much more slowly than when a small stem is the seat of obstruction. In the case of the superior mesenteric and its larger branches, obstruction is slowly recovered from, and for a time the circulation is virtually at a standstill."

"But here a very important element comes into consideration. The vessels of all parts of the body are not equally resistant. Those of the skin and muscles are peculiarly resistant, and are able to stand a considerably prolonged deprivation of blood. It is different with those of the intestines." The author then proceeds to describe an experiment made to test the vulnerability of the intestinal vessels. The conclusion drawn from this is that "before the anastomosis can be established the backward flow from the veins has already begun, and even the diapedesis. The re-establishment of the circulation even increases the tendency to hæmorrhage, as it subjects the blood to a higher pressure than that of venous blood. The experiments referred to showed that when the superior mesenteric artery is obstructed the hæmorrhagic infarction forms with a backward flow from the veins just as in other cases."

I must allow that it is more difficult to explain an infarction limited to a single loop of intestine than the occurrence of a more extensive lesion, for it seems necessary to assume that the obstruction which produces the less effect is situated in a part of the superior mesenteric distribution where the collateral circulation is extremely free. It is possible, however, that this may be explained by supposing that when one vessel had become occluded a rapid extension of thrombotic occlusion followed along the alternative blood circuits. This would be less difficult to assume possible if it could be shown that the vessels of the area were atheromatous or otherwise abnormal. I shall have something to say with reference to this point presently.

To conclude this part of my subject, I may add that the appearances in my case, both macroscopic and microscopic, were such as one would expect to meet with in a case of sudden vascular occlusion. Thus there was considerable hæmorrhage into the peritoneal cavity, the coil itself was full of foul smelling blood clots, and microscopic examination showed that the wall of the intestine was everywhere occupied by extravasated blood.

Although cases of hæmorrhagic infarction of the intestine are uncommon, I have found records of a considerable number. Osler, for instance, has recorded 3 which have occurred in his own practice. Most of the cases have been, as one would expect, associated with heart disease, but different causes have operated in others. Ulceration of the duodenum appeared to be the primary lesion in one instance, and aneurysm of the superior mesenteric artery caused infarction in one of Osler's cases. In the present case two important questions naturally suggest themselves. Could the lesion be in any way traced to the syphilis, and did the strangulated hernia take any part in its causation? Syphilitic arteritis is a well-recognised pathological condition, and although most writers on the subject deal almost exclusively with it as it affects the cerebral vessels, there can, I think, be little doubt that any artery may show similar changes. This is rendered probable by *a priori* reasoning, and more than probable by the record of numerous cases of endarteritis in vessels other than cerebral in syphilitic subjects. Instances of its occurrence in those whose age is much below that at which arterial disease from other causes usually takes place are of special importance. There is then nothing improbable in the supposition that this case may have been one dependent on arterial thrombosis in syphilitic vessels. Moreover, cases have been reported of mesenteric thrombosis stated to be of a syphilitic nature.

As regards the second question, it is worth noting that the damaged coil lay in the right iliac region, and the previous strangulation had been on the same side. It is, too, of interest in this connection to recall to mind Mr. Hutchinson's statement that "in almost all" (tertiary affections) "we see good reason to believe that in addition to the syphilitic taint some localising influence takes an important share in evoking the local changes." Is it not just possible that the strangulation may have acted in this instance as such an influence, and determined the occurrence of the syphilitic arteritis in this particular region?

The extent of intestine involved may range from a few

inches to almost the entire length of the small intestine, as in a case recorded by Dr. Frederick Taylor; and I have seen a report of one case in which three distinct infarctions had taken place.

The disease is very generally fatal, but, it is supposed, not necessarily so in all cases. A case of Gull's is quoted in proof of this. In this patient copious hæmorrhage at the outset, with subsequent passage *per rectum* of long sloughs of mucous membrane, together with a preceding œdema of the arm of supposed syphilitic origin, were the signs relied on in making the diagnosis.

The symptoms are, as one would expect, very variable. Hæmorrhage from the bowels, followed by signs of intestinal obstruction, might in some cases lead one to suspect an infarction if there was some possible cause for embolism or thrombosis present. It will have been noted that there was no blood passed in this case of mine.

Little need be said with reference to treatment. Any case presenting such symptoms as these would be looked upon by most medical men as one urgently requiring operative interference, and it would then depend upon the extent of bowel implicated whether resection could be carried out or not. An example of successful resection for this condition is recorded in the *Annals of Surgery* for 1895.

