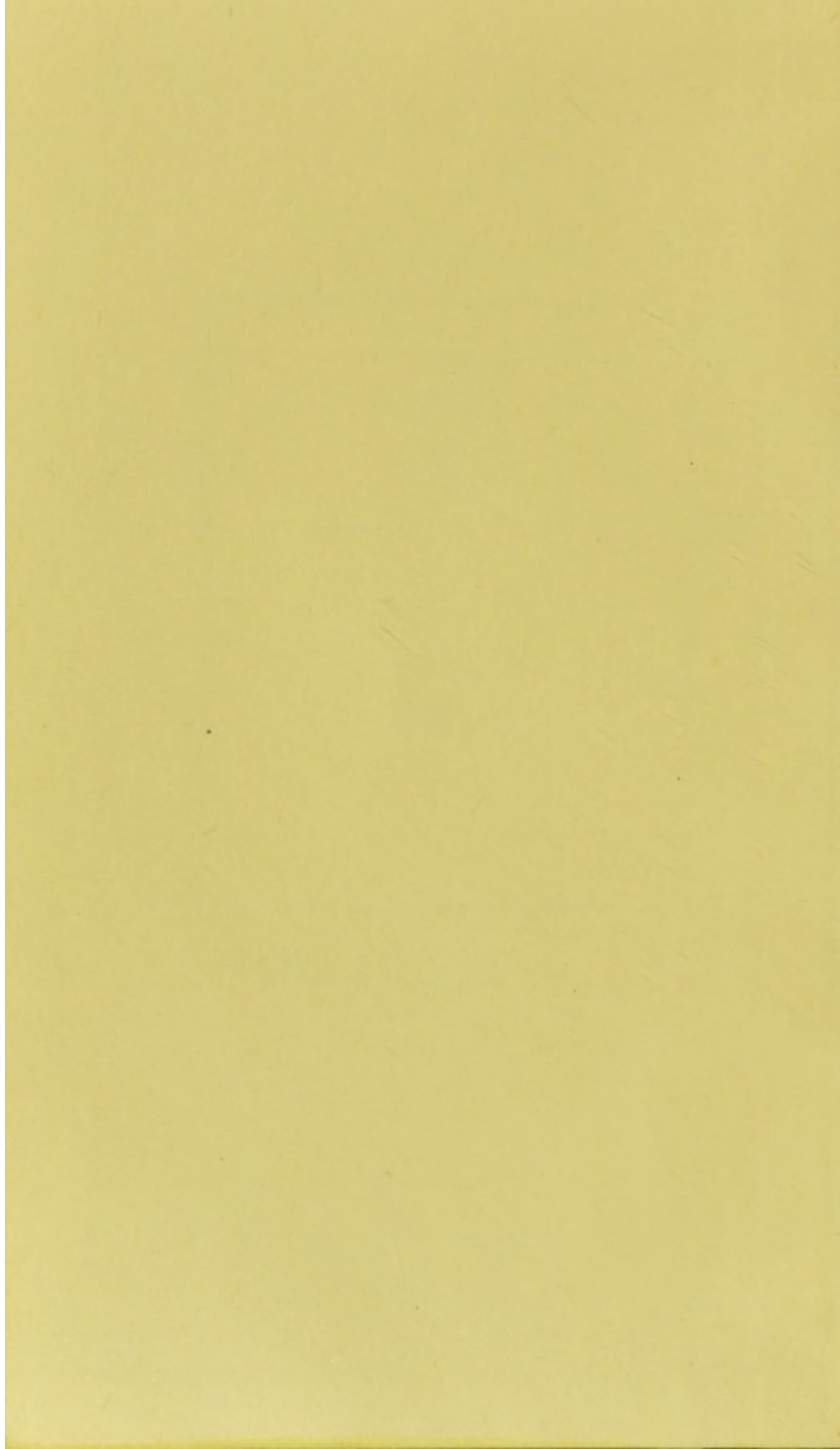
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T H E  
W O R K S

OF THE LATE

*JOSEPH ELSE, F.R.S.*

SURGEON TO ST. THOMAS'S HOSPITAL, AND MEMBER OF  
THE ROYAL ACADEMY OF SURGERY AT PARIS.

CONTAINING

A TREATISE ON THE HYDROCELE,  
AND OTHER PAPERS ON DIFFERENT  
SUBJECTS IN SURGERY.

TO WHICH IS ADDED,

A N A P P E N D I X,

Containing some Cases of the Hydrocele, with a compari-  
son of the different Methods of treating it by Caustic  
and Seton.

BY GEO. VAUX, SURGEON.

---

L O N D O N :

PRINTED FOR J. JOHNSON, NO. 72, AND G. WILKIE,  
NO. 71, ST. PAUL'S CHURCH-YARD. 1782.



W. R. R. S.

1875

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1875

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## A D V E R T I S E M E N T.

**T**HE valuable information contained in Mr. Elfe's Treatise on the Hydrocele, will, it is presumed, render any apology for a republication of it unnecessary.

The principal view of the author, was to recommend, for a radical cure of this disease, the operation by caustic, as a remedy in point of ease, expedition, safety, and efficacy, far superior to every other that has been proposed, and particularly to the operation by a seton: His opinion in this respect, as must appear to every impartial reader, the author has supported upon most reasonable grounds.

In confirmation of the practice laid down by Mr. Elfe, I have embraced this opportunity of subjoining in an appendix, some cases of this disease, which have come within my  
own



own observation, and which if they do not determine the dispute, will not I hope be thought unworthy of the place assigned them.

The few other papers on surgical subjects that were published by the same author, are placed after his treatise on the Hydrocele, that the public may have ready access to the observations of so respectable a practitioner.

*Throgmorton-Street,* }  
*April 29. 1782.* }

G. VAUX.

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AN  
E S S A Y  
ON THE CURE OF THE  
H Y D R O C E L E  
OF THE  
TUNICA VAGINALIS TESTIS.

---

**T**HE Hydrocele of the Tunica Vaginalis, is a preternatural accumulation of a watery fluid between that membrane and the Tunica Albuginea, which immediately invests the vascular substance of the Testis.

This disease is said to arise from a variety of causes. Too great laxity of the lymphatic vessels is assigned as one cause; a defect in the absorbent system as another; and a stimulus for a third. Perhaps

at different times, all these may concur to form it.—I might add, that probably it may happen sometimes from the rupture of a lymphatic vessel. I have known some patients, who affirmed that they have sensibly felt something burst within the Scrotum; after which, a Hydrocele of the Tunica Vaginalis has begun to form\*.

\* A gentleman had a Hernia Humoralis, for which he was attended by a surgeon, who, as he informed me, fomented him twice a day for a long time, but never suspended the Scrotum. The Testis, for three months, continued greatly enlarged, after which time it was reduced nearly to its natural size: but as he was sitting one night in the gallery at the play, when the house was exceeding hot, he perceived something snap, as he expressed it, within the Scrotum, and thought himself immediately sensible of an extravasation on the inside. Being much alarmed, he came out of the house, and examining the Scrotum, found it, as he had imagined, increased in size. This swelling gradually advanced, produced a Hydrocele of the Tunica Vaginalis, for which I tapped him several times, and at last radically cured him by caustic.

In like manner patients are sometimes sensible of the ruptures of large sanguineous veins. See London Medical Observations, vol. iii. art. 19.

The

The celebrated Professor Morgagni supposes the disease produced by Hydatids forming within the Tunica Vaginalis, on the body of the Testis, and on the Epididimis, which bursting, discharge their contents within the coat, and so produce the accumulation. The appearances which Morgagni describes, and supposes to be the remains of ruptured Hydatids, I took notice of several years ago in sound Testicles, where no Hydrocele had ever existed: from which time I have never failed seeing, and often demonstrating them, in all the adult Testicles I have examined. And since the publication of his work, *De Causis & Sedib. Morbor.* I have looked for them in subjects of all ages, and have hitherto found them as constantly in infants as adults.

The symptoms by which this disease may be distinguished from others affecting the Scrotum, are described in so masterly a manner by the latest writers on this subject, particularly by our own countrymen\*,

\* Samuel Sharpe, Douglas, Pott.

that it is unnecessary for me to point them out. I will only observe, that no rule hitherto laid down, will afford us an infallible criterion of its difference from some other disorders of the Scrotum. Hence surgeons of the very first rank, have at one time mistaken the Hydrocele for the scirrhous Testicle; and at another, the scirrhous Testicle for the Hydrocele. I have seen more than one instance, where, after due consultation, castration has been advised, upon the presumption of a scirrhous Testicle; and where the discovery was sometimes made before, but, indeed, sometimes not till after the operation was completed, that the Testicle was found, and that the deception was owing to a thickening and induration of the Tunica Vaginalis distended with water.

As the Hydrocele is so liable to be mistaken for a scirrhous Testicle, I shall mention two or three of its most distinguishing signs.

First,

First, The Spermatic Cord is in a found state in the Hydrocele: it is generally thickened and diseased in a scirrhous Testicle.

Second, A fluctuation may be perceived by an alternate pressure with the hands on the lower and anterior part of the Scrotum in the Hydrocele; or an undulation may be felt upon patting with one hand, whilst the other is applied to the opposite side of the tumour.

Third, The surface of the Hydrocele is generally smooth, the body of the Testicle lying hid in the water.—Hardness, with inequalities, discover the scirrhous.

The Public is much indebted to Mr. Samuel Sharpe \* for his instructions concerning this disease: and I think, if his division of the Hydrocele into two species only, had been adhered to by later wri-

\* Operations of Surgery, p. 34.



ters, it would have made the knowledge of every species of watery tumour in the Scrotum more easily attainable by students. As collections of water do not form more frequently in the Spermatic Cord, cellular substance of the Scrotum, outer surface of the Tunica Vaginalis, and within the body of the Testis, than they do in the Thorax, Abdomen, Pelvis, or almost any other part of the body, there seems to be no reason to divide more minutely those of the Scrotum, as Mr. Samuel Sharpe's division was fully sufficient for every practical purpose.

But my principal design in this Essay, being to treat of the Cure of the disease, I shall hasten to the consideration of the several methods prescribed by the Moderns, particularly by the writers of this country; such are the tent, the seton, incision, excision of the Tunica Vaginalis, and the application of a caustic.—Every one of which was, however, in use among the Ancients.

With

With respect to the first: A tent is introduced through a small puncture of the Tunica Vaginalis, with a view of exciting such a degree of inflammation, as will produce an adhesion of the Tunica Vaginalis to the Testis; but if no other objection could be brought against this method, it is sufficient to observe, that those who have recommended it, admit that it is not always effectual. Besides, I hope to make it appear probable, that when it does accomplish the cure, it is not in the way which has been hitherto supposed.

From the account given of the seton, it seems preferable to the tent; but it is allowed not to be a perfect method, and should be used only where the surgeon may suppose the other methods of incision and caustic would be improper, or where the patient refuses to submit to them: at the same time it is owned, that ill consequences do sometimes attend it\*.

\* Pott on the Hydrocele, p. 178 and 179.

Mr. Pott says, that the appearances which follow the operation by seton, resemble those caused by a Hernia Humoralis\*, and that the cure is performed by adhesion in consequence of inflammation. Now, though inflammation may frequently procure adhesion, yet that is not always the case, at least in the Testicle; for I have seen some instances, where an Hydrocele has immediately followed the Hernia Humoralis, when the patients have ignorantly supposed the first to be the cause of the second disease †. Nay, I have now by me a Testicle, which was extirpated upon a supposition of its being scirrhous; but being examined after the operation, the disease appeared to be an abscess formed in the centre of it. And though the body of the Testis is enlarged to four times its natural size, and the Tunica Vaginalis, probably by inflamma-

\* Pott in his Pamphlet on the Hydrocele, 1771, p. 12 and 39.

† Vide note at page 2d.

tion,

tion, has six times its natural thickness, yet there is not the least adhesion between them; and the Testis is seen lying as loose within its thickened tunic, as the kernel of a dried nut does within its shell, except where there is a natural adhesion between them at the posterior part.

Since the first edition of this Essay, my ingenious friend and colleague, Mr. Martin, used the seton in two cases for the cure of the Hydrocele, at the same time that I applied a caustic to a third, with a view of determining to which method the preference should be given. He has favoured me with the following account, that, besides what is advanced in this work, surgeons may be enabled better to judge for themselves.

“ John Merry, aged twenty-seven years,  
 “ was admitted into St. Thomas’s Hospital,  
 “ the 1st of August, 1771, for an Hydro-  
 “ cele of the Tunica Vaginalis of the left  
 “ side, which he had first perceived about  
 “ nine

“ nine months before. It gradually in-  
 “ creased, and gave him, at times, some  
 “ pain in the groin.

August 3d. “ I passed a seton through  
 “ it, in the improved method recommend-  
 “ ed by Mr. Pott, in his last publication  
 “ on that subject. There was about a pint  
 “ and a half of water discharged. The  
 “ patient was put to bed, and complained  
 “ for about two hours after the operation  
 “ of a pain in his back: a bread and milk  
 “ poultice was applied; the Scrotum was  
 “ suspended in a bag-truss; and he took  
 “ twenty drops of Tinctura Thebaica at  
 “ bed-time. The Scrotum was well fo-  
 “ mented, both in this and the following  
 “ case, every time the poultice was re-  
 “ newed.”

4th. “ He complained of a pain in his  
 “ back: towards the evening, his uneasi-  
 “ ness increased, his pulse grew quicker,  
 “ and therefore at night the opiate was  
 “ repeated.

5th.

5th. “ He slept very little in the night,  
 “ complained of great pain striking from  
 “ his Testicle to his Loins: the Scrotum  
 “ was tense, and much inflamed. A  
 “ clyster was injected, which procured  
 “ two stools, but they did not relieve him  
 “ much. He had frequent retchings to  
 “ vomit, and complained greatly of a pain  
 “ across his chest, to both which, he said,  
 “ he had been subject at times for some  
 “ years. His pulse was quick, and he  
 “ took his opiate at bed-time.

6th. “ He had a tolerable good night;  
 “ the retchings were less frequent. The  
 “ pain of his back, and the tension of the  
 “ Scrotum, were great, and there was  
 “ some discharge of pus from the punc-  
 “ tures. His pulse was languid. He had  
 “ his opiate as usual.

7th. “ As there was no change in his  
 “ symptoms, except that his retchings  
 “ were gone, there was no alteration  
 “ made in the treatment,

8th.

