

upper. The rigidity of the upper portion of the thorax makes necessary an immobilization of the breast wall so as to avoid the intrapulmonary cavity which otherwise results from centrifugal cicatricial atrophy.

Perforation of the Bladder by a Calculus.—LAUWERS (*Jour. de Chir. et Annales de la Soc. Belge de Chir.*, 1902, No. 6) quotes Legueu, who has aptly stated: "Perforation of the bladder may be the result of the ulceration of the bladder by a calculus." Chapplain has reported 29 cases in which the perforation was almost always in the posterior wall, and usually terminated fatally. Peritonitis usually resulted, but in women one may observe the calculus eliminated, without fatal results, through the vagina, and the result is a vesicovaginal fistula. Lauwers in reviewing the literature has found four cases in which the calculus perforated the anterior wall of the bladder, with a resulting abscess of the space of Retzius and urinary fistula of the anterior abdominal wall. The author's case was a youth, aged nineteen years, of poor physical and mental development. Examination showed a urinary fistula of the abdominal wall, situated in the median line about five or six finger-breadths above the symphysis pubis. The skin opening was the size of a fifty-centime piece. A metal catheter was introduced through the urethra, and on entering the bladder it came against a large calculus, fixed and occupying practically all of that organ. The patient stated that his disease began as an abscess in the hypogastric region which opened spontaneously and which, after prolonged suppuration, became a urinary fistula. Undoubtedly the way in which this fistula originated was by the calculus causing ulceration and eventually perforation of the anterior wall of the bladder, through which the infected urine passed and caused the prevesical abscess which opened spontaneously, and the fistula resulted. Operation being decided upon the calculus was removed by the hypogastric route. The bladder was thoroughly irrigated with a hot solution of boric acid, and then a metal catheter was introduced through the urethra into the bladder between the calculus and the anterior wall of the bladder. This catheter was held exactly in the median line by an assistant. The abdominal wall was rendered as aseptic as possible and the orifice of the fistula closed with a sterile compress. The transverse incision of Kocher was then made at the level of the superior border of the symphysis pubis. This incision was gradually deepened, and examination showed that the infection had destroyed the prevesical space, and the loose connective tissue of the space of Retzius was transformed into a hard pad of fibrous tissue through which passed the fistula. On opening the peritoneal cavity it was found to be walled off to the right by adhesions between the parietal peritoneum and the peritoneal covering of the posterior surface of the bladder. Some omentum was adherent to the top of the bladder—this was tied off and cut. The peritoneal cavity above and to the left was walled off with sterile pads, and then the greatly thickened posterior wall of the bladder was incised in the median line, and a large phosphatic calculus weighing a little more than forty grammes was removed. The wound in the bladder was closed, as also that in the peritoneum, and finally that in the skin, except for a small area through which a drain of iodoform gauze was passed. The patient made an uninterrupted recovery. Chapplain has reported four similar cases with three deaths. The author states, in conclusion, that early

surgical interference should be followed by success in the greater majority of such cases. This should consist in opening and thoroughly draining the inflammation of the space of Retzius just as soon as it appears, and if possible the calculus should be removed. If of small size it should be removed through the fistulous tract, but if the stone is large or the fistula is small, long, or tortuous the calculus should be removed by either the perineal or suprapubic routes, and of the two the perineal route is, as a rule, the method of choice.

The Primary Suture Treatment of Fractures.—VÖLCKER (*Centralblatt für Chir.*, 1902, No. 26) states that it is an assured fact that a good result in a case of fracture depends upon the replacement of the fragments, and the experience of the last few years has shown that under careful asepsis one may cut down on the fractures when there has been a bad result, break up the adhesions, freshen up the ends of the bone, and then place and maintain the fragments in good position by either wires, or screws, or some other appropriate appliance. Experience in the Heidelberg clinic has shown that the indications for the operative treatment of subcutaneous fractures are only limited. In many cases, especially those of separation or fracture of the epiphyses, is the operation a difficult one, and in every case there is the danger of infection. The cases so treated, as a rule, unite much more slowly than when not sutured, and a fistula may result. The principal indication for the use of the primary suture is in those cases of compound fracture where operative interference is a necessity. This operation is indicated in double fractures of the same limb. Experience has shown that those fractures where one is most anxious to get a good result, as in those involving a joint, the primary suture method has not proved to be a success, but future experience may prove that it will have some value in this type of cases.

THERAPEUTICS.

UNDER THE CHARGE OF

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Physiological Action of Male Fern.—DR. W. SCHAUB has been experimenting on the extract of male fern, the active ingredients of which are now considered to be fillicic acid, flavaaspidic acid, albaspidin, aspidinol, and derivatives of phloroglucin. By experiments on frogs he found that the lethal dose for fillicic and flavaaspidic acids was 2 mg., and for aspidinol and albaspidin 1 mg. for every 60 grammes of body weight of decomposition