here and there. I should sum up my estimate of diagnostic results somewhat as follows:

(1) The sound renders it possible for us to determine accurately the length of time required for digestion;

(2) It also enables us to determine with far greater certainty than was formerly possible whether the size and seat of the stomach have undergone any notable pathological alteration;

(3) It is contributing toward the classification on a pathological basis of the conditions hitherto embraced under the vague clinical term "dyspepsia";

(4) The chemical study of the gastric contents when carefully and persistently carried out, is an aid in the diagnosis of some cases, but its value is still quite subordinate to that of the rational signs;

(5) Finally, the chemical methods themselves are so time-consuming, they must be so frequently repeated, and their results are so uncertain, that in their present form their application presents almost insuperable difficulties; except to the hospital physician, who must also have a larger staff of trained assistants than is usual in American hospitals.

NEPHRORRHAPHY.¹

BY W. W. KEEN, M.D., PHILADELPHIA, PA.

MOBILITY of the kidney exists in two varieties: first, movable kidney; and, second, floating kidney.

A floating kidney has a mesonephron, and lies within the peritoneal cavity.

A movable kidney lies posterior to the peritoneum, but may have quite as large a range of motion clinically as a floating kidney. It is distinguished anatomically, but it cannot be distinguished clinically. Unfortunately, movable kidney is generally overlooked, though quite frequent. For example, Skorszewsky found it to exist in 32 women out of 1,032 cases, and in three men out of 392.

Drummond has recently reported 30 cases observed by himself and Oser, of Vienna, and calculates that ten per cent. of mothers have this affection. It is more frequent in women than in men, in the proportion of seven to one (Neumann, Landau), and is more than ten times as frequent upon the right side as upon the left.

Causes.—Floating kidney is always congenital. Neumann and Morris both cite undoubted instances. Movable kidney is commonly acquired as a result of a fall, blow, or any other traumatism, and, not uncommonly, from either frequent pregnancies, or loss of fat.

Symptoms.—The diversity of opinion as to the desirability of operation varies with the appreciation of the symptoms. Thus, Landau thinks that operation is never justifiable; whereas Kepler advises immediate nephrectomy. Tait has operated upon but three cases, and he declares that he "will never have anything to do with fixation of the kidney."

But the discomforts arising from movable kidney are many and decided, such as bearing down or dragging pain in the loins; gastric disturbances; foetid breath; vomiting; and, not uncommonly, marked cardiac symptoms. In women, the disturbance of

menstruation and various pains in the generative organs are very common. Besides discomfort, however, there is serious danger to life, if the affection is not remedied.

Berry records a case of death six weeks after the diagnosis was made, and attributes it to rupture of an abscess of the kidney, or of the urethra.

Neumann records four cases of intermittent hydronephrosis out of 21 observed by him, and in five, albumen was present.

Kohler, Thornton and others also record cases of hydronephrosis.

A recent case of nephrectomy done by the author was necessitated by hydronephrosis following movable kidney.

The diagnosis is in general fairly clear. A movable tumor in the flank, of the size and shape of a kidney, which can be displaced to the iliac fossa, pushed back into the loin, and displaced to or beyond the middle line, is indicative of the condition. A gall-bladder has in three instances been mistaken for a movable kidney. Percussion of the loin assists, but is less reliable than resistance to bi-manual examination. Sometimes the hilum can be made out, and the pulsating renal artery felt. The urine is generally normal, though it may contain albumen.

Treatment.—Treatment may be three-fold:

(1) By pad and bandage. This should always be tried first.

(2) Nephrectomy. This is only occasionally justifiable. Its mortality is from twenty to thirty per cent. The mortality of nephrorrhaphy is only about two per cent.

(3) Nephrorrhaphy. This was introduced into surgery by Hahn, in 1881. The incision is made obliquely between the last rib and the crest of the ilium, beginning over the outer border of the quadratus, the perinephric fat being cut or torn through. Either the kidney or the liver may be seen at once. The kidney may be so far away from its normal position that it will be necessary for an assistant to push it back. Mobility will not distinguish between the kidney and the liver, for a movable kidney will be as much affected by respiration as the liver.

One case was given by the author in which unintentionally the peritoneum was opened, as has been done by Hahn and others, in searching for the kidney. In order to distinguish between the two organs, the author advises that the upper border be sought for by the finger as soon as the fat is torn through. If it be the kidney, the finger will readily reach its upper border, and be in contact with it behind the peritoneum. But if it be the liver, the upper border would be within the peritoneum and beyond reach.

In a second case, the author had difficulty in getting hold of the kidney until it was harpooned by a fenaculum and drawn up into the opening and then seized with a volsella.

Traction with a volsella, even to such an extent as to tear through the kidney substance, has not produced any ill effects.

Four methods of fixation have been recommended:

(1) By passing the stitches through the fatty envelope of the kidney. This method is regarded as insufficient.

(2) By stitching through the fibrous capsule of the kidney.

(3) By passing the stitches through the parenchyma

¹ Abstract of paper read at the meeting of the American Surgical Association, Washington, Thursday, May 22, 1890.

of the kidney. Only occasionally has any blood been found in the urine.