8th. “ He had great pain in his Loins,  
 “ and in his Testicle, which was much in-  
 “ flamed. The suppuration advanced a  
 “ little. His pulse was low. I ordered a  
 “ clyster, with thirty drops of Tinctura  
 “ Thebaica, in an emollient decoction,  
 “ and allowed him a little wine and salep.  
 “ In the evening, he said he had been ea-  
 “ sier since his poultice was renewed,  
 “ which was done regularly night and  
 “ morning.

9th. “ He continued pretty easy.

10th. “ He complained again of great pain  
 “ in his Testicle and Loins. The Tunica  
 “ Vaginalis and Integuments were much  
 “ thickened and inflamed. About a tea-  
 “ spoonful of pus was discharged from the  
 “ punctures by a gentle pressure. An  
 “ opening clyster was injected, which  
 “ procured him some ease.

11th, 12th, and 13th. “ There was  
 “ no remarkable change. He was in pain  
 “ at

“ at times: a little pus was discharged  
 “ daily; and on the 13th a clyster was  
 “ given him.

15th. “ Having had no stool for two  
 “ days, a clyster was injected in the even-  
 “ ing; and finding him rather low, I or-  
 “ dered two ounces of decoction of Bark,  
 “ once in six hours.

16th. “ His pains increased, with  
 “ tendernefs and seeming inflammation on  
 “ the left side of the Abdomen, as far as  
 “ the spine of the Ilium. The discharge  
 “ increased, and some threads of the seton  
 “ were withdrawn.

19th. “ Some threads had been drawn  
 “ out on both the preceding days. He  
 “ said he believed something had broke in  
 “ the night, for that he was quite easy.  
 “ On removing the poultice, we observed  
 “ a large quantity of pus in it, and we  
 “ pressed out a good deal more. The in-  
 “ flammation abated visibly, and some  
 “ more of the threads were taken away.  
 “ He



“ He got out of bed for the first time  
 “ this day.

31st. “ From the 20th to this day,  
 “ the inflammation diminished gradually,  
 “ and a few threads have been almost daily  
 “ removed. The last, which adhered  
 “ strongly the preceding day, and gave  
 “ much pain on attempting it, was now  
 “ brought away with ease.

September 3d. “ He complained of a  
 “ pain in the Scrotum; and upon inspec-  
 “ tion, I observed a small collection of  
 “ matter between the two punctures for  
 “ the seton.

4th. “ I opened the abscess, and the  
 “ patient became perfectly easy.

8th. “ The abscess was almost healed,  
 “ so that there was little or no discharge;  
 “ but a thickening of the Integuments re-  
 “ maining, I ordered a pledget, spread  
 “ with Ung. Cœral. fort. to be applied daily.

18th.

18th. "The Testicle was of its natural size.

26th. "He was discharged from the  
 "Hospital, with some thickening of the  
 "Integuments, but in every other respect  
 "perfectly well."

"Matthew Pride, aged about forty-two,  
 "was admitted into St. Thomas's Hospi-  
 "tal on the 1st of July, 1771, for Ob-  
 "structions in the Urethra. These I re-  
 "moved by the use of bougies. He had  
 "likewise an Hydrocele on the right side,  
 "owing, as he said, to a blow, received  
 "about eight years before, upon that  
 "Testicle. It was not painful, nor could  
 "he perceive the swelling to have increased  
 "for many years. But notwithstanding,  
 "the size of it rendered him unfit for his  
 "duty as a sailor.

August 5th. "I passed a seton through  
 "it, as in the former case, and discharged  
 "about a quart of water. The patient in

“ this, as in the former case, complained  
 “ for two hours after the operation of a  
 “ pain in his back. I ordered an opiate,  
 “ and in the evening he was quite easy.

August 6th. “ He had a good night,  
 “ was free from pain, and his pulse not in  
 “ the least quickened. There was a slight  
 “ inflammation of the Scrotum, which I  
 “ ordered to be covered with a bread and  
 “ milk poultice, and to be suspended in a  
 “ bag-trufs. A clyster was given in the  
 “ evening, which procured two stools.

10th. “ He has hitherto made no com-  
 “ plaint of pain, though there is an in-  
 “ crease of inflammation, and some ap-  
 “ pearance of matter on the dressings.

11th. “ Being costive he had a clyster,  
 “ but continued free from pain.

12th. “ There was a fluctuation in the  
 “ upper part of the tumour. On this day  
 “ he got up and sat a while in his chair,  
 “ which he did every succeeding day. His  
 “ pulse

“ pulse was rather low ; I therefore or-  
 “ dered him a little of the decoction of the  
 “ Bark thrice a day.

19th. “ He has hitherto been perfectly  
 “ easy ; what little inflammation there was,  
 “ now almost totally gone. There was a  
 “ discharge from both the punctures ; and  
 “ this day I drew out some of the threads  
 “ of the seton.

23d. “ He continues easy ; and I have  
 “ drawn away, from time to time, such  
 “ threads as were loose.

30th. “ I have not been able to draw  
 “ out one thread all the last week. They  
 “ adhered so strongly, that the attempt  
 “ gave great pain.

September 3d. “ I opened a small ab-  
 “ scess formed between the two orifices of  
 “ the seton. This relieved the patient  
 “ from some pain of which he had before  
 “ complained. There now remained only  
 “ one thread, which I could not get out.

13th. " The abscess was healed. One  
 " thread remained in; and there was a  
 " considerable thickening of the Integu-  
 " ments in the direction of the seton, but  
 " no pain. There was still a fluctuation  
 " in the upper part of the tumour. The  
 " poultice was changed for an application  
 " of the Mercurial Ointment.

27th. " In attempting to withdraw the  
 " thread, it broke, and the upper portion  
 " of it only came away. The thickening  
 " of the Integuments was greatly dimi-  
 " nished.

October 25th. " He was dismissed from  
 " the Hospital for drunkenness and re-  
 " peated irregularities; a part of the thread  
 " still remaining in the Scrotum.

December 21st, " I saw him. The  
 " thread was still in the Scrotum, but I  
 " pulled it out without using any force.  
 " The thickening of the Integuments was  
 " perfectly gone, except a very trifling

" one

“ one about the orifice in which the thread  
 “ had remained. There was plainly some  
 “ water contained in the Scrotum, but  
 “ whether it was in a distinct Cyst, or in  
 “ the Tunica Vaginalis, and that the in-  
 “ flammation had not run high enough to  
 “ complete a cure, I am unable to deter-  
 “ mine. However, it was so small, that  
 “ the patient suffered no inconvenience  
 “ from it.

“ As the advocates for the seton allow  
 “ the cure is effected by an inflammation  
 “ brought on the Tunica Vaginalis and  
 “ Albuginea, I cannot help suspecting,  
 “ that a thickening of the Albuginea, which  
 “ must naturally follow the inflammation,  
 “ may greatly injure, if not destroy the  
 “ function of the Testis itself.”

The judicious reader will observe, that  
 these patients had every thing done for  
 them, which could alleviate the inconve-  
 niences attending such an operation; but  
 with all these helps, I cannot think it com-

parable to the method by small caustic. The first of them suffered greatly more pain, confinement, and trouble, from fomentations and cataplasms, took more medicines, and was more reduced, than I ever knew any patient, upon whom the small caustic was practised; besides suppuration and difficulty in removing the threads. The other suffered all the inconveniences except the pain; the inflammation and suppuration not having been so considerable. And therefore water was apparently found in the Scrotum above four months after the first application of the seton.

I cannot conceive the seton to act in any other manner than by irritation, as the tent does: and this appears the more probable, because these two cases very much resembled, in their consequences, the cases of the tent mentioned by Mr. Warner\*: and, indeed, that experienced surgeon

\* Mr. Warner's Cases.

foretold every remarkable circumstance which attended them; though he had never seen the seton used.

And it cannot be doubted, that the seton does injure the Testis, as well as the Tunica Vaginalis; which gives the small caustic greatly the advantage; for that affects only the Tunica Vaginalis, the part concerned of the least consequence: in which process the Scrotum is not swelled, but only at a certain period becomes harder: whereas the large swelling of the Scrotum, and pain after the seton, indisputably shew the affection of the Testicle itself.

The method of cure by incision is one of the most easy operations in surgery, consisting only of a simple dilatation of the Tunica Vaginalis from one extremity to the other, unless the Vaginal Coat should be found thickened and indurated; in which case, it is recommended to cut away as much as can be done conveniently\*.

If

\* Mr. Pott, in his Letter published at the end of Douglas's Treatise, says, his method was to take away



If this operation was followed with no worse symptoms than commonly attend castration, it would perhaps be preferable to any other method.

The greater number of such authors as have fallen into my hands, content themselves with describing the method, without informing us of the consequences. Those, however, who have performed it, give not the most favourable account of the symptoms attending it.

Wifeman\* says, “The patient should  
“ be of a tolerable habit of body, and  
“ not in his declining age; and after-  
“ wards wishes us to consider the age and  
“ habit of body, before we begin this way  
“ of cure: for such patients are subject to

as much of the Tunica Vaginalis as he could with a knife, without making any exception: but in his own Treatise of the Hydrocele published afterwards, he follows Le Dran, and recommends the removal of the Cyst only when it is thickened.

\* Wifeman's Surgery, chap. 23.

“ cholics,

“ cholics, fevers, singultus, &c. and, if the  
 “ native heat be weak, to gangrene.”

Chefelden\* says the disease is rarely cured without opening the cavity where the water is contained. “ This,” he adds, “ I have done, and seen done, several times; but never thought the cure worth the trouble and pain the patient underwent.”

Heister says, the *curatio perfecta* (which implies the incision) confines the patient several weeks to his bed, and is both painful, and in some measure dangerous †.

Mr. Warner says, he has never seen any fatal consequences arise from the incision; but advises that it should only be practised upon those who are of a good habit of body, and who have not exceeded the middle stage of life ‡.

\* Anatom. p. 264.

† Surgery, part 2. sect. 5.

‡ Warner's Cases, No. 43. 3d. edition.

Mr. Samuel Sharpe, in his Treatise on the Operations of Surgery, says, that the incision, and he includes also the caustic, is attended with so much danger, “ that notwithstanding its success in the end, he believes, “ whoever reads the cases he adjoins, will be apt to discard the method, and abide rather by the palliative cure.” In subsequent editions, he substitutes the word trouble for danger\*.

In one case related of a healthy man, forty-four years old, it appears, that on the night of the operation he grew feverish, had violent pain in his back, and for four days continued in a most dangerous condition, till the fever tended to a crisis by the suppuration of both the wound and Testicle, which forced him to open the body of the Testis. He adds, that after the cicatrization of the wound, the patient was restored to perfect health †. He does not indeed say, that the function of the

\* Edition 6, p. 41.

† Ib. p. 42.

Testis was continued; for, I think, that must probably be destroyed, when matter was formed in the body of it, and an opening made for its discharge.

From his second case it appears, that the operation was performed on a boy about eight years of age, who narrowly escaped with life. The symptomatic fever attending, terminated at last in an abscess of the Scrotum \*. He says, that he has known a few examples in its favour, but by no means enough to warrant the recommendation of it, unless to such as are very impatient under the distemper, and are willing to suffer any thing for a cure †.

Mr. Pott observes, “ That Paulus Ægina, Albucaſis, Severinus, and many others of the best ancient writers, have given an account of this operation; and it has at all times been practised by

\* Edition 6, p. 42.

† Ib. p. 46.

“ some,

“ some, though it has generally been de-  
 “ cried and dreaded \*.” He adds, “ that  
 “ the membranous structure of the parts  
 “ on which the wound is inflicted, their  
 “ continuation from the Peritonæum,  
 “ and the great irritability of some of  
 “ those, which are necessarily laid bare,  
 “ and put under the necessity of receiving  
 “ dressings, must occasion pain and a symp-  
 “ tomatic fever †; and that the operation  
 “ is, or ought to be, confined to the  
 “ young and healthy ‡.

“ The general induration of all the  
 “ parts about the thick tumid lips of the  
 “ incision, and the general inflammatory  
 “ enlargement of the Scrotum, have, for  
 “ the first four or five days, a disagreeable

\* Treatise on the Hydrocele, p. 160. † Ib. p. 165.

‡ Id. ibid. Notwithstanding these conditions were complied with, yet in one of Mr. Samuel Sharpe's patients, aged forty-four, the Testicle suppurated, and he had like to have lost his life. Another, a boy of eight years, narrowly escaped.

“ appearance ;

“ appearance; and may, if neglected, or  
 “ mis-treated, prove very troublesome, or  
 “ even hazardous \*. That it is sometimes  
 “ attended with troublesome symptoms is  
 “ beyond all doubt; and so is the method  
 “ by caustic. I cannot say that I have  
 “ never seen it prove fatal; nor can that  
 “ be said of any operation of conse-  
 “ quence †.” In the following page he  
 observes, “ That this method can never  
 “ be said to be totally and absolutely void  
 “ of some danger, and that it bears the  
 “ appearance of an operation of some  
 “ severity ‡.”

After these quotations from Mr. Pott,  
 it will be right to set forth what he al-  
 ledges in favour of this method. He says,  
 “ I am very confident that the ills attend-  
 “ ing it have been much exaggerated;  
 “ that, under proper cautions and restric-

\* Pott, *ibid.*

† *Ib.* p. 172.

‡ *Ib.* p. 173.

“ tions,

“ tions, it will be found to be practicable  
 “ with perfect safety; and that it ought by  
 “ no means to be laid aside \*. That when  
 “ the febrile symptoms are appeased, and  
 “ a kindly suppuration begun, let the sur-  
 “ geon have patience, and not by an over-  
 “ officiousness, or by improper dressings,  
 “ interrupt Nature in what she is about.  
 “ Let him by warm fomentations keep  
 “ the parts clean and perspirable; let him  
 “ dress the wound with a small quantity of  
 “ soft, easy, digestive applications; and  
 “ covering the whole Scrotum with a soft  
 “ warm poultice, suspend it in a proper  
 “ bag, and he will, in general, soon see a  
 “ favourable change in all the appearances;  
 “ he will see the inflammation disappear,  
 “ the tumour resolve, and all the tumefac-  
 “ tion in due time subside. But if he ne-  
 “ glects these general cautions, and, under  
 “ a notion of assisting digestion, goes to  
 “ work with precipitate, and other irrita-  
 “ ting dressings, the face of things will

\* Pott's Treatise on the Hydrocele, p. 160.

