January 23, 1892) reports that in 1889-90 he found in the blood of influenza cases fine bacilli, morphologically and biologically identical with the organisms described by Pfeiffer.

We have the following facts which strongly suggest that influenza is an infectious disease:

(1) Its appearance in epidemics; the manner in which it spreads from individual to individual.

(2) The symptoms suggestive of some toxic influence.

(3) Reduction of the general system and thereby induced susceptibility to disease.

(4) A germ has been discovered which may be the cause of the disease.

With all due respect to the exhaustive and exhausting investigations of the scientific observers, I cannot but close my paper with a quotation from Mrs. Thrale's Journal. In allusion to the rage for scientific experimentation in 1811, she writes: "Never was Nature so put to the rack, and never, of course, was she made to tell so many lies."

May not this be as true now as it was eighty years ago?

A CASE OF SACCULATED BLADDER, WITH AUTOPSY.

BY A. T. CABOT, A.M., M.D.

THE following case of sacculated bladder presented certain points of practical interest. I will first report the clinical part of the case, and then will describe the pathological condition.

William H., consulted me first in November, 1889. He was then fifty-seven years of age, and had suffered with symptoms of stone for three or four years. As far as could be determined, this stone originated in the bladder, as he had never suffered from renal colic. In the middle of November I removed, by litholapaxy, a stone weighing 116 grains, and composed of uric acid and urates. He made a good recovery from this operation. The bladder was washed out with a litholapaxy pump on two subsequent occasions, the first time a small quantity of sand and gravel coming away, and the last time the washing being perfectly clear. He was not seen again until March, 1891.

At that time he again applied to me, and reported that, though very much more comfortable after the last operation, he was not entirely relieved of his symptoms, some frequency of passing water and slight pain, referred to the penis, continuing. He had used a catheter during this time every night, drawing each time from two to three ounces of residual urine. He had occasionally passed a little gravel. I sounded him without detecting a stone, and advised an ether examination.

This was made on the 18th of March, 1891. The bladder felt roughened to the sound, but no stone could be touched. For further exploration, I made a perineal incision, and the finger, introduced into the bladder, touched a little rough surface of stone rather high up on the posterior wall, where it could be barely reached with the aid of the hand above the pubes, pressing the bladder downward. It was made out that this bit of stone was a projecting portion of a calculus which was enclosed in a pocket, and it being impossible to dislodge it from this pocket by any manipulation of the finger, a suprapubic incision was made

over the point of a sound, introduced through the perineal wound. Through this opening above, the stone could readily be reached. It was found to be about the size of an English walnut, and to be contained in a pocket, the neck of which was not larger than a small pencil, and attached to this was a little, roughened bit of bone, projecting into the bladder cavity. The neck of the sac was gradually enlarged so as to admit a pair of forceps, and after many attempts to withdraw the stone, it was finally broken by the forceps and removed piecemeal. It was difficult to remove the last fragments, but with a scoop and irrigation this was apparently accomplished. The bladder cavity now seemed to be free.

He had a slight chill the following day, with a temperature up to 102°. From this time on he did pretty well until the 6th of April; but at that time the urine still contained an abundance of pus, and it being necessary to readjust the tubes, an examination was made under ether, and the bladder was searched without anything being found. The opening into the sac had, at this time, contracted so that it could with difficulty be found. The temperature again rose to 102° after this operation, but two days later came back to the normal point. The urine, which had hitherto been abundant, began soon after this to diminish in quantity. It contained a little albumen, but no more than the pus would account for. No casts were ever detected.

This represents the bladder laid open by a cut through its anterior wall and through the roof of the prostatic urethra. The ureters are then laid open by cuts at right angles to the first cut. On each side a diverticulum was cut through by the incision that opened the ureter. *a, a'* represent the two halves of the large diverticulum on the left side, from which the stone had been removed; and *s, s'* show the two halves of the other pocket, with a stone still in it. The little openings into other diverticula may be seen on the posterior bladder wall. The whole specimen is much shrunken by alcohol. The granular, ulcerated condition of the right ureter is indicated. The left ureter is smooth, but also somewhat dilated. At *c* is seen the prostatic urethra.

From this time on, in spite of all efforts to assist and supplement the action of the kidneys, he gradually failed, with a progressively diminishing amount of urine; and about six weeks after the last examination he died.

