I did not refer to the observation of Fraenkel and Garipuy of which Dr. Marple speaks, but I am glad that he has called attention to so important a matter as intraocular hemorrhage in connection with blood pressure. Permit me to digress long enough to call your attention to a matter of equal importance, the association of high blood pressure (as I have repeatedly observed) with delayed healing of cataract wounds, caused in my judgment, by the plus tension so often associated with it.

I wish to call Dr. Marple's and Dr. Jackson's attention to a few figures on page 165, showing 79.5 per cent. of these four hundred men with blood pressure between 130 and 180 mm. Hg; and the largest number of cataracts were found between these limits of pressure. For example, seventy-nine men between 65 and 70 years of age had thirty-three cataracts, 41.8 per cent, with pressure under 160; sixty-one men between the same ages had thirty-three cataracts, or 54.1 per cent., with pressure above 160 mm. Hg. In other words sixty-one men with pathologic pressure had the same number of cataracts that were found in seventy-nine men with normal pressure, which shows an increase of 29.4 per cent. in the pathologic over the normal class. These statistics also show that two hundred men with an average blood pressure of 139.7 mm. Hg, had ninety-three cataracts, while two hundred other men with an average blood pressure of 181 mm. Hg had one hundred and ten cataracts, showing that an increase in blood pressure of 41.4 mm. Hg was accompanied by a corresponding increase of seventeen cataracts. Seventeen being 18.5 per cent. of ninety-three, the increase of cataract in those having pathologic over those having normal blood pressure is therefore 18.3 per cent., as already stated. This percentage is too high to be a mere coincidence, and although I do not pretend to say what its total significance is, I think that it shows that pathologic blood pressure or the condition back of it has considerable influence in the causation of cataract. It is hardly fair to interpret the statistics by decades and half decades because of the few men in each. The value of the statistics is in the correct handling of the figures.

It is not intended to imply anywhere in this paper, that arterial sclerosis or high blood pressure are primary conditions in the causation of cataract. It is too soon to make any such statement. My only purpose has been to present statistics showing their association. The causes and pathologic significance of arteriosclerosis and high blood pressure and even lens opacity itself must still be regarded as *sub judice*.

Clinical Notes

PERFORATING GASTRIC ULCER,

WITH REMARKS ON DIAGNOSIS AND TREATMENT.

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The following case will furnish the text for some observations which seem appropriate in the light of this experience:

History.—E. L. C., 62 years old, had had attacks of "indigestion" for many years. He sought no medical advice for these attacks of stomach trouble except on one occasion in the fall of last year, when he was put on a liquid diet for about ten days; then, the symptoms subsiding, all restrictions were removed and he felt comfortable until about May 16, 1908. He was visiting in Chicago at this time, and attributed the return of his gastric distress to indulgence in Chinese restaurant meals. He described the trouble as a heartburn, accompanied by belching and some distress in the epigastrium during the height of digestion. He never vomited in any of the attacks, nor did he ever have any pain shortly after eating. There was no history of melena. He had no tender spots in the epigastrium or in the back. He did not consult anyone about his last attack until he was taken suddenly with a very severe pain in the right hypochondrium on the night of May 19, 1908. This pain was paroxysmal and radiated to the right shoulder. He vomited several times during the attack. The

temperature and pulse were normal. He was not collapsed at the time of my visit, which was about half an hour after the onset. From the history of the indigestion and the character, location and distribution of the pain, a diagnosis of probable gallstone colic was made and one-half grain of morphia given hypodermically, after which the patient became tolerably comfortable and rested so until morning, when examination showed some tenderness in the right hypochondriac region and over the appendix. Rigidity of the right rectus and increased tenderness over the appendix were added as the day wore on, until the question arose whether it was not a case of gangrenous appendicitis from the start. The liver dulness was not obliterated, but fever and increase in the pulse rate appeared, and the patient was taken to the Lutheran Hospital for exploratory laparotomy just twenty-four hours after the pain began.