“ not be so agreeable ; the tumour will not  
 “ subside ; and he will continue, or rather  
 “ create, a painful indigested sore, with  
 “ all its consequences ; but for which he  
 “ only is accountable \*.” He observes,  
 “ That some writers of very good charac-  
 “ ter have appeared very averse to this  
 “ method, and have ascribed to it such  
 “ symptoms in general, as are indeed very  
 “ alarming, but which do not occur, unless  
 “ the operation be performed improperly,  
 “ or on subjects unfit for it : that he has  
 “ practised it very often, and does not re-  
 “ member to have seen any ill effects from  
 “ it more than two or three times † ; and  
 “ that he has so often made the experiment,  
 “ and with such success, that he cannot he-  
 “ sitate to assert, that under the necessary  
 “ restraints, regarding age, habit, state of  
 “ the disease, &c. it is a very useful ope-  
 “ ration ; and is inclined to believe, that,  
 “ besides the choice of improper subjects,

\* Pott's Treatise on the Hydrocele, p. 166 and 167.

† Ib. p. 160.



“ or in improper circumstances, surgeons  
 “ have been unnecessarily alarmed at what  
 “ would not in other cases have alarmed  
 “ them; or that, not being sufficiently  
 “ apprehensive and attentive, they have  
 “ suffered their patients to get into circum-  
 “ stances of hazard, which are not justly  
 “ chargeable on the operation merely, and  
 “ would not happen under more careful  
 “ management \*.”

The radical cure by excision, means the  
 cutting away the whole Tunica Vaginalis,  
 whether it be in a sound or diseased state.  
 For many, who prefer simple incision as  
 the radical cure, direct so much of the  
 Tunica Vaginalis to be removed as shall  
 appear much thickened or indurated.

Upon a presumption then, that the ill  
 symptoms which attend a large wound of  
 the Tunica Vaginalis arose from the in-  
 flammation and suppuration of that mem-

\* Pott's Treatise on the Hydrocele, p. 160 and 161.

brane,

brane, it has been proposed to cut it all off, in hopes of removing entirely the cause of the mischief: and to support this practice, great pains have been taken to prove the analogy between the Cysts of common encysted tumours, and the Tunica Vaginalis of the Testicle in this species of Hydrocele \*, but, in my opinion, without the success necessary to warrant the conclusion drawn from it.

Douglas is the only modern surgeon who has ventured to propose this method; but from his account of the operation, it appears to be exceedingly tedious and painful; and some, who have seen it performed, have assured me that it seemed cruel to a degree which shocked them.

Upon examining the cases which are offered to recommend this operation to us, we find that pain in the loins came on very early, together with great swelling of the

\* Douglas on the Hydrocele, chap. iii.

Scrotum, and a very alarming fever; that the Testicle swelled, and, in one case, projected out of the wound; and in another became livid, required to have the body opened, and was attended with an exfoliation of the Albuginea\*.

Mr. Warner never saw this method put in practice but once, and then the patient died of the fever, which was immediately occasioned by it †.

I shall next consider the method by caustic, as it has been commonly directed. The most eminent of the Moderns agree in recommending a large caustic to be laid upon the anterior part of the Scrotum.

Wiseman applied a caustic according to the length of the part, and the next day divided the Eschar ‡.

\* Douglas on the Hydrocele, case 1.

† Warner, case 43.

‡ Wiseman, chap. 23.

Heister advises a large caustic ; but does not mention the division of the Eschar \*, if it has penetrated.

Palfyn says, that in a double Hydrocele, he laid a large caustic on each side, and afterwards opened the Eschar, and filled it with dossils dipped in brandy †.

Monro, as well as Heister, omits mentioning the size of the caustic ; but it is evident from his words, that he designed it large : for he says he would prefer “ the application of the caustic along the tumour to destroy the skin, previous to an incision into the Sac ; for, by the caustic, one has a larger opening into the Integuments, than by incision ‡.”

Mr. Samuel Sharpe says, that he laid on the anterior and upper part of the Scrotum,

\* Heister, part 2. section 5.

† Palfyn Anatomie Chirurgicale, tome seconde, ch. 20.

‡ Medical Essays, vol. v. art. 22.

a caustic about six inches long, and one broad, and discharged the water on the day following by a small puncture\*.

Dionis advises a caustic to be applied the length of the Scrotum, and as soon as it has had its effect, to open the Eschar during its whole extent † to the bottom of the Scrotum.

Mr. Pott's description of the method by caustic is as follows: " A piece of the  
 " common paste caustic, rather less than a  
 " finger's breadth, properly secured by  
 " plaister, is applied the whole length of  
 " the anterior part of the tumour, which  
 " will necessarily make an Eschar of pro-  
 " portionable size; when this Eschar ei-  
 " ther casts off, or is divided, an opening  
 " of nearly the same length and breadth  
 " is thereby intended to be made into the  
 " cavity of the Tunica Vaginalis Testis,

\* Operations, ch. 9. case 3.

† Demonstrat. 4th.

“ by which means an opportunity is given  
 “ to the surgeon, to apply such dressings  
 “ to the inside of the said Tunic, as shall,  
 “ by the generation of new flesh, fill up  
 “ and abolish its cavity\*.”

This appears to me a just representation of the method by caustic described in authors. But Mr. Pott, in his last publication on this subject, seems to confound it with the small caustic, which I have recommended: for he says, “ That all the  
 “ practitioners who make use of the latter;  
 “ *the caustic*, allow that it produces a slough  
 “ of the whole Tunica Vaginalis; that it  
 “ destroys the whole bag or Cyst; and  
 “ that it is used with an intention so to  
 “ do †.” Now the total destruction of the Tunica Vaginalis by sloughing away, has, in general, been thought a position so new, that it has been considered as the principal objection to my doctrine; supposing it an

\* Pott on the Hydrocele, p. 155 and 156.

† Pamphlet 1771, p. 41.

assertion which I could not make good without absolute dissection.

It does not appear to me, that writers on this subject ever thought of this membrane separating in sloughs: and yet when large caustics were used, I am surprised how this observation escaped them. Indeed the sagacious Wiseman speaks of a slough attending both the incision and caustic, but does not seem to have had the least idea of the whole Tunica Vaginalis sloughing away. Besides, he treats obscurely both of the disease and method of cure, as did all the surgeons at that time, owing to their great deficiency in the anatomy of the parts concerned.

Douglas has published Mr. Baker's method of cure by caustic, which the latter always practised; but having frequently seen it myself, and conversed with Mr. Baker on the subject, I shall mention it afterwards.

We will now consider the consequences which have been said to follow this method of obtaining the radical cure, with the objections which have been raised against it; so that a judgment may be formed how far they are obviated or prevented by the particular mode which will be recommended.

Wiseman seems to think that the symptoms attending the caustic and incision are nearly equal, and his practice was conformable to this opinion: for in two patients whose cases he relates, who had an Hydrocele on each side of the Scrotum, he performed the cure in one by caustic, and in the other by incision, and says of both methods what I mentioned before, "That such patients are subject to cholics, fevers, singultus, and, if the native heat be weak, to gangrene."

Garengot condemns the use of the caustic \*, though he says most authors declare

\* Garengot *Traité des Operations*, ch. 6. art. 3.



in favour of it. His first reason is, " That  
 " all caustics act slowly, and that, during  
 " their action, the liquid, which we sup-  
 " pose already corrupted, will become  
 " more so." But I believe no advocate  
 will be found to plead for a corrupted state  
 of the liquid in an Hydrocele, at this time.

Secondly, " He thinks the caustic cannot  
 " be confined to a certain space, but that  
 " it will spread further than the surgeon  
 " intended." It must be owned a difficult  
 matter to confine a caustic upon the Scro-  
 tum, but it will be more easy to confine a  
 small than a large one ; yet, if after pro-  
 per precautions, it should spread somewhat  
 further than the surgeon intended, no ex-  
 traordinary mischief will ensue, if it does  
 not come at the Testicle.

Thirdly, " That notwithstanding the ap-  
 " plication of the caustic, the Eschar must  
 " afterwards be opened, and therefore it  
 " would be much better to use the instru-  
 " ment at first." If there was any real  
 necessity

necessity for dividing the Eschar, there might be some weight in this objection; but I hope to make it appear, that the cure may proceed equally well without that step.

Fourthly, "That the potential cautery  
 "dissolving and mixing with the fluid, has  
 "rendered it caustic, and produced disor-  
 "ders almost irreparable." Every day's  
 experience shews this to be void of all  
 foundation.

It appears from Mr. Samuel Sharpe's case of the caustic, that on the third day the patient began to have great pain in the back and loins, and the Scrotum became exceedingly inflamed and thickened, the symptomatic fever running high; in which state he remained for a week. This was followed by an ague; and the case at last terminated by two imposthumations.

Mr. Pott has not given us any cases, where he had performed the radical cure

either by incision or caustic; but seems to think that the ill consequences are much the same. He says, “ whoever promises  
 “ to perform, or expects to receive a ra-  
 “ dical cure by caustic, upon much easier  
 “ terms than by incision, will most fre-  
 “ quently be disappointed; that is, they  
 “ will find the fever and inflammatory  
 “ symptoms full as high, and the sore full  
 “ as painful, in the one as in the other;  
 “ and consequently all their care and at-  
 “ tention to obviate mischief, full as ne-  
 “ cessary. Neither is the necessary con-  
 “ finement, in general, at all less in the  
 “ one than in the other\*.”

Whoever considers what has been advanced in the foregoing pages, concerning the different methods employed to obtain a radical cure of the Hydrocele of the Tunica Vaginalis Testis, must observe, that all of them, when they proved effectual, have been generally attended with

\* Pott on the Hydrocele, p. 158.

great inconveniences, and sometimes with very alarming danger, both to the functions of the diseased part, and to the life of the patient. These circumstances then have induced me to recommend a method, which I have used in St. Thomas's Hospital and elsewhere, and have seen practised for a number of years, and which, from repeated experience and observation, I am fully convinced is very little embarrassing to the surgeon, very easy, and totally void of danger to the patient.

The method is this; to lay a small caustic upon the anterior and inferior part of the Scrotum, taking care to avoid the Testicle. A large caustic is quite unnecessary; and every advantage may be derived from one, whose Eschar will be no bigger than a shilling. The loose and pendulous situation of the Scrotum renders the application of a bandage so very inconvenient, that we cannot easily prevent the caustic from spreading somewhat: for this reason I cover no more than the size of a sixpence,

on

on a presumption that it may make an Eschar as broad as a shilling, though it commonly makes one the size of a half-crown,

The intention is that it shall affect, and, if possible, penetrate through the Tunica Vaginalis; so that the time it is suffered to lie on, is proportioned to the supposed thickness of the Cyst. It should never remain on less than five hours; but if it be suffered twenty-four, it can do no mischief, when properly guarded. On the removal of the caustic, digestives may be applied to the Eschar, or the common cataplasm of white bread and milk. The Scrotum must be suspended in a bag-truss; and the patient had best be confined to his bed; though even this circumstance is sometimes omitted without detriment. Sometimes immediately after removing the caustic, sometimes within twenty or twenty-four hours, and sometimes at a later period, or even at the distance of two or three days, the patient begins to complain of pain in the Scrotum and Loins,  
has

has now and then some cholic pains, the pulse a little quickened, and the tongue whitish. At different periods of time from the removal of the caustic, but frequently within forty-eight hours, an alteration is perceptible in the Scrotum: the tumour, upon grasping, feels more tense and hard than it was before; and this hardness answers to the figure of the Tunica Vaginalis in its whole extent; and a little attention will convince an observer, that it is this membrane alone which gives the sensation of tension and hardness, and no other part.

The cholic pains and febricula seldom continue more than a day or two, and very frequently are so inconsiderable, as to require neither evacuation, nor any internal medicines. If, however, the pulse is quicker than common, the pain of the back, and the cholic, distressing to the patient, they will be speedily removed by once or twice bleeding, and injecting one or two clysters. As soon as the pain of  
the

the back (except what arises from the weight of the Scrotum), the febrile heat, and other symptoms are removed (for they commonly go off all together), the patient need no longer be confined to his bed, but may be suffered to get up and walk about the room, provided the Scrotum be suspended. It need scarcely be given as a caution, that the suspension should be carefully attended to, while the water remains inclosed; and that the truss make not too rude or unequal a pressure on any part.

In a few days the Eschar of the Scrotum will loosen and come away, exposing to view the Tunica Vaginalis, which bears evident marks of its having been affected by the caustic, and prepared to slough off; and when pressed with the finger, the undulation of the water may be felt within it. As the cure proceeds, the sloughy Tunica Vaginalis will project more and more through the orifice in the Scrotum; and when it appears ready to burst, it may be

be punctured with a lancet. Sometimes before it is ready to burst, and while the Tunic is in a state of inflammation, I have punctured it, and discharged part of the water, and thus by taking off the tension, have given immediate ease. Now and then the whole of the water will be discharged by the puncture; but the wound will never heal up till the thickened Tunic has sloughed away. If the water be discharged by a puncture, the Scrotum by degrees collapses, and the orifice in it is filled up with slough, which prevents the access of external air to the Testicle. These sloughs continue to come away with the dressings daily, for about four, five, or six weeks, and in proportion to their discharge, the hard tumour of the Scrotum lessens. By the time the last slough casts off, the hardness is entirely gone, and the wound immediately cicatrizes; and the cicatrix, being about the size of a finger's end, adheres strongly to the body of the Testis, which has never come in sight, nor has had any application brought



brought in contact with it during the whole process\*.

Whoever will carefully attend to the several appearances that accompany this method, must be satisfied that the caustic excites an inflammation of the Tunica Vaginalis, which spreads through the whole of it; in consequence of which, the en-

\* The sloughs sometimes come away in small flakes, attended with a gleet discharge; at other times in very large pieces; so that I have drawn away a piece of slough as big as a walnut. The aperture in the Scrotum will sometimes contract to a very small size; but let no surgeon be afraid of its closing too soon; for no art can heal it up, till all the slough is discharged. Nor do I ever suffer a probe, or any foreign body, to be introduced into it. When I was in Paris, in May, 1771, I laid a small caustic on the Hydrocele of an Italian nobleman, who went on extremely well while I staid. Leaving him in the care of his surgeon, I strongly recommended that no attempt should be made to enlarge the wound, however small it might become; but they fearing it would close too soon, introduced sponge tents: the consequence was, that very violent symptoms were produced, which ceased immediately on discontinuing the tents.—Several instances of the same kind have come to my knowledge since.

tirè membrane separates, and comes away in sloughs ; so that whether we consider the Tunica Vaginalis as secreting or containing the fluid, the radical cure is equally performed ; and whatever future accumulation of water may happen to form on that side of the Scrotum, it must be either of the Anasarcous or Hydatid kind.