NOTE ON A CASE OF PERFORATED GASTRIC ULCER.

By G. REINHARDT ANDERSON, F.R.C.S.,
Hon. Medical Officer, Southport Infirmary.

I WAS consulted on February 18th, 1897, by a young woman, apparently in good health, complaining of pain after food. The pain was not constant, nor accompanied by vomiting. She had vomited after every meal on February 16th, but this she attributed to a bilious attack. She had never vomited blood. The pain, she stated, had existed off and on for some months. I subsequently ascertained that twelve months previously, in the early part of 1896, she was a ward maid in the infirmary, but had to give up her situation because of anæmia and persistent dyspepsia. I found her somewhat anæmic, with pain and local tenderness in the epigastrium. I prescribed a milk diet and the usual remedies.

On February 21st, at 5 P.M., I received a call to see her as it was thought she was dying. I found the patient in a state of profound collapse, profuse perspiration, ashen face, and with a rapid, thready pulse. She complained of severe abdominal pain. There had been no vomiting.

It seems that after a very hearty meal at 1 P.M., consisting of calf's heart, peas, potatoes, and pastry, she had taken a walk of over three miles. When nearing home, at 4.45 P.M., she was suddenly seized with such severe pain in the abdomen that it became necessary to put her in a cab to get her there, though only three or four hundred yards away.

From this history I suspected perforation of a gastric ulcer, and on examining the abdomen I made out the following facts: The walls were rigid, hardly moving at all with respiration; there was marked tympanitic resonance with absence of the liver dulness to the upper border of the seventh rib, and there was shifting dulness in either flank to a small extent. Palpation elicited general acute tenderness. A small injection of morphine was given, and arrangements made for her immediate removal to the infirmary over a mile distant.

At 7.30 P.M., 2½ hours after the onset of pain, I operated. The abdomen was opened by a mesial incision 5½ inches in length from just below the xiphoid cartilage to within an inch of the umbilicus. On entering the peritoneal cavity there was an escape of gas and turbid serum with a marked gastric odour. Flakes of lymph were already visible on the surface of the liver and omentum as they presented in the wound. On drawing down the stomach, a small punched-out perforation readily came into view, from which the dark-brown fluid contents of the stomach escaped in plenty, unavoidably at first rushing into the peritoneal cavity. Traction on the stomach induced retching, increasing the flow. The perforation was now surrounded by sponges, and the stomach emptied as much as possible into a porringer. I then secured

the perforation by three rows of Lembert sutures, infolding the stomach on itself, in its long axis. Fine silk was used. The peritoneum was flushed out by large quantities of sterilised water—poured out of jugs and also by irrigation with a glass tube—above and below the liver into either flank, and down into the pelvis. This was continued till it escaped quite clear and free from all gastric odour. Very few solid particles came into view. After systematic sponging, the abdominal wound was secured in the usual way. No drain was used. The operation lasted 1 hour and 20 minutes, and the patient bore it well.

The subsequent progress was an almost uninterrupted one towards recovery. Vomiting (troublesome for the first forty-eight hours) was relieved by sips of very hot water and powders of bismuth carbonate. A slight attack of pleurisy with effusion on the left side appeared on the fourth day, but this gradually and completely cleared up without aspiration.

Rectal feeding was maintained till the ninth day after the operation, in view of the tendency to vomit, and also because her general condition kept so good as not urgently to demand food by the mouth. Fish was given on the seventeenth day, and chicken on the twenty-seventh day. The stitches were all removed on the ninth day, the wound was soundly healed, and there was neither abdominal pain nor tenderness. The temperature, which had never been higher than 102° F. (on the second day after operation), became normal on the thirteenth day, and remained so. She was allowed up for the first time on March 24th, and was discharged on April 29th.

Eight months after the operation the patient crossed from Holyhead to Dublin. She was very sick, but sustained no harm. She is now (April, 1898), in perfect health, and free from all dyspeptic symptoms.

In submitting the notes of this case, I am aware that there is nothing very unusual to comment upon. I was fortunately able to see the patient within fifteen minutes of the perforation, and it is to the very short time that elapsed between the accident and opening the peritoneum that the happy result I believe is largely due. Also, the perforation was small (not larger than a crow quill), situated on the anterior surface, near the cardiac end, and though the stomach was loaded with partially digested food, not much had time to escape into the body cavity.

