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 1. 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.

The whistle was made of tin, and measured $1\frac{3}{4}$ inch in diameter.

CASE II. Coin in Oesophagus for Three Months.—R. E., a girl, aged 13, was admitted into hospital on February 11th, complaining of pain and tenderness between the scapulæ, with a history of having swallowed a penny three months previously. Three months previously she swallowed a penny accidentally; it seemed to "stick" in her throat. She had been under medical treatment since for pain in the back. There was no difficulty whatever in swallowing either liquids or solids, the only symptoms complained of being pain and tenderness over the eighth dorsal spine. A skiagraph taken on February 10th revealed the penny situated just behind the

Fig. 2.—Skiagraph of penny in oesophagus.

sterno-clavicular articulation a little to the left of the median line (Fig. 2). The coin was lying transversely. On February 12th the patient was anaesthetised. A No. 14 oesophageal bougie passed into the stomach without any trouble and without grating against any foreign body. On passing a coin catcher down it was felt to grate against the coin, and after several unsuccessful attempts the coin was brought up. She left the hospital the next day.

CASE III. Shilling and Sixpence in the Oesophagus for Six Weeks.—M. E., an infant, aged 18 months, was admitted into the Children's Hospital, Birmingham, on March 1st, with a history of having swallowed a shilling and a sixpence forty days previously. The child was extremely fretful and peevish.

Fig. 3.—Skiagraph of coin in oesophagus.

She had no difficulty in swallowing fluids, but refused to swallow anything solid. There was nothing to be discovered in the neck by palpation. A skiagraph was taken, and showed

a coin lying transversely in the upper part of the thorax just behind the manubrium sterni (Fig. 3). The day following the taking of the skiagraph several ecchymotic patches appeared in the lower part of the neck.

On March 4th the child was anaesthetised. On passing the coin catcher down the oesophagus a sixpenny piece was removed. No other coin could be detected with the coin catcher; but on passing a large oesophageal bougie there was some difficulty experienced in making it enter the oesophagus, and a grating sensation as it passed onward into the stomach. A long curved pair of forceps was passed into the oesophagus, and after several unsuccessful attempts a shilling was grasped and removed. Both coins were covered with a black film of sulphide of silver; they apparently lay together in the oesophagus, just behind the manubrium.

DIAGNOSIS AND TREATMENT OF SPASMODIC STRICTURE OF THE OESOPHAGUS.

By J. C. RUSSEL, M.D.,
Southport.

THERE is a form of stricture of the oesophagus which, I have reason to think, cannot be extremely rare, and yet few surgeons seem to recognise its existence, and cases are seldom heard of. This is that stricture which is situated at or near the cardiac orifice of the stomach, and is caused by muscular spasm, superimposed upon a greater or less degree of more permanent contraction.

Eleven years ago I met with such a case in my practice, and, directly or indirectly in consequence, I have since seen six similar cases, all, with one exception, living within a radius of less than 40 miles. Its apparent rarity I believe to be due, in the first place, to the misleading character of the symptoms, suggesting, as they do, disease of the stomach; and, secondly, to the inefficacy of treatment by bougies in this condition, causing a diagnosis of stricture, once made, to be abandoned or modified since the symptoms persist after supposed dilatation. As to treatment, that which in my hands has given good results consists in stretching the stricture, by an expanding dilator, to a calibre approaching that of the normal oesophagus at that point. This is not done suddenly or at one operation, but with bags of increasing size and at several sittings. Four cases were by this means completely cured, one was much improved, and of the remaining two one was not improved and the other has not been treated. The following is a brief history of my cases:

CASE I.—Mrs. S., about 40. Seen eleven years ago. For several years gradual aggravation of two symptoms, feeling that food did not reach the stomach, and regurgitation of what was swallowed. Had not previously been treated. Now no solid food will pass, and most of the liquid is rejected. A tight stricture at the cardiac orifice. Dilatation by bougies till No. 23 Jaques passed. No improvement in symptoms. I was then persuaded that further stretching beyond what a bougie could accomplish, or even overstretching as is practised on the anal sphincter, would be necessary to overcome the contraction. I accordingly made an instrument consisting of a sausage-shaped silk bag, rendered air tight by a very thin rubber bag within, and mounted on the end of a tube or hollow bougie. This was passed through the stricture in a collapsed state, and blown up by an air syringe when in position. This method proved successful; after a time swallowing became normal and continues so, the lady being now alive and in good health.

CASE II.—A man about 40 (J. H.), seen six years ago. His trouble came on suddenly about two years ago; while drinking a draught of liquid, it was suddenly rejected and nearly choked him. Since then liquid only has passed, and that is often rejected. This man had been seen by several physicians, one of whom advised washing out the stomach, and himself passed the tube and performed the operation. The washing was continued, first by the patient's ordinary adviser, and afterwards by the patient himself. This tube probably never entered the stomach. When I saw him a much smaller tube would not pass, and he was afterwards satisfied that the other had never passed. Treatment by dilator was not successful in this case. He had to be taught to feed himself with the stomach pump, which he has done since, and keeps up his health and strength. A case of mistaken primary diagnosis. It does not appear that stricture was suspected until the patient himself thought of it.

CASE III.—Dr. S., seen November, 1896, a surgeon in the Colonial service, aged 28. Symptoms coming on for about three years, regurgitation in particular. For about a year not more than one-third of the fluid he takes has passed into the stomach, the rest being rejected. Saliva collects and is brought up every two hours, night and day. His sustenance consists of milk and eggs taken through a small tube. He had been seen by several medical men. An eminent London surgeon had passed bougies up to 2 cm. in diameter without improvement in the symptoms. A hospital surgeon in Edinburgh also treated him, and came to the conclusion that not stricture but dilatation and atony of the oesophagus was at the root of the evil, and advised gastrostomy as the only remedy. Others propounded other theories. I used the expanding dilator, and