From what I have advanced in this Essay, as well to explain the method by large caustic and its consequences, described in authors, as to recommend the process by small caustic from reasoning and experience, I believe they will be found to differ greatly ; and that conclusions, with regard to the caustic in general, cannot be drawn from either indifferently. For although the caustic is the instrument of cure in both the old and new method, yet its size, and the manner of treatment, make the processes widely different ; and it is easy to see, that on these variations *depend* the difference of event. The dire-

lowed the method by large caustic, being without doubt owing to “ the injury which “ (to use Mr. Pott’s words) the irritable “ and acutely sensible Testicle receives \* ;” while the mildness and safety of the other proceeds from avoiding all possible irritation and exposure of it.

Mr. Pott has declared his opinion to be determined, and that he is convinced the seton is the most successfully efficacious of any method of cure in this disease †. Yet it does not appear to me, from his writings, that he ever saw put in practice the method by small caustic which I have recommended. His conclusion with regard to the caustic, compared with the seton, is, that “ this last accomplishes the “ cure by the adhesion of the two coats “ together, without any destruction of “ parts ; in which consists the material “ difference between the method of cure “ by seton, and that by caustic ‡.” But

\* Note to p. 164, in Treatise on Hydrocele.

† Pamphlet on the Hydrocele, 1771.

‡ Pamphlet, p. 41.

supposing that the seton does effect the cure in the manner he imagines, yet the matter in dispute may be reduced to what every man's judgment will decide in a moment; that is, whether it is better totally to remove, with trifling pain, and no danger to the patient, a part, from the loss of which he feels no inconvenience, and by that means prevent all possibility of a relapse, or to suffer an useless part to remain in a preternatural and diseased state, without any benefit to the patient?

During the time I was with the late Mr. Girle, I laid a great number of caustics on hospital patients, by his direction, for the radical cure of this species of Hydrocele; and have since used this method myself, both in public and private; and can with great safety assert, that I never knew the febrile symptoms last three days, rarely more than twenty-four hours, and that the patient never felt very extraordinary pain, nor ever appeared in danger.

Dr. Huck, as well as myself, has heard Mr. Girle declare, that during nineteen years practice in St. Thomas's Hospital, and a very extensive practice in private, he had continued to use it, and never met with one case where he thought there was the appearance of hazard\*.

I have heard of some cases, since the first edition of this little Essay, where the method proposed had failed, particularly two at Paris; one of which I cured last May by a caustic, laid on by myself; and the other has been since cured by Monsieur Brassant, together with three more. Upon examination, all the failures which have come to my knowledge, appear to have been owing to some fault either in quantity or quality of the caustic, or to an improper application of it. It therefore seems necessary to describe more minutely my manner of preparing, applying, and

\* He told me that he had met with two cases, where the sloughs which were discharged were of a beautiful red colour

securing the plaister which is to confine the caustic, and also the composition of the caustic itself.

I take a piece of old linen as broad as the palm of my hand, spread with some good adhesive plaister, and laying it upon a glazed surface, such as the back of a plate, that it may not adhere, I make from the centre several cuts with a pair of scissars, turning up the angular slips, so as to form a circular hole about the size of a sixpence, round which I apply narrow slips of plaister, till I have made it half an inch deep, for the reception of the caustic. The patient being in bed, laid upon his back, the plaister is to be applied upon the Scrotum, so as to have the hole directly over the part upon which the caustic is to act, and which place I generally ascertain by a circular mark, drawn with ink. As soon as the plaister sticks, I guard it carefully all round with small bits of lint cut very short. The cavity is next to be entirely filled with caustic, which should be

softened by a drop or two of water, or by exposure to the air, while it is breaking down with a spatula to the consistence of paste. Over this a slip of plaister is applied; and to secure it more fully, a second may be put on, transverse to the first. I then apply a double-headed roller round the body, carrying one head two or three times between the legs and over the caustic, drawing it moderately tight. The roller being applied, I give directions to the patient not to touch it, but to lie still, till I think proper to remove it. These rules being observed, and the following caustic employed, I consider, and have always found, the success infallible.

## THE COMPOSITION OF THE CAUSTIC.

℞ Lixiv. Sapon. Pharmacop. Lond. ℥ xxxij.

Coque ad ℥ viij; adde

Calc. Viv. pulv. ℥ iij vel q. f.

Extract Thebaic. pulv. ℥ i.\*

donec omnem liquorem absorpserit, ut fiat Pasta, quæ vate optime clauso servari debet.

Mr. Baker's method differs very little from that which I have recommended: his caustics were larger, so that the Eschar would measure, in its broadest part, more than two inches diameter: this,

\* Within this last twelvemonth only, we have mixed Opium with our caustic; and we have reason to think it greatly lessens the pain, infomuch that several patients have fallen asleep during its operation, and all have owned that it was very easy to bear: nor does the Opium appear in the least to destroy the virtue of the caustic, which I always suffer now to lie on twelve hours, and by that means so completely destroy the Scrotum, which it touches, that the Tunica Vaginalis commonly becomes visible on its removal.

E 3

however,



however, was not what he chose, for he recommends the Eschar to be about the size of a half-crown. He never punctured the Tunica Vaginalis for discharging the water, but suffered it to come away by degrees with the sloughs. He has assured me, that having been twenty-nine years surgeon to St. Thomas's Hospital, he had, during that period, used it both in public and private, had never seen any bad consequences from it, nor even cause to be alarmed at any appearance of danger. That he has frequently performed it on both sides of the Scrotum, in people of all ages; and used it once in a merchant, who would not suffer himself to be confined, but went out daily about his business, from the application of the caustic to the cicatrization of the wound.

This method of cure I mentioned to my friend, Mr. Way, several years ago, since which he has practised it in Guy's Hospital, and never saw any mischief happen but once; and then the ills which  
arose,

arose, were not chargeable on the operation itself\*.

I have advised that the caustic be laid upon the anterior and inferior part of the Scrotum; and there is this good reason for making that the place of election, be-

\* Since the first edition of this Essay, Mr. Way has favoured me with the following explanation: "The mischief to which I alluded, happened to a man of sixty years old and upwards. His Testicle lay at the bottom of the Scrotum, upon which place, contrary to my express direction, the caustic was applied. A very smart fever ensued, matter was formed, a mortification followed, and a considerable part of the integuments separated; notwithstanding which, with great care and attention, the patient perfectly recovered, and his Testicle was preserved in a sound state.

"From Midsummer 1762, to this time, I have had many opportunities of applying the small caustic for the radical cure of the Hydrocele of the Tunica Vaginalis Testis (in two of which the subjects were seventy years old), and have found no reason to alter my opinion in respect of the superior advantages of this method of cure to any other I have either seen, or known to be practised.

LEWIS WAY."

cause the discharge of the sloughs will be facilitated by the dependence of the orifice: but if any particular circumstance should make it improper, the advantage thereby obtained is not absolutely necessary to success, as will appear by the following case.

An eminent laceman was affected with an Hydrocele, for which I had occasionally tapped him for three or four years, but being very wretched under his complaint, he determined to undergo the radical cure.

Hydroceles of the Tunica Vaginalis commonly approach to an elliptic form, and their direction is perpendicular, with one extremity turned upwards, and the other downwards; but in this patient it was horizontally oblong, with one extremity pointing forwards, and the other backwards, resting on the Perinæum. The particular figure of it here was, in all probability, derived from its having been constantly supported in a bag-truss from its  
first

first appearance. The Testicle lay at the bottom of the Scrotum, and could easily be felt. When the radical cure was determined upon, Mr. Girle and Dr. Hunter were desired to consult with me, and fix upon the proper place for the application of the caustic. It was impossible to lay it on the bottom of the Scrotum without injuring the body of the Testis. It was next proposed to lay it on the posterior part of the Scrotum, but on examination, we could feel the spermatic vessels in the way. We therefore determined to apply it on the superior and anterior part, which was accordingly done, and no inconvenience ensued. On puncturing the Eschar at a proper time, the water was let out, the Scrotum soon contracted, and the sloughs were discharged as easily as they would have been, had the caustic been laid on the lower part of the Scrotum: so that though he appeared in his shop a fortnight before the wound was healed up, yet he was perfectly well in less than six weeks

weeks from the application of the caustic\*.

It will not be amiss now to consider why the symptoms, which attend the common method of using the caustic, are so much

\* The uninterrupted success I have met with in a great number of cases, has lately emboldened me to undertake the cure of Hydroceles, which, a few years ago, I should have been afraid to meddle with. Two cases in particular, seem worth mentioning; one, of the servant of an eminent merchant of this city, who had an enormous Hydrocele of a singular form, resembling somewhat a sugar-loaf, with its basis upwards; and when the water was discharged by tapping, which I did three times before I ventured on the radical cure, there appeared an hard lump, of the size of an hen's egg, at the upper part of the Testicle, together with another, about the size of a chestnut, on the cord, and likewise a considerable thickness of the cellular substance at the lower part of the Scrotum. But as he had no pain, either in the Testicle, cord, or back, I concluded there was no cancerous virus in the habit, and therefore ventured on the operation. The consequence answered my expectation; he got perfectly well of his Hydrocele with great ease to himself; and the hardness of the Testicle and cord remained as before.

The

much more unfavourable than in the method I have recommended.

One reason may be the great size of the caustic, which it will be very difficult to prevent from affecting the Testicle, as has been already observed.

Secondly, the admission of air to the inside of the Tunica Vaginalis is probably another.

But Thirdly, the principal cause I believe to be the exposure of the Testicle, and its being unavoidably brought into

The other was the case of Mr. Richard Penney, who now holds an office under the Lord Mayor; the radical cure of whose Hydrocele some of the most deservedly eminent surgeons in town would not undertake, and where even the seton was declined; though there was no other peculiarity in the case, than the Testicle being apparent at the bottom of the Scrotum, attended with some thickening of its cellular substance. Yet he got well with so much ease, that during the process he was apprehensive it would not succeed, as he felt so little pain.

contact

contact with the dressings and other extraneous bodies.

It seems to be the general opinion of the latest writers, and indeed of most practitioners, so far as I have been able to collect, that the bad symptoms attending the common method of caustic and incision, are derived from the inflammation and suppuration of the *Tunica Vaginalis*\*; but

\* Mr. Samuel Sharpe denies that the unfavourable symptoms can arise from the external side of the *Tunica Vaginalis* being exposed to the air; "for he has often seen the whole Scrotum separating in a gangrene from the *Tunica Vaginalis*, and leaving it naked a great many days without any ill effect\*." But the case may differ widely when the air has access to its inside: and perhaps the danger which followed the application of the caustic to one of his patients, might be owing to the admission of air through the punctured Eschar; as the tension of the inflamed Tunic would resist the contraction of the Scrotum. And in the instance where he injected spirit of wine, there can be no doubt but it produced the inflammation; but it may be difficult to determine whe-

\* Mr. Samuel Sharpe's Operations, edit. 6th, p. 47.

but they pay little attention to, or scarce mention the Testicle; though it was once a peritonæal Viscus, and has, within these few years, been found to be covered by a part, which was \* originally a process of the Peritonæum; yet, at the same time, the Tunica Albuginea is asserted to be very

ther the inflammation arose from the affection of the Tunica Vaginalis, or the Testicle.

The sloughing away of the Scrotum only lays bare the outer surface of the Tunica Vaginalis; the Testicle remains covered. This, therefore, does not prove that no ill symptoms follow, when that coat is laid open, and its inner surface and the Tunica Albuginea are exposed. If the Testicle is found diseased during the operation of incision, and is extirpated, the wound in general heals kindly, without any bad symptoms, which would lead us to suppose, that the ill symptoms arose from suffering either the inside of the Tunica Vaginalis, Tunica Albuginea, or both, to remain exposed, and in the way of irritation: and whoever considers how exquisitely sensible the Tunica Albuginea is supposed to be, will think it more probable that the mischief arises from that coat than the other.

\* The Tunica Vaginalis.

irritable,



irritable, as well as acutely sensible \*. And the appearances which quickly follow the use either of a large caustic and opening the Eschar, or cutting the whole length of the Tunica Vaginalis, or the excision of the Cyst, corroborate this opinion; for the Testicle becomes swelled, sometimes to four times its natural size †, is liable to have its Tunica Albuginea slough away ‡, and not unfrequently to suppurate ||.

Though the external air may co-operate in producing these bad effects, yet I imagine the principal cause to be the irritation

\* Monro says the Testicle will not bear irritation. Ed. Med. Essays, vol. 5. art. 22. And Mr. Pott, the best advocate for incision, informs us, “ That the great  
“ irritability of some of those parts which are necessarily  
“ laid bare, and put under a necessity of receiving  
“ dressings, must occasion pain, and a symptomatic fe-  
“ ver.” Pott on the Hydrocele, p. 164.

† Douglas.

‡ Ibid. Gooch.

|| Ibid. Samuel Sharpe.

which the Testicle must necessarily undergo from the application of dressings. I once saw a surgeon perform the operation of castration, when finding the Septum affected by the cancerous virus, he thought proper to remove it; in doing which, he opened the Tunica Vaginalis of the opposite side, by which means the found Testicle appeared loose and rolling in the wound. Not choosing to have it remain in that situation, he entirely covered it by a flap of the Scrotum, and secured it with two stitches, so that the Testicle was entirely hid, and the wound healed up without any one bad symptom\*.

\* This has since happened to myself in a man who laboured under the Chimney-sweeper's Cancer. It was thought necessary to remove one Testicle, and about two thirds of the Scrotum; in doing which (though I took great pains to avoid it) I opened the Tunica Vaginalis of the opposite side, and let out the found Testicle. I had scarce Scrotum enough left to cover it, yet by means of two stitches I succeeded, and the wound healed up in the kindest manner.

Almost

Almost all the later writers are of opinion, that whether the tent, seton, caustic, or incision, be used for the radical cure, the effect is the same, and the future accumulation prevented by these methods exciting an inflammation, which produces an adhesion between the Tunica Vaginalis and Tunica Albuginea, and thus obliterates the cavity in which the fluid was deposited. Though the means are somewhat different, yet the intention is the same, when Monro directs the Canula of the Trocar to be left in the wound, that by its extremity rubbing against the Testicle, it may excite an inflammation, and so produce a cohesion between the Tunica Vaginalis and Albuginea\*.

\* “ Considering how readily contiguous inflamed parts  
 “ grow together, and how many instances there are of  
 “ people obtaining a radical cure of this Hydrocele by  
 “ inflammation coming on the parts, it would seem no un-  
 “ reasonable practice to endeavour a concretion of the  
 “ two coats of the Testicle, when they are brought con-  
 “ tiguous, after letting out the water through the Canula  
 “ of a Trocar, by artfully raising a sufficient degree of  
 “ inflammation.” Ed. Med. Essays, vol. 5.