Moreover, I was not hampered by those difficulties which have beset many others operating on similar cases—namely, induration around the seat of ulcer, extensive adhesions, and the position of the perforation being such as to render efficient occlusion almost impossible.

The chief interest, it seems to me, lies in the absence of previous symptoms pointing urgently to a gastric ulcer. Her complaint was of vague pain and discomfort after food; her appearance that of good health; and she was able to fulfil the arduous duties of waitress in a busy restaurant without trouble, so that I must confess on my first and only interview with the patient three days before the acute mischief, I was not impressed with the idea that she had a gastric ulcer. I prescribed the milk diet more as a precautionary measure, advice which was evidently disregarded.

The presence of these small, solitary, punched-out ulcers, which in recorded cases so frequently are found in sudden perforation of the stomach, is a matter of some interest, for they may exist without giving rise to more than ill-defined symptoms of dyspepsia, and can easily be overlooked without careful palpation for a tender or painful area. Certain it is that since my experience recorded above, I have treated with more respect similar cases coming under my care, enforcing the absolute rest needful to avoid a possible perforation.

In the treatment of this accident there is little doubt that the best chance for the patient is early diagnosis and prompt operation.

AN Association of Medical Librarians was organised at a meeting of a number of representatives of medical libraries held in Philadelphia on May 2nd. The officers elected were:—*President*: Dr. George M. Gould, Editor of the *Philadelphia Medical Journal*; *Vice-President*: Dr. J. L. Rothrock, of St. Paul, Minn.; *Secretary*: Miss M. R. Charlton, of Montreal, Canada; *Treasurer*: Dr. William Browning, of Brooklyn, N.Y.

THREE CASES OF FOREIGN BODIES IN THE OESOPHAGUS.

By GEORGE HEATON, M.B., B.Ch. Oxon, F.R.C.S.,
Surgeon to the General Hospital, Birmingham.

THE three subjoined cases which have recently been under my care illustrate well the value of the Roentgen rays in localising foreign bodies in the food passages. In two of the cases the bodies (coins) had been impacted for some considerable time, and gave but little evidence of their presence. In the third case, where a whistle had been swallowed, the symptoms were more urgent, and the body was so firmly impacted that oesophagotomy was necessary to remove it.

It is noteworthy that in all the cases the body was lodged in the oesophagus, either just above the level of or behind the manubrium sterni, at a point where the oesophagus is compressed between the sternum in front and the spinal column behind.

CASE I. *Whistle impacted in the Oesophagus: Oesophagotomy; Cure.*—R. S., a little boy, aged 5, was admitted under my care into the General Hospital on January 15th with symptoms of oesophageal obstruction. The previous day, while sucking a small round whistle, he accidentally swallowed it, and it seemed to stick in his throat. He coughed up some blood soon after, and has had pain at the episternal notch, and inability to swallow anything but fluids.

Condition on Admission.—A pale, delicate boy. Complete inability to swallow; much pain at episternal notch. Nothing abnormal to be felt in the neck. A skiagraph showed the whistle lying behind the first piece of the sternum, with its long flattened axis lying transversely. (Fig. 1.)

Fig. 1.—Skiagraph of whistle in oesophagus.

January 16th. An anæsthetic was administered, and several attempts were made to remove the body with forceps and coin catcher. It could be felt distinctly in the oesophagus about 6 inches measured from the teeth, but no instrument could be passed beyond it. Oesophagotomy was then performed. A 3-inch incision was made along the interior border of the left sterno-mastoid, the lower end of the incision reaching almost to the clavicle. The large vessels of the neck being drawn to the outer side, the oesophagus was easily exposed in the lower part of the wound. It was opened, and the lips of the incision held open by a suture passed through them on each side. On passing a probe down the oesophagus the whistle was felt firmly impacted behind the sternum. After several fruitless attempts it was finally extracted with forceps. The wound in the oesophagus was closed by a double row of catgut sutures, the inner row being passed through mucous membrane only. The outer wound was closed above, but its lower half was packed with iodoform gauze.

The boy made a good recovery. No food was given by the mouth for the first forty-eight hours. There was a little leakage from the wound in the oesophagus for two or three days. This, however, quickly ceased, and he was discharged well on February 14th.