At the autopsy nothing of especial importance was found, except in the urinary organs. The bladder

was much thickened and inflamed, the mucous membrane being highly congested and eroded in places. The wall of the bladder was not much trabeculated. The ureters on both sides were somewhat dilated, and were slit up with the scissors directly through to the bladder. These incisions passed directly through two pockets arranged symmetrically, one associated with each ureter, lying a little above and outside of it. One of these pockets was the one from which the stone had been previously removed. It still contained a little fragment of stone. On the other side the pocket was very much more narrow, opening into the bladder by a very small opening, and this contained in the upper part a little calculus about the size of a kidney bean. This smaller pocket lay rather closer to the ureter with which it was associated, than did the pocket on the other side. A careful search of the posterior walls of the bladder revealed the existence of a number more pockets similar to the last one found, — that is, having very small communications with the bladder. A careful search among these failed to show any other containing a stone.

The right ureter, which was that one associated with the smaller pocket, which lay closer to it than was the case on the other side, was considerably distended with thick, purulent material, and the pelvis of the kidney on that side was slightly dilated and filled with the same sort of grumous material. This right kidney was somewhat shrunken, in a state of interstitial nephritis, with which was associated a pyelo-nephritis. On the other side the ureter was more nearly normal, though somewhat dilated. That kidney, the left, was in a state of moderate pyelo-nephritis.

The condition, then, which led to the fatal result was an interstitial nephritis, with a pyelo-nephritis superadded to it. The pyelitis was no doubt secondary, and was unquestionably aggravated by the obstruction to the ureters due to the pressure upon them of the sacculated stones.

The symmetrical disposition of the sacculi, and the thickness of their walls led me to think that there might be some congenital cause for them. I therefore had the walls of these pockets carefully examined under the microscope, and found that the muscular coat of the bladder ran a considerable way up on the pockets and ceased towards the apex, — the outermost part of the pockets being simply composed of the mucous membrane surrounded by fibrous tissue.

In regard to vesical diverticula, Orth says they are situated preferably on the sides and base of the bladder, and also on the posterior wall. They are either congenital or acquired. In the congenital cases, — also in the acquired cases which are brought about by the pressure of stones, — we find all the coats of the bladder in their walls, even the muscular layer. On the contrary, in the greater number of the acquired diverticula, the condition is a hernia of the mucous membrane between enlarged bands of muscular tissue. Only when they are small can a part of the muscular coat still be shown in their wall.

These herniæ of the mucosa are often very numerous in hypertrophied bladders, and may be symmetrically arranged in accordance with the arrangement of the muscular bundles. They are at first quite small and flat, but become more rounded and larger, until they reach the size of a walnut, an egg, or a child's head. The opening between the muscular fibres, at first angular, becomes more rounded with the increase of

size, but may be very small, even when the diverticulum is large.

In my case the way in which the muscular coat ran part of the way up on the walls of the diverticula, seemed to show that in part, at least, they depended upon a congenital condition for their production. The openings in all of them were round and very small, instead of irregular, as you would expect if the mucous membrane had simply pushed out between the muscular bundles. The muscular tissue surrounding their necks was more abundant and ran much further up on their walls, than would be the case if it simply represented the muscular bundles which had been pushed aside as the mucous membrane forced out between them. So that I am inclined to regard this as a case of congenitally diverticulated bladder, in which perhaps the mechanical effects of the pressure of urine had some influence in enlarging the pouches. The fact that there were stones in but two of them, and that in one case the stone was very small, shows that they were not pockets formed by the pressure of stones.

This case illustrated very well the importance of making a digital exploration of the bladder in cases of uncertain diagnosis, where persistent symptoms continue, and also showed how much more easily such conditions can be reached and treated by supra-pubic incision than through the perineum.

I think there can be but little doubt that it is better practice to crush a stone *in situ*, when it is so thoroughly encapsulated as in this case, rather than to try to free it by incision. For a considerable incision in the neck of the sac would have exposed the patient to the danger of urine infiltration and perivesical abscess.

Finally, the possibility of the *symmetrical* arrangement of pockets should be borne in mind when operating on these cases, and a knowledge of this point may lead to the discovery of pouches that would otherwise be overlooked.

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ACONITE POISONING.

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J. A., private, Company D, Twenty-first Infantry, a prisoner in the post guard-house, recovering from a debauch, at about 4 p. m. on July 3d, took, as nearly as can be ascertained, two drachms of tincture of aconite. I was summoned as soon as the fact was known, and reached him perhaps an hour after the ingestion of the poison, the nature of which was at once determined by the tingling of the tongue produced by a remaining drop. He was recumbent, tossing his limbs about, excited, complaining of numbness and cramps in the arms and hands, but making no mention of any odd sensations about the lips or tongue until after recovery; with radial pulse imperceptible, carotid 119, respirations 19 (normal in character at first, but afterwards becoming shallow), pupils slightly dilated but responsive to light, nose pinched, extremities cold, face bedewed with cold sweat, at times lapsing into unconsciousness. It required but little effort to hold him when I passed the stomach-tube, but the muscles of the jaw seemed to be endowed with unusual power, since the gag could not be rotated when the teeth were