Operation.—The incision was made in the right rectus opposite the umbilicus, so that it might conveniently be extended up or down as seemed necessary. The appendix was found firmly adherent and some free pus seen in the abdominal cavity. This led to the opinion that the appendix was probably entirely at fault, and it was removed; but not until the appendix was entirely delivered was it seen that no perforation existed in it and that it was not accountable for the free pus. The reason that it could not be examined before removal was that on account of the adhesions the base had first to be ligated and severed from the cecum, and then the adhesions and mesentery tied and separated down to the tip. When the tip came into view there was to be found no evidence of acute trouble; so the incision was enlarged upward and the gall bladder palpated without result. Then the pylorus was examined and some plastic lymph found on its anterior surface, while the intestine in the neighborhood showed evidences of inflammation. While the examination was in progress, some greenish grumous fluid was seen to escape from a small opening, about the size of a lead pencil, located in an indurated area two inches in diameter on the anterior surface near the gastrohepatic omentum. Several Lambert stitches were taken with great difficulty on account of the inaccessibility of the ulcer, and the opening was closed. The pylorus seemed to have been narrowed considerably by the stitches, and the question of gastroenterostomy came up, but was decided negatively on account of the length of time the patient had already been on the table and the necessity for operating in the presence of an established peritonitis. Then, again, it was evident that the pylorus still had an opening, and it was thought best to wait for recovery and do a gastroenterostomy later if required.

Subsequent Course.—This was uneventful. The patient did not vomit again. Nothing was given by the mouth for five days, but he had three pints of water by the rectum each twenty-four hours, which was retained. Then water was cautiously given by the mouth, gradually increasing in quantity until the rectal injections were dispensed with and a liquid diet slowly reached. The patient had no return of his indigestion or any stomach distress whatever. Nine weeks after the operation he is on a rather liberal diet, including fish, white meats, cereals, eggs and milk, without any symptoms of gastric retention or pyloric obstruction.

The points in the case to which I desire to draw particular attention are the impossibility of differentiating the primary attack of pain from that of biliary colic, and the close resemblance of the symptoms presented twelve hours later to those of appendicitis. If this resemblance had not been present there might have been time for a gastroenterostomy had it been thought advisable to make it, but the finding of an adherent appendix led to its removal, which proved difficult and time-consuming on account of the old adhesions.

At the present time it seems that the course pursued in regard to the gastroenterostomy was wisest, for the patient has no pyloric obstruction; and an additional operation would have decreased his chances materially and unnecessarily.

During the colic the history of stomach trouble, taken in connection with the sudden onset of paroxysmal pain radiating to the scapula and shoulder and the persistence of liver dulness, made a perfect picture of biliary colic.

It seems to me impossible in a similar case to be sure of one's diagnosis before operation, but safety appears to lie in the recognition of the necessity for immediate laparotomy, which fortunately can be early determined, the exact anatomic diagnosis being completed with the abdomen opened.

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A CASE OF TYPHOID SPINE.*

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History.—G. L., aged 56, had on July 14, 1907, what he terms a chill. The following week he did not feel very well, but continued his work, that of a bank teller. On July 24 he was taken to the nearest hospital suffering from a well-defined attack of typhoid fever. Cold sponge baths were given whenever the temperature rose above 102. These were continued for three weeks; then pneumonia developed. The lower lobes of both lungs were involved. Resolution followed in due course and the patient returned to his home three weeks later, having remained in the hospital for six weeks. His general weakness and disability were not more marked at this time than would have been expected. Three weeks after returning home he was able to get about fairly well, but always complained of stiffness in his back. Walking up or down stairs caused pain in the back, which was somewhat general, but more especially referable to the lower left dorsal region. An unsuccessful attempt was made to resume business. The pain gradually grew more severe. Massage and active and passive motion were advised, from which soon resulted an accentuation of the symptoms. Early in November jaundice developed. This quickly responded to treatment and within a week had entirely disappeared. The patient has had no second attack. In December steam baths were given, the after-effect of which was to depress and weaken the patient. The acute exacerbations of pain were now so severe at times that the administration of morphin was necessary. The actual cautery was used with slight temporary relief. Adhesive-plaster strapping was followed with better results, though administration of morphin had still to be resorted to. On Jan. 9, 1908, the case was referred to me by Dr. A. H. Moore of New Rochelle. At this time the symptoms of pain and distress were much accentuated. The slightest movement in bed caused a sharp shooting pain in the back, radiating toward the abdomen. Even the raising of an arm from the bed would cause a painful spasm. The patient also complained of marked tenderness over the costosternal junction of the sixth rib on the right side. Though a well-nourished man and of a naturally phlegmatic temperament, he was extremely nervous, and at times inclined to be hysterical. This was most noticeable when recounting the history of his illness, and especially when describing the pain. He wore a haggard, anxious look, which was not relieved between the painful spasms, but was exaggerated at these times.

