seized with pain in the left lumbar region; it was unaccompanied by any nausea, or alimentary or urinary disorder, although he admitted having a slight headache. There was some tenderness over the left kidney, but none over the left ureter or bladder.

While in hospital the patient had slight pyrexia in the evenings of the first three days—98.8°, 99°, and 99.2°—and again on the seventh, eighth, and ninth days of 100.8°, 99.2°, and 98.8°; the rise in temperature was associated each time with an exacerbation of pain. The urine was alkaline and contained a trace of albumin and a heavy deposit of pus cells, with a few red blood corpuscles and epithelial cells; but no casts or crystals or other abnormal constituents, nor tubercle bacilli were found.

An organism giving the bacteriological characters of Morgan's No. 1 bacillus was grown in pure culture. This organism was again isolated on March 25th, April 15th, and April 18th, each time in pure culture. A blood culture made on April 8th remained sterile. The results of agglutination tests of the patient's serum against the bacillus isolated proved interesting. Using Professor Dreyer's macroscopic technique, the following results were obtained: On April 2nd, agglutination in a dilution of 1 in 125 in an hour; on April 20th, agglutination in a dilution of 1 in 500 in an hour. In each case a normal human serum was put up as a control. The patient had the first three doses of an autogenous vaccine in the interval between the two agglutination tests.

CASE II.

The second case occurred in a British subject who was in the Khartoum Civil Hospital in February, 1926. He had a typical attack of pyelitis with pyrexia which lasted about three weeks. The urine was alkaline and contained a heavy deposit of pus cells and many coliform bacilli. I isolated Morgan's No. 1 bacillus from the urine, but in this case there were a few *B. coli* colonies present also.

The organism in each case gave the following cultural characteristics, etc.: On agar slopes a thin yellowish-white film was formed, having a sticky feel when touched with the platinum wire, while small colonies closely resembling *B. dysenteriae* were grown on MacConkey's medium. In broth a diffuse turbidity was produced. The bacillus was motile and Gram-negative.

The usual sugar reactions were tested. The result was alkaline with litmus milk; acid and gas with glucose and with galactose; acid on the fourth day with glycerol, and slight with indol. In tests with all the other substances there was no reaction.

Conclusions.

While the findings are very definite in Case I, they are more doubtful in Case II.

Both patients are receiving vaccine treatment, an autogenous vaccine having been prepared in each case.

EXTENSIVE DIVERTICULOSIS WITHOUT SYMPTOMS.

BY

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THE following case is notable as indicating the existence of extensive diverticulosis for at least fourteen years without giving rise to symptoms. Other pathological conditions were also present within the abdomen, including congenital abnormality of the small intestine.

A married woman, aged 51, who had borne six children and had a tendency to obesity, was admitted to the David Lewis Northern Hospital, Liverpool, on May 3rd, 1926, under Mr. G. C. E. Simpson. She complained of "wind" since an operation in 1912, and stated that for the last year she had suffered from occasional attacks of pain in the epigastrium, occasionally going through to the right shoulder-blade; they had no relation to food, and occurred irregularly either by night or by day, were sometimes accompanied by jaundice, and invariably by vomiting. The vomit was frothy, yellowish, and tasted sour. She said she had had typhoid fever when 6 years of age. On February 21st, 1912, she was operated on for gall stones, and five months later a hydatid cyst of the left hepatic lobe was removed. Both operations were performed by Mr. Murray at this institution. She brought to hospital with her a copy, which she herself had made at the time, of her old case-sheets, and also the two summary sheets dealing with the operations. On the back of the first summary sheet was found a pencil drawing of a portion of large intestine showing diverticulosis of the mesenteric attachment. This, she said, was drawn by Mr. Murray in the out-patient department to illustrate her condition. Mr. Simpson, who was then assistant honorary surgeon, remembers the occasion well.

Condition on Admission.—She was slightly jaundiced, the tongue was coated, and the breath foul. She was not constipated. Nothing abnormal could be discovered in the abdomen, and Murphy's sign was not elicited. Faeces and urine contained no abnormal constituents. A fractional test meal showed the presence of blood and bile in the stomach, with 0.03 free hydrochloric acid and 0.07 active.

Operation.

Mr. G. C. E. Simpson opened the abdomen on May 10th, when slight hepatoptosis became evident. The gall bladder, which was adherent to omentum, was full of small faceted stones. The pancreas and the appendix were in a state of marked chronic inflammation. From the caecum to the beginning of the rectum were hundreds of diverticula containing beads of faeces, and varying in size from that of a pea to that of a cherry. They were of the acquired type¹—that is to say, they were hernial protrusions of mucosa. The vast majority were in the concavity of the mesenteric attachment and the appendices, but there were also numerous small protrusions through the taeniae and peritoneum-covered muscular wall. The contents of all those in which it was attempted could be emptied easily into the bowel. There was no evidence of inflammatory reaction round these diverticula, and Mr. Simpson was able to say, having seen the case in 1912, that the only notable progress was an increase in size.

Another interesting condition present was an arrested rotation of the small intestine. The duodenum, with the superior mesenteric artery on its inner side, turned back on the head of the pancreas in the shape of a double S. The duodeno-jejunal flexure was at McBurney's point, the mesentery running thence upwards to the left. The mesenterised caecum, which was entered by the ileum from the right, was slightly left of the mid-line in the upper umbilical region. This arrest had apparently occurred at the eleventh week after the caecum had entered the abdomen through the narrowing umbilical orifice.² The gall bladder and the appendix were removed; the colon, with its diverticula, being symptomless, were left.

The patient made an uneventful recovery, leaving hospital in very satisfactory health.

I am indebted to Mr. G. C. E. Simpson for permission to publish this case.

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ULTRA-VIOLET LIGHT FROM OPEN ARC WITH TITANIUM ELECTRODES.

BY

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It is now established that ultra-violet light has important biological effects. Many diseased conditions have been treated with it and much enthusiasm has been evoked over its possible therapeutic value. It has been pointed out that if a list of the diseases said to have been benefited was made it would probably begin with acne and go through the whole official nomenclature to zona, including house-maid's knee and the minor psychoses. But the fact that its value is in many cases overstated and its mode of action is at present rather mysterious is no reason why its effects should not be thoroughly explored.

GENERAL.

The rather widespread impression that these rays are dangerous is illusory. They cause nothing comparable to the injuries that may follow the imprudent use of x rays. Their penetration is very slight and confined at the most to the lower layers of the epidermis. Even at this slight depth we begin to recognize two kinds of action, depending upon the degree of exposure and the precise wave-length of the light employed. It is at present difficult in medical practice to restrict the wave-length to any narrow degree of the ultra-violet spectrum. Where this has been done experimentally we have evidence that rays beyond the visible spectrum down to 290 $\mu\mu$, which have been spoken of as "biologic," are of such a nature as to stimulate biological processes, particularly as the lower limit is approached, whilst beyond this the still shorter rays, called "abiotic," exhibit a lethal action, though on account of their restricted penetration this is of little importance unless the exposure is prolonged. Even these shorter rays, if used with brief exposures, may perhaps act biologically. Taking the germicidal effect as a test, Browning and Russ got a maximum effect between 280 and