Mr.

Mr. Samuel Sharpe attributes the perfect cure to the universal adhesion of the teguments of the Scrotum to one another, and to the Testicle itself\*.

Mr. Warner mentions a case, where he accomplished the radical cure by means of a tent introduced through a puncture made by a lancet: a discharge came on the fourth day, which was followed by an abscess, and that being opened, the discharge decreased, and continued to do so till the wound was healed, which happened in a few days afterwards: and he adds, "That the coats of the Testicle, and

\* His words are, "'Tis worth observing, that upon examination of the several Hydroceles, it appeared evidently their cure was wrought by an universal adhesion of the Testicle to the Tunica Vaginalis, and again of that coat to the parts enveloping it\*." And the same doctrine he repeats in his Critical Enquiry †.

\* Samuel Sharpe's Operations, p. 46.

† Critical Enquiry, p. 87.

“ Testicle itself, formed an adhesion with  
 “ each other \*.”

From what Mr. Warner says, I am much inclined to think, that when the tent cures, it acts in the same way as the caustic does; that is, by its means an inflammation is excited in the Tunica Vaginalis, which extends quite through it, and renders it sloughy; but the orifice in the Scrotum being small, the sloughs cannot make their way; in consequence of which, a suppuration of the Scrotum comes on, and the greater part of the Tunica Vaginalis is rotted down and mixed with the pus, before the abscess is opened †.

Douglas

\* Warner's Cases, No. 42. p. 258.

† I am apt to imagine, that the simple puncture more frequently produced a radical cure formerly, than it does now, from the manner of doing it. After puncture with a lancet, a canula was introduced to discharge the whole of the water. Now as the orifice in the Tunica Vaginalis would, in a small puncture, be liable to slip away from  
 the

Douglas seems to think, that the cure may be produced several ways, when the tumour is recent; and that the Tunica Vaginalis may be brought to cohere to the Testicle: that, in consequence of the caustic, the cure may be said to consist in the inflammation raised by it on the Tunica Vaginalis, which, after the mortified part is thrown off, collapses round the Testicle, and prevents any fresh collection of water within it; and if the Sac is thin, that it may suppurate; but that in an old Hydrocele, it is very seldom, if ever, digested, being left behind in a collapsed state round the Testicle. He thinks it may admit of a doubt, whether an inflammation, however excited, can bring a thick indurated Cyst, such as the Tunica Vaginalis becomes in an old Hydrocele, to adhere: in proof of which, he mentions a case

the orifice in the Scrotum, to prevent any difficulty on this occasion, the puncture was directed to be made larger than we now make it; by which means, air getting to the Tunica Vaginalis, might produce the inflammation and abscess, which brought about the radical cure.

where a caustic had been applied a fortnight before he saw it, and where the swelling, pain, and tension, were so great, as made the surgeon justly suspect a Scirrhus ; but upon dilating the Scrotum in its whole extent, the Tunica Vaginalis was seen to cohere very firmly with the integuments ; but there was not the least adhesion betwixt the Cyst and Testicle in any part.

In the several methods which Mr. Pott has used, he declares, “ The point to be aimed at is to excite such a degree of inflammation, both in the Tunica Vaginalis and Tunica Albuginea, as shall occasion a general and perfect cohesion between them\*.”

What effects may have been produced by the tent, canula, injection, or incision, I will not pretend to say, because I have rarely seen them put in practice ; but the method by caustic, which I have recom-

\* Pott on the Hydrocele, p. 176.

mended,

mended, does not appear to me to cure by producing a cohesion of the loose and immediate coats of the Testis (nor do I think the other methods do), but by exciting such a suppuration of the Tunica Vaginalis, as will cause the whole of it to slough away.

The long continued discharge of the sloughs after the Eschar of the Scrotum has fallen off, the hardness of the thickened inflamed Tunica Vaginalis lessening in proportion to the discharge of the sloughs, and the immediate cicatrization of the wound as soon as the sloughs have ceased to come away, together with the laxity of the Scrotum afterwards, will satisfy any person that no adhesion has taken place with regard to the Testicle: for no indurated body can be found within the Scrotum, however thickened the Tunica Vaginalis might have been felt before the operation. Upon the most careful examination of the Scrotum, after the cure by a small caustic, I never could perceive any



adhesion of the teguments to the Testis, but in that particular spot where the caustic was applied, and there indeed it was pretty strong. And I think a careful attention must convince any unprejudiced person that Douglas's notion was groundless, when he supposes, that, after the use of the caustic, a part of the Tunica Vaginalis remained collapsed about the Testicle.

In the foregoing pages, I flatter myself I have given the full weight to every objection that can be raised against the use of the caustic in this disease: some I have occasionally answered as I proceeded, and will now endeavour to obviate such as I have not yet particularly considered.

It has been said, that *the caustic does not always succeed*. But the same may be urged against the incision, or any other method which has been proposed, except the excision. Such instances, however, are very few; and the want of success was probably  
not

not to be imputed to the method: but supposing it true, it cannot be denied that the caustic is as certain as any other. I myself have never known one instance of its want of success; and am pretty certain, that whenever it reaches the Tunica Vaginalis, it is infallible.

Mr. Baker informed me, that he recollected two cases where it had failed; but the caustic had penetrated through the Scrotum in neither of them. One was a double Hydrocele, where the caustic on one side produced a suppuration and discharge of the Cyst, but on the other did not reach the Tunica Vaginalis.—A second application of the caustic penetrated far enough, and produced a cure.

A gentleman of the profession told me, that he applied it once on the recommendation of Mr. Girle, when it failed of success; but afterwards revising the notes which he had taken on the subject, he found that he had not suffered the caustic

to lie on so long as he had been directed.

Another objection is, that *the caustic very rarely penetrates through the vaginal coat; and when it does not, the Tunica Vaginalis must be divided in the same state and manner, as if no caustic had been applied.* Mr. Pott gives this objection its full force in the following words: “The preference which  
 “some practitioners give to this method  
 “(the caustic) has been upon a supposition  
 “that a circumstance, which very seldom  
 “happens, will most frequently occur;  
 “I mean the penetration of the caustic  
 “through the vaginal tunic containing the  
 “fluid. I will not say that the caustic  
 “never does this; but I must say that I  
 “have very seldom seen it do so. If the  
 “tumour be very large and full, the con-  
 “taining parts very much on the stretch,  
 “and the skin and dartos very thin, the  
 “caustic may now and then penetrate  
 “through to the vaginal coat, but this,  
 “whatever may be thought or pretended,  
 “very

“ very seldom happens. All the difference  
 “ between the two methods (caustic and  
 “ incision) will then amount to this, that  
 “ in the former, the skin being mortified,  
 “ the patient is freed from a part of his  
 “ apprehension at its being cut; and the  
 “ surgeon fancying that his Escharotic has  
 “ gone through the vaginal coat, will di-  
 “ vide it as a part of the Eschar; but a  
 “ more careful examination of what he is  
 “ about, at the time of such operation,  
 “ would convince the latter, that he di-  
 “ vides the bag unaltered by the caustic \*.”

I do agree with Mr. Pott, that the cau-  
 stic does not always penetrate quite through  
 the Tunica Vaginalis; but I believe, if it  
 extends far enough to affect its external  
 surface, it will produce an inflammation,  
 which will extend through every part of  
 it, and cause the whole Tunica to slough  
 away.

\* Pott on the Hydrocele, p. 156 and 157.

An accident once convinced me of what Mr. Pott alludes to, relative to the apparent sound state of the Tunica Vaginalis sometimes after the action of the caustic. When a very young practitioner, I applied the caustic to the Scrotum of a private patient labouring under an Hydrocele of the Tunica Vaginalis. As the Integuments and Sac both appeared thin, I suffered it to lie on only four hours; on its removal, I did not like the appearance of the Eschar, and feared the caustic had not penetrated far enough. In order to determine how far it had gone, I pushed a lancet gently into the Eschar, which passed through the dead part of the Scrotum without resistance; but having done this, I thought I felt underneath the Tunica Vaginalis sound, and as far as I could judge by the touch, no way altered. This circumstance alarmed me much, as I feared the patient would have been subjected to the uneasiness of a second caustic; but in less than twenty-four hours, I was relieved from my anxiety, by perceiving a considerable

derable tension of the Tunica Vaginalis, and observing the other symptoms, which indicate such an inflammation of the vaginal coat, as will produce its suppuration, and, in consequence of that, the radical cure. Accordingly the patient received a radical cure in less than six weeks, though the fever and cholic pains were more considerable than they commonly are, but never so violent as to make me apprehensive for his welfare.

From the appearances I have mentioned, I am satisfied that the penetration of the caustic quite through the Tunica Vaginalis, is not essentially necessary for the cure. Nor indeed can there be any reason why a surgeon, who is persuaded of the superior advantages of the method by small caustic to that of incision, should think of dividing the Tunica Vaginalis in its whole extent: he will rather wait till the Eschar be sloughed off, and the wound healed up, and then apply a second caustic, which may be more efficacious.

Another

Another objection to the caustic is, that *it gives more pain than the incision*. Mr Pott says, “ The pain attending the first application of the caustic, is indeed to some persons but little, but in many it is fully equal to that of the knife, and must always be of longer duration \*.”

If it be acknowledged, which is really the fact, that the caustic to some people gives very little pain, the dread of a cutting instrument is in general so great, that few patients would hesitate in preferring the first: neither is it to be conceived, that the pain of a caustic can equal that of the knife, for who then could suffer its long duration?

It has also been supposed, that the caustic is preferred to the knife, “ *because it requires no dexterity in the operator †.*”

\* Pott on the Hydrocele, p. 157.

† *Ib.* p. 158.

I must confess I cannot view it in that light; for the incision of the vaginal coat is so extremely easy, that neither it, nor the application of the caustic, merits the name of an operation. And I may venture to assert, it will require more dexterity to prevent a caustic from spreading to a considerable distance on the Scrotum, than to make a simple division of the Tunica Vaginalis.

Mr. Pott objects to the removal of a piece of the Scrotum in the cure of this disease, even by caustic; *because he has often seen it prove troublesome to heal, and very apt to gall and fret after cicatrization* \*.

What may have been the case when a large caustic has been applied, I cannot say; but in every instance where I have seen a small caustic used, the ulcer made by it healed up as kindly, after the sloughs

\* Letter to Mr. Douglas at the end of Treatise on the Hydrocele.



came away, and the cicatrix stood as firm as it would have done if the caustic had been applied in any other part of the body.

I hope I have fairly stated and answered the strongest objections against the use of the caustic in this disease, and that, by what I have said, it appears few of them can be urged effectually against the mode of caustic, which has been recommended.

Upon the whole, if the disagreeable symptoms which attend the incision, excision, and large caustic, are principally derived from the exposure and irritation of the Testicle, we can easily account for the favourable and mild appearances in the method by small caustic, where these accidents are so much guarded against, by not dividing the Eschar, nor puncturing the Tunica Vaginalis, till it is ready to slough away.

I have noted down, for some years past, such cases as were treated for the radical  
cure

cure in St. Thomas's Hospital, which have fallen within my knowledge, though many were cured of whom I never heard. There is so much similitude between them, that a long detail would be neither instructive nor entertaining. I shall then only subjoin two cases, in which there appears to be the greatest veracity.

## C A S E I.

Mordecai Dunton, of Deptford, aged forty-eight, was admitted into St. Thomas's Hospital in November, 1765. He was of a thin habit, and had enjoyed very good health his whole life. In the preceding May he had received a blow upon the Scrotum by a fall. About a month afterwards, he perceived a swelling on the right side of the Scrotum, which proved a true Hydrocele, and gradually increased, appearing to contain about a pint of fluid on the 23d of November, when, without any previous preparation, Mr. Baker ordered  
a caustic

a caustic to be laid upon the inferior and anterior part of the Scrotum, which was suffered to lie on between five and six hours.

Nov. 24th. On removing the dressings, the caustic appeared to have acted very well. The Eschar had nearly a circular form, and seemed to be about two inches diameter. The patient was perfectly free from fever, and void of all complaints.

On the 25th, the patient continued in the same state, excepting a slight pain in his back, which he imagined proceeded as much from lying in bed, as from the caustic. He had no feverish heat, and a good appetite.

On the 26th, he continued to complain of some pain in his back, which he still attributed to lying in bed: his pulse at this time was somewhat quickened, and his tongue white.

On

' On the 27th, he had the same complaints, with nearly the same degree of fever, but retained his appetite.

On the 28th, he continued to feel the same slight pain passing from the Eschar to the Loins: he had slept well in the night, and was quite free from fever.

On the 29th and 30th, and Decem. 1st, much the same.

Dec. 2d. He found himself easier. The Eschar of the Scrotum had entirely sloughed off, and the Tunica Vaginalis appeared underneath much loosened, and ready to separate.

From Dec. 2d, to the 6th, he was sometimes feverish, and at other times quite free from fever, and complained of his usual pain; but still thought it would go off, if he was suffered to walk as much as he chose. At this time the Tunica Vaginalis, in its sloughy state,  
 G projected

projected considerably through the Integuments, and looked as if it would soon burst.

On the 7th; he had griping pains, and water appeared to be discharged in the poultice. His pains went off on having a stool.

From the 7th to the 16th, the water continued discharging; the sloughs projecting through the orifice of the Scrotum, and growing more and more loose; the size of the Scrotum at the same time gradually decreasing. From this time, the man was allowed to walk about the ward, shaved the patients, and performed other little offices.

On January 23d, he was discharged, perfectly and radically cured. The application used to the Scrotum, from the removal of the caustic, till within a few days of the cicatrization of the wound, was a cataplasim of oatmeal, made with the common fomentation of the Hospital.

C A S E II.

## C A S E II.

In March 1769, David Burke was admitted into St. Thomas's Hospital. He could not exactly tell his age, but believed he was about thirty, though he appeared older. He was apparently free from any other complaint, and seemed in good health. He had an Hydrocele of the Tunica Vaginalis on the right side. The water had never been discharged: but Mr. Smith and Mr. Martin, as well as myself, judging it to be a proper case, I applied, March 23d, a caustic towards the bottom of the Scrotum on the fore part. Previous to its application, I made a circular mark with ink, about the bigness of a sixpence, as a direction for its size; but notwithstanding the great care I took, it formed an Eschar somewhat larger than an half-crown piece. It was suffered to lie on six hours.

On the 24th, he was quite easy.

