

and siphon tube, until the lotion came away clear.

Within a week the patient was able to sleep well all night, and could retain his urine for five or six hours.

Six weeks after the operation I saw him. The wound was healed with the exception of a small granulating area about half an inch across, through which a few drops of urine still oozed occasionally at intervals of a day or two. No inflammatory redness or eczema had ever developed about the wound. The patient was able to eat and sleep well, and was quite free from pain. The urine was still alkaline, but improving under the use of benzoic acid and continued irrigation of the bladder.

On examination of the calculus it was found to consist of an irregularly shaped brittle mass, composed of granules and short spicules, and of a dirty white colour, surrounding a central nucleus of harder, whiter, and much finer grain. The entire calculus was estimated to be about the size of a large walnut, and when dried weighed about 200 grains. Chemical analysis revealed the presence of lime, ammonia, magnesia, phosphoric and oxalic acids, but the calculus was not fusible.

### FRACTURE OF THE PATELLA.

BY W. S. MUIR, M. D., TRURO.

To the general practitioner there is probably no form of disease that will bring our reputation and skill more into question than that of a bad result after a fracture. If you do not know your anatomy and remember it you need never expect to have success as a surgeon or a bone-setter. To reduce a fracture and keep it in position is simply all that is required; fracture of the patella is not an exception to this rule. Fracture of the patella is generally the result of muscular action, and hence it is almost always transverse; however, the fracture may be stellate compound or comminuted; most of the

fractures that are not transverse are due to direct violence, the most common cause of compound being a kick from a horse. In this paper it is my intention to deal with simple transverse fracture of the patella, as there seems to be no two opinions as to the procedure in compound fracture of the patella. Transverse fracture is, as I said before, generally due to muscular action, and this is quite plain if we remember the anatomical relations of the parts. To explain this I can do no better than to quote from "Moullin," "where the knee is flexed, the lower half of the patella rests upon the prominent portion of the condyles of the femur, and the upper is entirely unsupported; and the plane of the bone is almost at right angles to the direction of the quadriceps. If this muscle suddenly contracts the whole strain falls upon one spot, and the bone gives way just as when a stick is snapped across the knee." Now we have our patella fractured, what occurs next,—displacement of the fragments, and upon the amount of displacement depends our treatment. Displacement of the fragments is due to four things: *First*, to contraction of the quadriceps extensor femoris muscle; *secondly*, to contraction of the ligamentum patellæ; *thirdly*, to distention of the knee joint by blood and serum; and *lastly*, the amount of separation of the fragments is due to the amount of pre-patellar aponeurosis and fascia torn. If the fascia is not torn or very slightly torn we will have little or no displacement of the fragments and bony union the result. Delayed union, non-union and ligamentous union may in many fractures be due to constitutional or local conditions, but in no fracture do the same local conditions so uniformly interfere with the union of bone as in fracture of the patella. When the patellar fascia is not torn the diagnosis is not so easy, but not difficult. The effusion is not so great and not so rapidly absorbed as when the displacement of the fragments is greater. This is owing to the fact that the contraction of the muscle is not so continuous and is followed by a