about the fifth or ſixth day, and then the dreſſings are to be removed, and renewed from time to time ; once every two days, or oftener, as the quantity of matter may render it necessary. Sometimes after the operation the patient complains of pain in the ſore, and of tension and uneaſineſs in the belly. In ſuch a case, warm fomentations ſhould be applied to the abdomen, and the ſore covered with an emollient poultice, and this repeated as offen as may be necessary.

Chap. XXVII. *Of the Stone.*

Sect. I. *Of Stone in the Bladder.*

A variety of cauſes have been aſſigned as tending to the formation of calculi in the bladder of urine ; as, a decompoſition of a ſuperabundant quantity of earthy matter from the blood, on account of a ſedentary life ; certain articles of diet or drink, containing a greater quantity of earthy mat­ter than others ; a continued uſe of ſolid food without a sufficient quantity of drink ; the peculiar action of ab­sorbent veſſels ; the particular structure of the kidney ; the nature of the different excretory vessels ; the time the urine may remain in the kidney ; the habit of retaining the water in the bladder ; particles of blood getting into the kidney or bladder, and attracting the ſtony mat­ter ſo as to form a nucleus. A certain change of the vessels of the kidney forming the urine has by ſome been conſidered as a more probable cauſe than any of the former. The formation of calculus ſometimes begins in the kidneys, at other times in the bladder.

After a calculus has begun to be formed, it ſometimes ac­quires a great ſize in a few months from the firſt obvious symptoms ; but ſometimes it remains in the bladder for many years without arriving at any conſiderable ſize.

The symptoms commonly come on gradually, and bear ſome kind of proportion to the ſize and inequalities of the ſtone. One of the firſt commonly taken notice of is an uneaſy ſenſation at the point of the urethra, which for ſome time is perceptible only upon making water, or upon uſing violent or jolting exerciſe. This ſenſation gradually increaſes ; and there is along with it a frequent deſire to make water, which is commonly voided in ſmall quantities, and ſometimes only in drops. When running in a full stream, it often ſuddenly stops, though the patient is conſcious that a conſiderable quantity ſtill remains, and feels a ſtrong incli­nation to void it. If the ſtone be large, the patient has a constant dull pain about the neck of the bladder, and fre­quent deſire of going to ſtool. The urine is generally of a limpid colour ; but it is ſrequently thick, depoſiting a mu­cous ſediment, and when the diſeaſe is violent it is often tinged with blood. All theſe complaints are greatly increaſed by exerciſe, especially by riding on horſeback ; and from a long continuance of pain, the patient’s health by de­grees becomes much impaired, and unleſs effectual means are employed for removing the cause of the diſorder, death alone puts an end to his miſery.

We are rendered certain of the exiſtence of calculus when ſmall pieces of ſtone are frequently paſſed along with the urine. When this does not occur, we cannot be certain that the symptoms do not ariſe from an ulcer or tumor in the body or neck of the bladder, or from the preſſure of tu­mors in the neighbouring parts. In doubtful caſes, how­ever, we have one mark by which we can judge with cer­tainly, and that is by means of founding.

This is performed by introducing an infiniment called a *ſound* (fig. 82.), formed of ſteel finely poliſhed, and having the natural curvature of the urethra. The patient is to be laid upon a table or acroſs a bed, with his ſhoulders raised upon a pillow, to bring the ſtone to the neck of the blad­der, and his thighs a little elevated and ſeparated from each other. A ſound adapted to the ſize of the urethra is to be choſen ; and previous to the introduction it is to be laid in warm water till it be of the heat of the body, and then wiped and rubbed over with bland oil, butter, or axunge. The ſurgeon lays hold of the penis with his left hand, while with his right he introduces the ſound with its concave side towards the abdomen. He is now with his left hand to draw the penis gently forward upon the infiniment, which is to be gradually puſhed into the bladder. If any difficulty occur about the neck of the bladder, this may be obviated by introducing the finger into the anus, and raiſing the point of the inſtrument ; or the same purpoſe is more readily anſwered by depreſſing the handle of the ſound. If ſtill it does not paſs with eaſe, much force ought by no means to be uſed, left the inſtrument perforate the membranous part of the urethra.

As ſoon as the infiniment enters the bladder, if it hap­pen at once to touch the ſtone, a tremulous motion will be communicated to the fingers of the operator, and the buſiness of founding is then accompliſhed, the nature of the diſ­eaſe being now aſcertained. Great care, however, is here always necessary, as a few particles of sand, or a hardened ſtate of the bladder, have ſometimes communicated the same ſenſation. If the ſtone be not ſoon diſcovered, the inſtru­ment is to be moved in all directions ; and ſhould the ope­rator be ſtill unsuccessful, one of the fingers of the left hand is to be introduced into the rectum, ſo as to raise that part of the bladder in which a ſtone may probably be concealed. If even this attempt prove ineffectual, the body of the pa­tient is to be put into different politicos, and perhaps one of the best is depreſſing the ſhoulders and raising the pelvis. By this mean a ſtone may generally be felt, providing it is not contained in a cyst, which very rarely happens. If af­ter all theſe different attempts the ſurgeon ſhould fail in diſcovering the ſtone, the inſtrument is to be withdrawn ; and if symptoms of ſtone be ſtrongly marked, and it appear that neither scirrhus nor inflammation, which might give rise to theſe symptoms, do exiſt, a second or even a third trial is to be made on the following days.

Various lithontriptics have been recommended for dissolving the ſtone in the bladder; ſuch as lime-water, cauſtic alkali, ſoap, &c. but none of them can be conveyed in ſuch a ſtate into the bladder as to be much depended upon, as they undergo the greateſt change in the course of the circu­lation. To obviate theſe changes, it has been recommended to inject certain fluids of this claſs through the urethra into the bladder ; but this has not been attended with any mate­rial advantages, and has generally been found to do injury to the bladder. The only effectual method of removing ſtones from the bladder is by means of a chirurgical operation ; the ſuccess of which depends much upon the dexterity of the surgeon, as well as on the conſtitution of the patient.

When the conſtitution has been ſo much impaired that the patient complains greatly of ſickneſs and oppreſſion at ſtomach, with nausea and an inclination to vomit, eſpecially upon taking food ; when he has likewiſe a constant thirst, and the pulſe is as high as a hundred strokes in the minute— an operation is improper till theſe symptoms are removed. The operation is improper alſo when the patient labours under a ſevere fit of the ſtone; for then inflammation of the bladder is apt to enſue to ſuch a degree as to produce ſuppuration. By frequent attacks and continuance of theſe fits, the coats of the bladder are apt to be thickened and greatly contracted. This laſt circumstance may be known by the introduction of the sound ; for then it will stop af­-