On the 25th, he said he had some fever in the night, and complained of pain in his back, which, however, was not much greater than he had been used to feel from the weight of the tumour. From the first removal of the caustic, the *Tunica Vaginalis*, under the teguments of the *Scrotum*, felt thicker and harder than before its application; and this feeling sensibly increased. The integuments appeared inflamed round the *Eschar*, but no where else.

On the 26th, he had slept little in the night, complained of pain, which shot up into the loins in the course of the spermatic vessels: no remarkable inflammation about the *Eschar*, nor any part of the *Scrotum*. A clyster, which I had directed the night before to relieve his cholicky pains, had not been given; the nurse conjecturing it was not necessary, as he had passed two or three stools. His tongue, at this time, was white and furred, but his pulse not quickened. I ordered him to lose eight  
 ounces

ounces of blood, and a large clyster to be immediately injected. About six o'clock the same afternoon, I found him greatly easier, though his pulse was quicker and fuller, and he was sitting up in bed, eating veal and potatoes. I advised him to desist; and directed another clyster at night, and an opiate draught.

On the 27th, he was quite easy, and his pulse quiet. I ordered another clyster in the evening. From this time he had no medicines, except a clyster once prescribed when he was costive, and he lived on the common diet of the Hospital.

April the 3d. Observing that the Eschar of the Scrotum had entirely sloughed away, and that of the Tunica Vaginalis began to loosen and project, I made a small puncture with a lancet, and discharged some of the water. From this time the Scrotum gradually diminished in bulk, the sloughs coming away daily; and he was discharged, perfectly cured, on the 27th of April.



In June following, he returned to the Hospital with some venereal eruptions, for which he was salivated and cured. I took this opportunity, as I had done frequently in other patients, of examining his Scrotum, and could not perceive any remains of indurated Tunica Vaginalis, nor any adhesion to any part of the Testicle, save the particular spot where the caustic had been applied\*.

The

\* Having cured another person of the disease since this little Essay was finished, it may not be improper to add the case, as so many persons now in London were witnesses to it.

George Holliday, aged sixty-two, who, in other respects, had always enjoyed a firm state of health, and had been constantly accustomed to work in the open air, was admitted, August 31, 1769, into St. Thomas's Hospital, for an Hydrocele on each side of the Scrotum. That on the right side was largest, and appeared to contain about a pint of water. He said it had been coming four years, and he imagined it to have proceeded from a blow upon the groin. That on the left side was about half the bulk of the other, and had been perceptible only two months.

On

The best practical writers advise, that particular attention be paid to the habit and age of the patient, whenever the radical cure is to be attempted by incision,

On Sept. 7th, I laid two caustics on the Scrotum, in the manner I before directed, of about the size of a sixpence, and suffered them to remain nine hours. Upon their removal, each Eschar extended to the dimensions of a half-crown piece.

On the 8th, common basilicon was applied to the Eschar, and having had no stool for two days, his body was opened by some lenitive infusion.

On the 9th and 10th, he remained perfectly easy, no tension having come upon the Scrotum, which was carefully suspended; and he was suffered to walk about the ward, but not to go out.

On the 11th, he said he had some fever in the night, but his pulse was then perfectly calm. This day I began to perceive a tension on both sides, though it was not considerable, yet more evident on the left than the right side. He passed two or three loose stools, which were checked by a dose of rhubarb.

On the 12th, he was easy. The Tunica Vaginalis felt somewhat harder. He complained of a slight cough from

cision, excision, or large caustic; and forbid it in old age, or where the habit is complicated with some other disease.

Upon

catching cold, for which he had a pectoral linctus. As he desired the Scrotum to be kept warm, I ordered the dressings to be laid aside, and the fomentation poultice to be applied immediately upon the Eschar.

On the 13th, his cough was gone, and he had no pain. The Eschars began to loosen, and the hardness of the Tunica Vaginalis on each side to increase; but not to that degree which I had reason to expect from the time the caustic was suffered to lie on.

14th. His cough quite gone.

On the 15th, perfectly easy.

On the 16th, he complained of slight twitches in his bowels. The Eschar was loose, and a small quantity of water was discharged in the poultice.

17th. Quite easy.

On the 19th, he complained much of a purging; but upon examination, his uneasiness arose from cholicky pains, and frequent motions to stool, with trifling evacuations; so that upon the injection of a clyster, which was followed by a copious stool, he was entirely relieved.

On

Upon looking over my notes, the oldest patient who has lately applied for the radical cure of this disease, is sixty-three: but I can very well remember that Mr. Girle never declined it upon account of age simply, if the Scrotum and general habit were free of other diseases; and that  
 people

On the 24th, I was told the Scrotum had burst on one side, and the water was in part discharged; and upon examining it, I perceived a bladder-like appearance projecting out of the hole in the Scrotum, on the right side, which I snipped with a pair of scissars, and discharged some water. This was the Tunica Vaginalis not sufficiently affected by the caustic, which I had for some days suspected to be the case, because the hardness of the Tunica Vaginalis did not come on so soon, nor was so remarkable, as in every other patient I had seen. He complained of some cholicky pains, which were relieved by a clyster.

On the 25th, the same bladder-like appearance was observable on the left side; upon which I dipped some lint in a solution of lunar caustic, and applied it to the Tunica Vaginalis on both sides; and afterwards ordered a solution of the common caustic to be applied in like manner every day when the poultice was changed; and this occasioned neither fever nor pain.

people more advanced in life, have received a cure with equal ease as the younger. Mr. Baker has assured me, that he has succeeded as well in men of four-score as those of forty.

In the second edition of Mr. Pott's Pamphlet on the cure by Seton, published since the last edition of this Essay, the only additions to be found are in the two last pages, and are as follow: " Since this  
" pamphlet first appeared, Mr. Else has  
" published a second edition of his Account

In about a week I was satisfied that the caustic had sufficiently affected the Tunica Vaginalis on each side, from the proper hardness which came on, and the Eschars having the same appearance which they always have when the caustic has done its duty. From this time the sloughs began to come away, the cure went on as usual; and October 30, the wounds were cicatrized, although, during the last ten days, he caught an ulcerous sore throat from a patient who came with this disease into the same ward; but of this he was soon relieved by Dr. Greive, who had carefully attended to the whole process for the cure of this double Hydrocele, and never found his pulse in the least quicker than before the operation, till he was seized with the sore throat.

“ of the Cure by Caustic. In this he has  
 “ recited two attempts by the seton, which  
 “ were under the conduct of Mr. Martin,  
 “ in St. Thomas’s Hospital.

“ I make no doubt that the circumstances  
 “ were as Mr. Else has related them ; but  
 “ I must take the liberty of saying, that  
 “ although I have practised the method of  
 “ cure by seton on a very considerable  
 “ number of people, both in the Hospital  
 “ of St. Bartholomew and out of it, of all  
 “ ages, and in all circumstances, I have  
 “ never yet met with that trouble, or  
 “ those disagreeable symptoms, which Mr.  
 “ Else has related as happening to Mr.  
 “ Martin’s two patients ; on the contrary,  
 “ I am, from very frequently repeated ex-  
 “ perience, convinced, that the cure by the  
 “ seton is by much the least hazardous,  
 “ painful, or fatiguing, as well as the  
 “ most expeditious and certain of any yet  
 “ proposed.”

I dare not venture to speak with confidence of a method I have never tried, but those instances of the use of the seton which I have accidentally known, by no means justify these assertions. Mr. Martin's cases, mentioned above, are inserted in his own words. I have neither added nor diminished a single syllable. To these I may add the following :

On the 13th of March, 1773, Mr. Pott performed the operation of the seton on a young gentleman, who himself informed me, that he was confined a fortnight in bed ; that opiates were first given him, and then the bark ; that he endured much pain, and was troubled with the repetition of poultices ; and that, notwithstanding this pain, trouble, and confinement, in the space of a month there was found water in the Scrotum, as before the operation.

On the 24th of April following, he applied to me for a cure ; and, in the presence of Mr. Vaux, Surgeon to the London Dispensary

penfary (who had likewise been present at the operation of the feton), I put on a small caustic to his Hydrocele, and after it was removed, suffered him to sit up every day, and walk about the house. There was, during the cure, no necessity for bleeding, or for the use of either opiates or the bark.

The wound was entirely healed up in six weeks; and during the last fortnight he went out every day, either on account of pleasure or business. This gentleman is therefore a living and grateful instance of the ease and safety attending the small caustic; and he is so much better pleased with it than the feton (having experienced both operations), that he requested me, when any person was desirous of having an account of it, to refer them to him for information.

Since the publication of this Treatise, I have attended many persons with this disease, and many before numerous spectators;



tators ; and I still assert, that I never met with a single case wherein it failed ; nor have I ever seen the patients in danger, or suffering in any considerable degree.

Among others, I laid a caustic on the Hydrocele of a surgeon in town, who has, unasked, favoured me with the following account of what he experienced from the method in question, and his motives for giving it the preference.

“ I not only inquired at most of the  
 “ hospitals in town, concerning the different  
 “ methods made use of in the cure of the  
 “ Hydrocele, but saw them all performed,  
 “ except the application of the small  
 “ caustic.

“ Having an Hydrocele myself, I was  
 “ as attentive as possible to the success of  
 “ these operations. Some of the patients  
 “ lost their lives. Those who fared best,  
 “ suffered more pain, and other inconven-  
 “ niences, than I chose to encounter with  
 “ for

“ for the sake of a radical cure. I there-  
 “ fore came to a resolution to be satisfied  
 “ with a partial one from time to time.

“ I once let out the water myself with a  
 “ lancet ; but in a few months it collected  
 “ again as much as ever. At last, hearing  
 “ of the small caustic, and finding the suc-  
 “ cess of it so well attested, I altered my  
 “ resolution, and was determined to make  
 “ a trial of it.

“ I cannot help taking notice how tri-  
 “ fling the pain was which the caustic oc-  
 “ casioned : it was little more than that  
 “ of a blister. I confined myself two days,  
 “ in expectation of what never happened,  
 “ viz. that violent symptoms might come  
 “ on that would require it. I still am of  
 “ opinion, that was I to have another on  
 “ the other side, I should not confine my-  
 “ self at all. I have not the least objection  
 “ to your inserting this in the additions to  
 “ your next edition, or referring any  
 “ body to me for a confirmation of it.”

I likewise

I likewise cured a young gentleman who had a very large Hydrocele and Rupture on the same side. He was ignorant of his having a Rupture; but on my examining the Scrotum, I discovered one. I therefore thought it prudent first to discharge the water by puncture. After the water was evacuated, the Hernia became very apparent, and was with great ease reduced. A steel truss kept it up easily; and as soon as the water was again collected, I radically cured him by the small caustic.

That this method has failed in the hands of some, I admit: but let the following instructions be carefully adhered to, and the success will warrant me in asserting, that it will be attended with ease and safety. Let the caustic be of due strength; let it be laid on in sufficient quantity; let it remain on a due time; and let the Scrotum be suspended by an easy truss; and I have no doubt but a perfect cure will be brought about to the satisfaction of the patient and surgeon. But if the  
caustic

caustic is weak, an inconsiderable quantity is applied, and too soon taken off; if, too, the surgeon is negligent, suffering the Scrotum to hang down, or the truss to pinch and press the Scrotum, inconveniences may arise, for which the surgeon, and not the method, will deserve censure.

When I first used this method, I was afraid of meddling with cases where the Tunica Vaginalis was thickened, but I now no longer regard this circumstance. The cure is indeed slow in such persons, the thickened Tunica Vaginalis not digesting kindly; but when the Eschar of the Scrotum is fallen off, I find, by experience, I can hasten the suppuration by a proper use of the Lapis Infernalis, taking a piece with a sharp point, and twisting it about till it gets to the water. This gives no pain; and I have generally observed, that those patients who have the Tunica Vaginalis thickened, suffer the least: and I not only permit, but recommend walking about to them, as I think exercise hastens the cure.

O F

## T U M O U R S

*Formed by Ruptured Veins, sometimes  
mistaken for Aneurysms.*

[First Published 1767.]

EVERY one who, in any considerable degree, has been conversant with the practice of surgery, must have seen, in different parts of the body, but most frequently in the extremities, certain tumours, which, having been slow in their progress, and appearing without any inequality or discolouration on their surface (unless when the integuments are greatly distended), are commonly judged to be *Aneurysms* from internal causes, and when opened, are found to contain blood, both in a fluid and coagulated state. If, from the three following observations, collected within these two years, it should seem probable

probable that these bloody tumours are more frequently caused by the rupture of veins than of arteries, surgeons may be hence induced to inquire further into this subject, and the fact being once well established, I apprehend the art of surgery may be considerably benefited, and surgeons will not be so much alarmed as they have hitherto been at these cases, but will attack them in their beginning, before the extravasated blood has had time to do much mischief.

## OBSERVATION I.

Michael Callahan, a mariner, was admitted into St. Thomas's Hospital, on the 30th of January, 1766, for a large tumour on the inside of the right arm. He said, that this tumour immediately followed a contusion he had received by falling with the inside of the upper part of his arm against the stock of an anchor, about four years before his admission into the

Hospital; that at first it was of a considerable magnitude, but that afterwards, by some applications, it was reduced to the size of a pigeon's egg. During two years, it did not seem to grow any bigger: but afterwards, upon his being attacked with a fever in the West-Indies, from which he narrowly escaped, it gradually increased, and, when he came into the Hospital, was considerably larger than a man's head, extending from the arm-pit, to within about two inches of the flexure of the cubit. The tumour was judged to contain blood; and this opinion was strengthened by the man's declaring, that a surgeon, either at Portsmouth or Plymouth, had punctured it, and, observing nothing to follow but blood, closed the wound, which soon healed up. On the 22d of March, 1766, he died. The next day the body was conveyed to the anatomical theatre; and while we were placing it in a proper position, the tumour burst, and above a pint of ferous fluid was discharged.

The

The first step taken was to open the *thorax* and *pericardium*, where all the large vessels, springing from the basis of the heart, were found, and of their usual size. They were traced to the neck; but they did not appear to be any way diseased. The right *axillary* artery and vein were examined, and found to be perfect. I next opened the tumour, and discovered it to be full of that coagulated mass, which is always contained in old tumours, formed by the extravasation of blood. I then began, at the *axilla*, to trace the artery, and found that it passed quite through the tumour, without any alteration with respect to its dimensions, and without any rupture, or appearance of disease. The coagulated mass surrounded the artery entirely, but had not in the least corroded it, though it adhered closely in some places to its surface. I then intended to trace the *axillary* vein, and made a puncture into it, about an inch before it entered the tumour, into which I thrust a probe, and found that it passed easily on towards the



mass. Upon putting my finger into the tumour, I felt the naked extremity of the probe. I afterwards laid bare the deep-seated branch of the *basilic* vein, which lies close to the *brachial* artery, just above the flexure of the cubit, and thrust a probe into it, which passed readily upwards; and upon introducing my finger again into the mass, I also felt the naked extremity of that probe. The parts remained in this state till the day following, that the physicians and surgeons of the Hospital might see what had been done. When I came the next morning, I found that the probe, which I had left in the *axillary* vein, had been pulled out, and I could not readily hit upon the orifice I had made for its introduction: I therefore made another, and introducing a large blow-pipe, threw in air, and observed that the vein, just as it approached the tumour, was considerably dilated, and then opened into it. This likewise was seen by all the physicians and surgeons of the hospital.