Examination.—This showed a small but distinctly marked kyphosis of the seventh dorsal spine. To the left of this, of the size of the palm of the hand, was a hypersensitive area which was exceedingly tender on pressure. On either side of the spinous processes, in the dorsal region, there was marked hypersensitiveness and some swelling; a right dorsal curvature was also present. An enlargement of the sixth rib over the area complained of in front was distinctly palpable. This was quite painful on pressure. Breathing was painful. Knee-

jerk were exaggerated. Temperature was but half a degree above normal and pulse was 110.

Treatment.—It was not advisable to apply a plaster of-Paris jacket because of the severity of the pain the application of the jacket would involve. A plaster-of-Paris bed was made. This included the thighs and extended upward, including the neck and shoulders. It was retained in place by a plaster-of-Paris bandage below and a muslin bandage above over the thorax. This bed was applied on January 11, from which time the patient began to improve. No morphin was afterward administered, and though the patient was very nervous for the following week, there were none of the severe attacks of pain previously noted. On January 28 the patient was allowed to sit up for half an hour. No ill effects followed and he was up every day after this date. After getting up he complained of stiffness in the knees. This was at first quite a distressing symptom, as was also stiffness in the shoulder joints. The latter disappeared; the former was still a subject of complaint at times to a slight extent, especially after the patient had remained seated for some time. On Feb. 6, 1908, the plaster-of-Paris bed was replaced by a plaster-of-Paris spinal brace. This was made six inches wide, extending from the spine of the first dorsal vertebra to the tip of the coccyx, and having a pelvic band of steel and an apron and shoulder straps such as used with the Taylor brace. This was worn day and night for the succeeding two months, being removed but once a day to allow the back to be sponged and powdered. An unsuccessful attempt was made to isolate the typhoid bacillus from the urine and feces, though it was not expected that we should find any at this time.

Later History.—On March 20 the patient returned to his place of business, remaining for one hour. From March 27 he was actively engaged in business. He had no pain whatever, but walked with a slight scoliosis, which he said was noticeable before his present illness, the right shoulder being higher than the left, as he expressed it. There was still some slight tenderness anteriorly over the sixth costosternal articulation. The kyphosis was still perceptible, but much less prominent and distinct. The knee-jerks were slightly accentuated. The general condition was much better than it was previous to the onset of the fever in July. The plaster-of-Paris spinal brace was still being worn during the day.

This case is of particular interest because of the age of the patient and of the severity of his symptoms, in addition to the presence of a kyphosis denoting bone change. It also accentuates the importance of perfect immobilization, as has been so well emphasized by earlier writers.

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APPARATUS FOR CONTINUOUS SALINE ENEMAS IN PERITONITIS.

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Two of the chief factors in reducing the mortality after operations for general peritonitis have been the use of the Fowler position and the continuous rectal administration of salt solution as suggested by Dr. J. B. Murphy. One of the most difficult problems in connection with the use of salt solution per rectum has been to maintain it at a constant temperature. The usual custom is to surround a glass percolator with hot-water bags, which latter must be refilled frequently. I have devised a simple and inexpensive apparatus by which a constant temperature can be maintained either by the use of electricity or of an alcohol lamp or small Bunsen burner, and this has been employed in a number of cases at the Michael Reese Hospital.

It has seemed desirable to construct the apparatus so that either electricity or some other form of heat (gas or alcohol lamp) could be employed. It is designed on

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