(4) Splitting and stripping back the capsule to obtain cicatricial union between the raw kidney substance directly to the surrounding tissues. The stitches are passed through the parenchyma where still covered by the fibrous capsule. Only four cases have been operated upon by this method, a number as yet insufficient to form a judgment as to its merits.

The third method has given the author very good results. The kidney seems to tolerate the presence of sutures for a long time without trouble; but, whether in the degenerative changes of old age, or when the general health fails, they may become a source of trouble, time has not yet shown. The author condemns the stitching of the kidney to the ribs on account of its danger. Both extremities of the kidney should be secured by sutures, with four additional sutures, two passing through the anterior and posterior lips of the wound respectively, and penetrating the kidney substance. The material that the author selects is fine silk, and he advocates that the stitches should be left in place. He recommends that the external wound be not sutured, as it closes quickly.

In the after-treatment he lays stress on keeping the patient in bed for not less than a month, and when she begins to go about, that a snug-fitting elastic bandage be worn.

The paper is accompanied with a table of all the recorded cases, 128 in number.

Four deaths have occurred. One not due to the operation, but to ileus. A second was fatal from inflammation of the pleura, due to stitching the kidney to the twelfth rib. In the third, death was caused by passing the stitches through an old embolic infarct, resulting in septicæmia; and a fourth, from later supuration, probably the result of the operation.

The author has done four cases, the first has been published in the "Transactions of the Philadelphia County Medical Society," Vol. X, 1889. For over a year the patient has continued in excellent health.

The second case, Mrs. M., was operated upon October 16, 1889. She had suffered from great pain, gastric disturbances, dragging in the loin, and was rendered almost a permanent invalid. From childhood she had "had a queer feeling, as if she was not all right in the right loin"; and two years prior to the operation she had a severe fall off a step-ladder.

At the operation the kidney slipped from the grasp of an assistant, who was pushing it back in place. After tearing through the perinephric fat, what was thought to be the kidney, pushed into place by the assistant, proved to be the liver, and it was found that the peritoneum had been opened. The kidney could just be touched by the finger, and lay in the right iliac fossa. Harpooning it with a tenaculum, it was drawn into place and fastened by six silk sutures. It so completely closed the small opening in the perineum that it was not deemed necessary to close it by sutures. No ill effects followed except considerable pain in the right hip and groin, presumably from bruising of the ileo-hypogastric nerve.

She made an excellent recovery from the operation, and is, at present, in excellent health so far as the kidney is concerned, but is still suffering from some neurotic disturbances. Her highest temperature was only a little above 100°, and fell to the normal on the fourth day. While recovering from nephrorrhaphy,

Alexander's operation was done in order to fix a displaced and retroverted uterus.

The third case, Miss T., distinctly traced her mobile kidney to reaching upward for a bale of goods. She "felt something give way" in the right loin, and asserts that she heard a "distinct snap." For three years she had been an invalid. On turning to the left side the kidney fell with a thud to the left of the middle line. The hilum could not be distinctly made out, but the pulsation of the renal artery was felt. The operation was done February 18, 1890, and was followed by an uninterrupted recovery, the highest temperature being 99.8°.

The fourth case was Dr. G., a physician in active practice. For two years he had been obliged to give up his work, as the slightest exertion caused the most intense pain in the right kidney. The urine showed albumen and tube casts. The pain was so severe that he often required a grain of morphia hypodermatically at a time. During the attacks of pain he has often passed blood. The right kidney was exceedingly painful and tender.

The patient and his father, both physicians, as well as Dr. O. H. Allis, believed that calculus in the kidney was probably the cause of the trouble. An exploratory operation was done March 6, 1890, with the intention of removing the stone, if there were any, or of doing nephrectomy, if the kidney were disorganized. The moment the kidney was discovered it was seen to be exceedingly movable; respiration moved it at least two inches. Both to touch and sight it was normal. No evidence of stone or pus could be felt from the exterior. The kidney was then incised into the pelvis, which cavity was thoroughly explored by the finger. Neither pus nor stone was discovered. The bleeding was free, but not alarming. The wound was packed with iodoform gauze, and healed by granulation. The temperature rose as high as 103°, but fell to normal on the twelfth day. He was exceedingly weak, and, at first, it seemed very probable that he would die. Gradually, however, he bettered, and on the eighteenth day he sat up.

At the end of six weeks the wound had closed; the urine was clear, with neither albumen nor tube casts; and he has entirely given up the use of morphia for a month, as his pains have entirely disappeared.

The case was notable on account of the great severity of the symptoms and the difficulty of diagnosis from calculus or pyelitis. The results seem to show that the trouble was purely due to movable kidney. The symptoms were so grave that it did not seem possible that they should arise simply from a floating kidney. They seemed to indicate serious organic disease threatening life.

A CATSUP BOTTLE IN THE RECTUM.¹

BY J. COLLINS WARREN, M.D.

THE patient, about forty years of age, of tramp-like aspect, came to the hospital, December 28, 1889, stating that the night before he had introduced a bottle into the rectum, for the purpose of sexual gratification, and was subsequently unable to extract it.

Dr. F. L. Weir, of Brockton, sent me the following account of the previous history of the case: "According to the man's story, his wife had eloped (in low

¹ Read at the meeting of the Surgical Section of the Suffolk District Medical Society, March 5, 1890.