O B S E R-

## OBSERVATION II.

A few months ago, a woman was received into the Hospital, for a large swelling in the calf of the leg, which was judged to contain blood. On opening it, fluid blood escaped, mixed with a serous matter; and the surgeon, by introducing his finger, pressed out some of that mass, proper to these tumours. He observed, upon pressing his finger onwards, that the upper part of the *fibula*, for about two inches, was quite deficient, having been totally dissolved by the extravasated blood. Upon this, it was determined immediately to amputate the leg. It was afterwards injected by the artery, and the injection, as I myself saw, had passed through the *posterior tibial* and *fibular* arteries, and into the *anterior tibial* artery. I have been informed, that the state of the veins was not inquired into. Though the rupture of the vein, in this case, was not absolutely discovered, yet the contents of the tumour, the dissolution of the bone,

and the free passage of the injection through the principal arteries of the leg, without extravasation, seem to evince it.

### OBSERVATION III.

A young man, about twenty-five years of age, of a very healthy full habit, had a swelling in the ham. He said, that it came after his endeavouring to raise a considerable weight, and that he felt a crack where the swelling appeared, as if something had been broken. Some time in December, 1764, this tumour was opened, and a large quantity of fluid and clotted blood being discharged, it was judged to be an *Aneurysm* of the *popliteal* artery. The limb was instantly amputated, and immediately after the operation, carried to the anatomical theatre. I was myself in the country; but Mr. North, who then dissected for the lecturers, and to whose dexterity and diligence I am much obliged, received it; and having at that time some coarse injection

jection upon the fire, while the limb was yet warm, he poured it into the artery, and observed it not to extravasate within the tumour, as he expected, but to continue its course to the extremity of the toes. He then looked for the largest internal vein, and thrusting a probe into it, found that it passed readily into the tumour. He afterwards dissected the vein with great caution, and discovered a rupture just above a pair of *valves*, the edges of which were torn and irregular.

Those large bloody tumours which are seated in the calf of the leg, are observed frequently to follow violent fits of the cramp. It was the opinion of a late eminent surgeon, that they were produced by the *gastrocnemii* muscles pressing the *posterior tibial* artery against the bone, and by that means rupturing its coats. Is it not probable that spasms, blows, strains, extraordinary muscular efforts, which are ranked among the causes of the *spurious Aneurysm*, are more likely to rupture the  
veins

veins than the arteries? I have seen several of these tumours, seated in the calf of the leg, opened; and in all these cases, there was a necessity for amputation; because the bones of the leg were found to be either totally dissolved in some part, or else were so much affected, that the fingers could be pressed quite through the substance of one or the other of them; and therefore, the state of the artery and vein was never inquired into.

QUERY, If surgeons, by dissecting carefully these tumours, whenever occasion offers, and by attending closely to their cause, rise, and progress, may not soon be able to lay down very probable rules for determining, before they are opened, whether they proceed from an artery or a vein.

The arteries sometimes become ruptured without any previous dilation. I have a preparation of the *aorta ascendens*, appearing in no place dilated, which exhibits

hibits two ruptures ; one is small, and situated about half an inch distance from the *valves*, from which a *coagulum* was formed about the size of a large nutmeg, that was seated between the trunk of the *aorta* and the trunk of the *pulmonary* artery. From the white appearance of the *coagulum*, and the regularity of the edges of the rupture, it seemed to be of long standing. The other rupture is much larger, seated at the curvature between the exit of the right and left *carotid* arteries, the edges of which are torn and irregular, and formed a bloody tumour, which pressing against the lower part of the *trachea*, and the branches of the *bronchia*, destroyed the patient by suffocation, in less than a month from its first rise, and before there was any appearance of external swelling.

AN  
 A C C O U N T  
 OF A  
 SUCCESSFUL METHOD  
 OF  
 TREATING SORE LEGS.

[First Published 1771.]

**N**O disease occurs more frequently in a large hospital than old ulcers on the legs. Their cure is generally tedious and troublesome, often uncertain, and sometimes dangerous. It is a disease to which the poor are more liable than the rich, and for this obvious reason, they are more exposed to accidents; and when they meet with a wound or contusion in the leg, not being in circumstances to lie by, if they can possibly move about, the injured part inflames, and becomes an ulcer, which, for want of proper care, may continue many years. Women with obstructed  
 menfes,

menfes, and fuch as have fharp juices and a cachectic habit of body, are very fubject to this diforder. When people in eafy circumftances meet with fuch accidents, having the means of reft and proper care, they generally foon get well: or when afflicted with fuch a difeafe as may difpofe the body to this complaint, having recourfe to proper medical affiftance, they often either prevent the diforder, or obtain a cure by removing the predifpofing caufe. It is a grievous complaint in all fituations of life, but is doubly fo to the poor, frequently depriving them of the means of earning their bread. Every furgeon, who has frequented large hofpitals, knows and laments the difficulty of cure: for though reft and a horizontal pofture, with any fimple application, may effect it in recent fores, and in good conftitutions, yet where the ulcers are of long ftanding, or have hard callous edges, or happen to fuch as are in a bad habit of body, we daily fee them refift every ufual method. Sometimes preparations of mercury,



cury, such as calomel, or Van Swieten's solution of sublimate, have seemingly produced a good effect. At other times, I have thought sea-water of use; and have often seen the bark prescribed with advantage. But I have frequently known all these fail. It is no uncommon thing, after bringing an ulcer into such a seeming disposition to heal, as to flatter us with the hopes of a complete cicatrix in a few days, to see it become painful, inflame, look foul, spread, and even gangrene; and when, by the use of antiseptic fomentations and poultices, the bark and opium, the spreading of the sore is stopped, and the sloughs cast off, the ulcer is probably larger than it was when we first began to treat it. By a continuance of these means, we may bring it again into a disposition to heal, and probably see the same scene acted over again.

About two years and a half ago, in a conversation with Dr. Huck upon this subject, he told me, that Mr. Battiscomb, apothecary,

the cary, in Half-moon-Street, Piccadilly, had a very speedy method of curing sore legs; one remarkable instance of which he had lately seen, and had heard of others. The case which had fallen within his knowledge was that of a servant maid, who had laboured under a very bad painful ulcer of the leg for twelve or fourteen years, and had come out of two hospitals without her cure. Dr. Huck said, that he did not know the whole of Mr. Battiscomb's method, but that he believed the principal part of it consisted in the application of a tight bandage. He said, that Mr. Battiscomb first applied a linen rag, moistened with a liquor, which was probably tincture of myrrh: that over this he applied a thin plate of lead, and then a roller very tight from the toes to above the knee. If the bandage grew loose in the course of the day (for she went constantly about her work), she was to return to him to have it re-applied. She took five drops of a medicine twice a day, which Dr. Huck supposed was a solution of *mercurius corrosivus*

*sivus*

*spiritus sublimatus in alcohol.* She got well in about two months, and has continued to enjoy good health ever since\*. She still wears a very tight roller in the day, taking it off on going to bed, and applying it again in the morning.

I immediately recollected, that Mr. Battiscomb had cured a grenadier and an officer's servant, of ulcers in the legs, which I thought would be difficult to heal without rest, and therefore advised them to go into an hospital. Some time afterwards, meeting with Mr. Battiscomb, I told him, that I had heard of his success in curing a disease which foiled us very much in the Hospital, and that if he would sell us the application, we would purchase it of him. He said nobody could use the application but himself.

Mr. Martin, my colleague in St. Thomas's Hospital, and I, determined to try

\* It is now four or five years since she was cured.

what bandage would do in old ulcers of the legs, without administering any internal medicine, and find it so exceedingly efficacious, that I believe it will seldom fail where there is no carious bone. The first thing we do, if the ulcer be foul, is to endeavour to make it clean, by the application of a bread and milk, or some other emollient poultice. When we have obtained this end, we apply a linen cloth, moistened with tincture of myrrh, or *Gou-lard's eau vegetau-minerale*, as from experiment we may find best to agree. If these should give pain, we then first apply dry lint, and upon that a piece of cloth, spread with the *ceratum epuloticum*, or *ceratum album*. Over this we lay a very thin plate of lead, cut to the figure of the sore, and just large enough to cover its edges. This is secured upon the part with a bandage drawn as tight as the patient can bear it, even so as to make the leg feel numb, which is rolled from the toes to above the knee. In proportion as the sore contracts, we lessen the size of the plate. When the

patients are well, we recommend it to them for the future, to keep the leg constantly rolled tight in the day-time.

Now, though this method be exceedingly efficacious, yet it is not without its disadvantages. I have said that it is sometimes dangerous to heal those old sores: when, therefore, from the long continuance of this drain, or from the bad habit of body, we apprehend ill consequences from healing the ulcer, we content ourselves with bringing it into a better condition, and with keeping it so, by a judicious application of the bandage. Even where we have no great fears about healing the ulcer, it may be prudent to advise an issue in the other leg, to order now and then a dose of some laxative medicine, and to confine the patient to a spare diet for some time after the sore is well. But if, notwithstanding these precautions, any disorder should supervene, which may be imputed to the healing of the ulcer (such as pulmonary complaints, which are the most frequent),

frequent), we immediately endeavour to open the fore again.

I could give many histories of cafes successfully treated in this way; but as the method is already described, and so simple, these histories would contain nothing more material than the duration of the complaint, and the beginning and finishing of the cure. Besides, the giving particular cafes to bear testimony to the utility of a practice of such notoriety in a great and public hospital, would be superfluous.

I must here observe, that the intention of curing ulcers of the legs in bandage, is not new. Wiseman, in his second book of surgery, wherein he treats of ulcers on the legs, recommends a laced stocking, not only to promote the cure of this disease, but also to prevent a relapse; and gives some cafes of his success: however, I think the roller greatly preferable to the laced stocking, because it can be applied more evenly, and consequently fits easier.

*Uncommon Case of a fatal Hernia.*

[First published 1771.]

ON a *Wednesday* in *April*, 1767, before I was elected Surgeon to St. Thomas's Hospital, in returning from giving a lecture, after all the surgeons had left the house, I was desired to see a patient, who, I was told, had been out in a coach upon business, and, from a jolt, had a swelling come suddenly in his groin. It was about the size of a chestnut, seated below the edge, and about the middle of *Poupart's* ligament. It had, both to the eye and touch, so much the appearance of a lymphatic gland, that I could scarcely credit the man's account of it; especially as I was informed, that he was in the hospital for pains in his limbs, which he said were rheumatic, but which, by the physician whose patient he was, were deemed to be venereal. I desired that the swelling might  
be

be poulticed ; that he might be carefully watched, to see if any symptoms of strangulation came on ; and that he might be shewn to the surgeon to whom he belonged. On the Saturday following, I was told that he was dead with symptoms of strangulation, having passed no stool, though several clysters had been administered. I procured leave to open the body ; and raising the integuments, laid bare the lymphatic gland which I had felt, which was much enlarged and inflamed. I then dissected *Poupart's* ligament very clean ; and though I raised up the edge of the gland all round with my finger, I could discover no appearance of a *hernial sac*. I then cut into the substance of the gland, without being able to see any thing like a rupture. After this I made an opening into the cavity of the *abdomen*, and presently saw that a very small portion of the *ileon* had descended, and was strangulated. The intestine above the strangulated part was livid, where I made an incision into it, and I found that I could pass a blow-pipe, or my



finger, along the intestinal canal beyond the strangulated part, and without interruption from it. On dissecting away the lymphatic gland, I saw that a small portion of the intestinal tube, about the size of a hazelnut, had descended.

This case shews, that a fatal strangulation may happen, though the whole circumference of the gut is not inclosed in the stricture. Another circumstance perhaps worth remarking is, that in this case, an operation might have been begun, and perhaps quitted, without discovering the nature of the disease; for unless the surgeon had carefully dissected away the gland, as I did after death, he could never have discovered the Hernia.

A N

*Encysted Tumour in the Scrotum,  
which took its Origin from the  
Urethra, and contained a great  
number of calculous Concretions,  
as well as Urine.*

[First Published 1776.]

**A**BOUT the latter end of August, 1772, a young gentleman, between twelve and thirteen years of age, was brought from the country for my opinion; whose complaint appeared to me to be of a very singular nature. He informed me, that at certain times, he had a pain at the end of his *penis*, which, from his account, resembled the pain which patients feel who have a stone in the bladder; and said, that at different periods, he had voided several stones of the size of a very small pea, which he shewed me. Upon these I observed smooth surfaces, as if they had

rubbed against other stones. He complained of a swelling, which gave him continual pain, in the *scrotum*; and on examining it, I found it distended beyond its natural size; and there appeared within it, on the right side, an hard tumour, which was so exquisitely sensible at its lower part, that he could not bear to have it properly examined. He told me, that when he made water, he could perceive some of the urine escape into the *scrotum*, as it was passing along the *urethra*. The following circumstances were mentioned relative to his making water, which I desired to see. When he had discharged all the urine he was able by the common powers, he pressed the upper part of the *scrotum* with his fingers, and forced out more: he then took a male catheter out of his pocket, and passing it about two inches into the *urethra*, discharged still more. What was discharged by the catheter, smelt like urine which had been long stagnant.

Inquiring

Inquiring into the origin of the disease, I was told, that when he was two years old, he waked one night in great pain, the *scrotum* was found much inflamed, and was distended to the size of a man's fist; that this swelling was made to subside by fomentations and cataplasms; and that from this time till he was six years of age, he had many relapses, and was cured in the same manner as before. When he was about ten years of age, the pain of the *scrotum* was much increased; and in April, 1772, he, for the first time, voided a small stone; and at different times since, he voided sixteen. He said, he had often perceived a stoppage in the passage, so that he could not make water, and when this happened, on introducing the catheter, he found that he pushed something aside, after which the urine came away freely.

Having attentively considered all I had heard and seen, I gave it as my opinion, that he might be relieved by an operation; but wishing to have a consultation upon  
this

this singular case, and both anatomical and surgical knowledge being requisite to the acquiring an accurate idea of it, I desired to have the opinion of Dr. Hunter and Mr. Warner.

After a very long and careful examination, we were unanimously of opinion, that there was a membranous bag in the *scrotum*, which communicated with the *urethra*, and that the stones he had voided, and the urine he had discharged by the catheter, came from thence, and that there were more remaining, which caused the extraordinary tenderness at the bottom of the *scrotum*, and the constant uneasiness which he complained of. We likewise concurred in opinion, that it was adviseable to attempt the removal of the bag, and its contents.

It was foreseen, that as the wound healed, the preternatural orifice in the *urethra* might, or might not, close up; but if it did not, the worst that could  
 happen

happen, would be the urine's being discharged in two places, part at the preternatural opening of the *urethra*, and part in the common way. And the possibility of that event, was thought to be no reasonable objection to an operation, which promised to relieve him from perpetual misery.

In October, 1772, I performed the operation in the following manner:—Having placed the patient on a table, nearly in the same position as for castration, I removed an oval piece of the fore part of the *scrotum*, by which means I laid bare the bag. I then separated the *scrotum* by dissection on each side, till I had exposed more than one half of the bag. I was unwilling to proceed further, till I had examined the contents. I therefore made an opening into the bag, out of which issued a little urine; and introducing my finger, I discovered a very large quantity of small stones, which I brought out. I then passed a catheter down the *penis*, and  
I soon

I soon perceived that our opinions of the case were well founded ; for with my finger in the bag, I could feel the catheter through an orifice in the *urethra*, of near an inch in extent. I then removed the bag, cutting it away as near to the *urethra* as possible. It was about a quarter of an inch in thickness, very rough internally, and exquisitely sensible ; and though two pretty large vessels bled when it was opened, the hæmorrhage was inconsiderable when it was removed.

Half an hour after the operation, the patient said he was easier than he had ever been during his whole life. In about a month the wound was healed up, leaving a small aperture at the upper part of the *scrotum*, through which some urine is discharged when he makes water, and some comes through the *penis*; but when he places his finger upon the aperture, it passes all in the natural way through the *urethra*.

The

The stones were found to be 93 in number. The largest, which is almost round, weighed 26 grains, and the smallest a grain and an half: they all together weighed 140 grains. They all had smooth surfaces, like stones that rub against one another.

London,  
Jan. 8, 1776.



The first part of the book is devoted to a description of the various species of plants which are found in the island of Java. The author has been very particular in his descriptions, and has given many interesting particulars concerning the habits and uses of the several plants. The second part of the book contains a description of the various species of animals which are found in the island of Java. The author has been very particular in his descriptions, and has given many interesting particulars concerning the habits and uses of the several animals. The third part of the book contains a description of the various species of minerals which are found in the island of Java. The author has been very particular in his descriptions, and has given many interesting particulars concerning the habits and uses of the several minerals.



which he affirms to be preferable to every other, and especially to that by means of a caustic.

Such opposite opinions having been entertained and supported by two gentlemen of characters so justly respectable; many surgeons were at a loss to determine to which opinion a preference was due: of this number I acknowledge myself to have been one.

Altho' most practitioners will allow the general safety and efficacy of the method of cure recommended by each gentleman they may nevertheless have doubts as to the question, which ought to be preferred. For though both may, in general, be safe and effectual, yet the one may be more generally safe, or more generally effectual than the other; and also one may be a less painful and more speedy cure than the other.

This doubt a reader may be the more likely to entertain, if he reflects how  
natural

natural and how common it is for a practitioner to harbour a partiality in favour of any particular method that he may have adopted in preference to others; and if he also further considers that neither Mr. Pott nor Mr. Else, though each so strongly recommends his own method appear ever to have made a comparative trial of both.

Now the question relating to the deserved preference of either mode, can in no other way be determined than by a comparison of the two by means of repeated trials. And as my practice has furnished me with cases of this disease, which I think afford considerable assistance towards the determination of the question; I thought I could not communicate to the world the result of them, in a manner more suitable, than by affixing them to a treatise, for the express purpose of establishing the use of that kind of operation, which as I judge it to

be preferable to every other, I could wish should generally prevail.

The operation by a caustic is less painful than that by a seton. I have seen many cases in which the operation has been performed by the seton, and in all of them, immediately after the operation, the pain has been considerable in some extremely violent; whereas in the cases in which I have seen the caustic employed, I have never observed the patient to suffer any material pain: indeed, almost all the patients I have attended, upon whom the caustic has been used, have urged the slightness of pain they felt from its operation, as an argument against the probability of its effecting a cure.

With regard to the inconvenience and hazard, and the length of time taken up in the cure, so far as my observation goes, the two methods will not admit of a comparison. In the cases where I have seen the seton employed, the operation

operation has been generally followed by a fever and high inflammation. These circumstances have rendered confinement absolutely necessary, and, by their violence, sometimes have endangered the patient's life. On the contrary, in those cases where I have seen the caustic used, as they were attended with very little pain, so they were accompanied with no fever or inflammation worth notice, and of course little confinement has been necessary. If any thing like the contrary has ever happened, it has been the evident consequence of some flagrant irregularity in the patient.

In cases where the seton had been employed, I have observed the cure to have failed altogether; or if the patient for the present appeared to be cured, the disease returned, so that in either case another operation has become necessary. On the other hand, in the cases I have been witness to, or have been informed of,

where the operation has been originally performed exactly according to Mr. Else's directions, I have met with none in which this operation did not prove an effectual cure.

The first case I shall mention is recorded in the preceding work, which is not mentioned in the first and second edition. The patient was attended first by Mr. Pott, and afterwards by Mr. Else. Mr. Pott performed the operation by means of a seton, and in consequence of it, the Hydrocele appeared for a time, to have been cured; yet afterwards, notwithstanding every possible precaution had been used, the disease returned. The gentleman mortified at this disappointment, but determined, if possible, to get rid of his complaint, and having heard of the success of the operation by caustic, came to a resolution to undergo it. I was present at this operation performed by Mr. Else,  
as

as I had been at the former performed by Mr. Pott. This latter operation proved not only a much easier remedy, but also a compleat cure, and the patient remains to this day perfectly well of his complaint. Though this case strongly inclined me to give the preference to, and to employ in my future practice the caustic operation, yet I felt an unwillingness to come to such a resolution, till farther experience had strengthened my opinion of its superiority.

I have since seen a patient with a double Hydrocele; a case advantageously calculated for the purpose of deciding the question concerning the comparative merits of the two different operations; by affording an opportunity of employing in the same person, the caustic operation for the cure of the disease on one side of the scrotum, and the seton for the cure of that on the other.



In the cure of the first of these cases, a caustic was applied to one of the Hydroceles, and after the inconveniences arising from this operation had abated, a seton was applied to the other. A radical cure was obtained by both methods; with this difference, that the inflammation and pain produced by the seton was so violent, as rendered it necessary to have recourse to bleeding, fomentations, clysters, opening medicines and opium; whereas the inconvenience occasioned by the caustic was so small, that I do not recollect to have heard the patient make any complaint. After he was perfectly recovered, I put this question to him, "Suppose you were to have a return of this disease, and had resolved again to undergo an operation, to which of the two would you give the preference?" His answer was, "To the caustic, certainly, for the pain of it is a fleabite compared with what I suffered from the seton."

I have

I have seen a second case of this kind that nearly agreed with the one before-related.

I am obliged to Mr. Ford for the following.

“ John Marlow, aged twenty-seven, applied to the Westminster General Dispensary for the cure of a double Hydrocele, on the 27th of January, 1775. The following day he took a gentle purge, and on the 29th a small caustic was applied in the manner recommended by Mr. Else, to the Hydrocele of the right testicle, which was the largest of the two. The operation of the caustic was attended with little or no pain, and produced no particular appearances. The symptomatic fever readily yielded to an antiphlogistic regimen.

“ On

“ On the ninth day, the suppuration  
 “ was so mild, and the eschar had so  
 “ gradually loosened, that I determined  
 “ immediately to attempt the cure of the  
 “ other tumour by means of the seton.

“ I began the operation by puncturing  
 “ the anterior and lower part of the swell-  
 “ ing with a trocar, and as soon as the  
 “ perforator was withdrawn, and the  
 “ fluid discharged, I passed the seton ca-  
 “ nula through that of the trocar, till it  
 “ reached the upper part of the Tunica  
 “ Vaginalis; a probe armed with silk  
 “ was then introduced through the latter  
 “ canula, and brought out through the  
 “ Tunica Vaginalis and Integuments.  
 “ After the operation, the utmost precau-  
 “ tion was employed to guard against fever,  
 “ notwithstanding which, in a few days  
 “ the left side of the Scrotum became  
 “ much swelled and inflamed; violent  
 “ fever, quick pulse, great pain in the  
 “ back, and rigors ensued. These symp-  
 “ toms,

“ toms, terminating in a suppuration, the  
 “ fever gradually abated: within a fort-  
 “ night, I began to withdraw the threads,  
 “ four or five at each dressing, and on the  
 “ 1st of March the patient was dismissed to  
 “ all appearance perfectly cured. Eight  
 “ months afterwards he applied to me  
 “ again, the disease having returned on  
 “ the left side, on which the seton had  
 “ been passed.

“ He was now anxious for the ap-  
 “ plication of a caustic, a remedy he had  
 “ found so easy and expeditious in the  
 “ cure of the right Hydrocele; accord-  
 “ ingly recourse was had to it on the  
 “ 5th of November, and from the pro-  
 “ gress of the case, I had every reason to  
 “ think him radically cured, when he  
 “ was discharged on the 5th of De-  
 “ cember: but on April 16th 1776, he  
 “ was under the necessity of making fresh  
 “ application to me, the disease having  
 “ again

“ again returned on the same side. I now  
 “ determined to perform the operation by  
 “ incision through the whole length of the  
 “ tumour. The Tunica Vaginalis being  
 “ very flaccid, I removed a small portion  
 “ of it, and on examining the state of the  
 “ Testicle, found a small Hydatid on the  
 “ Epididymis, which I cut off. This  
 “ operation was followed by no symp-  
 “ toms, which did not readily yield to  
 “ common remedies; it is now five years  
 “ since the last was performed, and he has  
 “ had no further relapse.

“ *Golden Square,*

“ *Feb. 10th, 1782.*

E. F.”

\* The caustic operation is not answerable for this  
 miscarriage, because adhesions of the Tunica Vaginalis  
 from the seton operation, might make the disease very  
 different from a common Hydrocele, where no such ad-  
 hesions are supposed to exist; the man being young  
 and the Tunic but little thickened, render this circum-  
 stance the more probable. Neither the seton nor the  
 caustic has been recommended as a certain cure when  
 Hydatids are the cause. However, supposing both Hy-  
 droceles in the above case to have arisen from the same  
 cause, it is worthy of observation, that the caustic cured  
 that on the side to which it was first applied, which the  
 seton did not. G. V.

The

The success that has attended the caustic operation on those patients on whom I have applied it, has been so general, that no doubt remains with me that it deserves all the encomiums, that have, by its warmest advocates, been bestowed upon it. At this time I have a patient sixty-five years of age under my care, on whom the operation has been performed, and who has not, except during the time the caustic was performing its office, suffered any confinement, nor any pain during the whole process.

It does not appear to me that any substantial advantage is derived from the practice of mixing opium with the caustic; on the contrary, it tends to weaken the effects of the remedy; for it is a remarkable fact that caustic applied on sound skin, gives little uneasiness, although it never fails to excite so great a degree of pain when it touches parts that are inflamed.

Perhaps

Perhaps one or two observations more may not be uselefs. The first is that to an uncommonly large Hydrocele, where the Tunica Vaginalis is not much diseafed, confidering the very small inconvenience, it would not be improper to apply the cauftic on two parts, fufficiently remote from each other, fo as to affect the whole of the fac. The fecond obferuation I have to make is, to apply a larger cauftic than is generally ufed when this method is followed, where the Hydrocele is large, and the Tunic much diftempered.

From repeated trials of the good effect of the cauftic for the cure of the Hydrocele, for fome years paft I have recommended it in preference to the temporary relief obtained, by drawing off the water with the trocar, and in no one instance have I been difappointed in my expectation.

Two cafes out of the common way occurred, which I fhall take the liberty to relate.

A gentleman

A gentleman applied to me to draw off the water from a Hydrocele, which from its size and weight had become troublesome. I recommended him to have the radical cure performed, but he urged his employment as an excuse; I therefore drew off the water, and he went away. He sent to my house about an hour afterwards in a great hurry, to inform me that his swelling was returned as large as ever, and that it was encreasing in size: the Tunica Vaginalis was evidently distended with blood; there was no extravasation in the cellular membrane.

I explained to him the cause of this sudden swelling; and told him the cure would require confinement and rest, at the same time submitting it to his consideration, whether he had not better at once have the caustic applied, as that would in all probability take up no more time, and would prevent the return of the complaint. He consented to the operation. The  
next



next morning a caustic was applied, and in a short time he got perfectly well.

In Mr. Else's pamphlet he says, he has undertaken the cure of some Hydroceles, where the Tunic has been much thickened, which he should have been discouraged from, had he not from experience found that the cure in these cases had turned out as well as in others, where the sac was not materially affected.

I never knew a permanent cure obtained by letting out the water with a trocar, except in the following case, where it appeared evidently that the distempered state of the sac was the cause of this unusual event. I do not mean to insinuate that a radical cure is generally to be expected when the sac is greatly diseased, from a mere puncture with the trocar, I know the contrary to be a fact. I only insert this case to shew, that what was obtained in this instance by accident, and  
without

without danger, may, with safety, in a like case, be brought about by design by the application of caustic.

A patient with by far the largest hydrocele I ever saw applied to me for relief, it was judged necessary from the pain he was in from the enormous bulk and weight of the tumor, and from a beginning inflammation on the scrotum to relieve him immediately. The thickened, state of the sac rendered the case very obscure. Convinced it was a collection of fluid in the Tunica Vaginalis. I punctured it as usual with a trocar, and let out a large quantity of chocolate coloured fluid of a thick consistence. As soon as the bag was emptied, the irregularities of it were easily distinguished. It was in so deplorable a state of disease, that the inflammation occasioned by the wound from the trocar, ended in the destruction of the bag consequently a radical cure of the Hydrocele was effected.

This

This fortunate circumstance took place without any unusual inconvenience.

An abscess formed where the trocar entered, which burst, through this wound the tunic floughed away, and the man got perfectly well.

T H E E N D.

