meeting together and discussion by special pathologists and persons deeply interested and well instructed in pathology; but I should be sorry to find that practitioners of all kinds, general and special, should cease to take an active interest in the work of this Society. The late Dr. Hadden spoke of its "educational function," and I am quite sure that it has proved of very great advantage to many men in busy practice, who have not been able to keep up their connection with their hospitals, and has served to popularise new work in pathology.

THE APPLICATION OF PATHOLOGY TO PRACTICE.

From many points of view it is very desirable that some means should be taken to connect the study of pathology more closely with the practice of medicine and surgery, not merely to maintain the interest of the practitioner in the study of pathology, but also to ensure an earlier application of new discoveries in pathology to the practice of medicine and surgery.

At present we have, on the one hand, a number of men—particularly of young men, engaged in scientific research, the relation of which to practical medicine and surgery is not immediately apparent to them. On the other hand are many men, for the most part older, engaged in the practice of many branches of medicine and surgery, but from various reasons, unacquainted with the new scientific work which might lend so much assistance to their practice.

We need an intermediate class of workers, acquainted with the work of the laboratory, and in regular attendance in the wards. And I should like to see departments of Applied Pathology attached to the hospitals, and served by some of those younger men who are waiting to become attached as physicians and surgeons, and who, after two or three years spent in the teaching of anatomy and physiology, sometimes find it difficult to fill in the waiting time with work which is sufficiently interesting on the one hand, and likely to be useful on the other hand.

What better training could such men have than the study of the application of pathology to practical medicine and surgery? What work more useful to others or to themselves? What work more interesting or absorbing to fill the years of waiting for place and practice? What training more likely to develop physicians and surgeons fit to occupy the highest posts in hospital and medical school? Mingling in the ward work of the hospital, constantly observant of successes and still more of failures in practice, charged with the carrying out of some special investigation, and provided with opportunity and material, the men serving such a department would form that very connecting link between the laboratory and the wards which is so much needed.

The instant application of every new theory or statement in pathology to the practice of medicine and surgery would be a grievous error, but the too slow appreciation and application of confirmed theories and statements appears to be almost a crime; and, even the confirmation or refutation of new theories and statements in pathology which may have an important bearing on practice is often terribly long deferred.

An example of what is meant is afforded by the tardy and almost unwilling acceptance of the later researches of Heidenhain, Stiles, and others on the anatomical course of cancer of the breast. If these researches are correct, the methods of operating for cancer of the breast which have been pursued hitherto have not been scientifically directed to the completest and most thorough extirpation of the disease; and, when they have been successful—have been successful, so to speak, by chance. Only one surgeon, so far as I am aware, has deliberately designed his operations on the information afforded by Dr. Heidenhain—Dr. William Halsted, of the Johns Hopkins Hospital in the United States, and he has published results far superior to those of any other surgeon. Admitting that sufficient time has not elapsed to prove the greater success of Halsted's operation, and that the statements of Heidenhain must be received with caution, yet the matter is surely worthy, not merely of some attention, but of repeated observations in all parts of the world, to check the work of Heidenhain with the object of proving or disproving his theories and statements. The comfort and, it may be, the lives of thousands of unfortunate women

afflicted with cancer of the breast may hang on the correctness of such researches and on their application to the surgery of the breast. Yet, I venture to say that very few surgeons in active practice are acquainted with Heidenhain's work; and of those who are, some decline to accept his statements, while others are waiting patiently until they have been proved by repeated researches.

If the question were one of business and of the saving or the making of money, such applications would not be left to hazard and deferred for years. The observations would be tested and experimented on, and applied at the earliest possible period. In this respect it is very interesting to compare the application of Pasteur's and of Lister's work. The French professor's discoveries were speedily taken advantage of by brewers, wine manufacturers and farmers, with enormous benefit to industry and agriculture; Professor Lister's discoveries, founded on the researches of Pasteur and applied to surgery, made their way slowly and with difficulty in the course of many years. They were received with distrust, the statements and results denied or belittled, and every effort was made to prevent them from becoming the basis of scientific surgery. Their ultimate triumph makes the tardiness of their acceptance the more regrettable.

In the greater separation which appears likely to take place between pathologists and practitioners, such an intermediate class of workers as I have indicated will become almost a necessity, if the results of pathological research are to be apply and speedily applied to practice; and I hope that our Society may lend important aid in this respect by arranging, amongst its other work, for exhibitions and discussions of such pathological work as is likely to have a direct bearing on the improvement of medical and surgical practice. It has already done so on more than one occasion: for example, in the exhibition and discussion of intracranial tumours at the moment when the surgery of such tumours was prominently before the profession.

To those who object to the introduction of any utilitarian element into scientific work, I would reply that, while I should regard it as a great misfortune that no piece of scientific work should be undertaken unless its direct bearing on practice could be demonstrated, a utilitarian object need not in the least affect the quality of scientific work. Amongst many proofs which might be given let two suffice: the invention of the safety lamp and the discovery of the nature of silkworm disease. The invention was undertaken by Sir Humphry Davy, and the discovery was made by Professor Pasteur in answer to urgent requests on the part of persons interested, and with a distinctly utilitarian object. Both the invention and the discovery, while they were directly successful in saving life and money, were the result of and resulted in excellent scientific work.

We, in our profession, have the best possible excuse for desiring the rapid application of scientific discovery to practice; for the application is not for the saving of money, but for the saving of human life and suffering.

A POINT IN THE OPERATION OF GASTROSTOMY.

By LEONARD A. BIDWELL, F.R.C.S.,
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IN most descriptions of the operation of gastrostomy, no directions are given as to whether the stomach should be attached to the peritoneum only or to the whole thickness of the abdominal wall, and although I believe that it is the practice of several surgeons to attach the stomach to the peritoneum only, I have not found any definite instructions on the point in any of the textbooks or monographs on the subject.

I am strongly in favour of attaching the stomach to the peritoneum alone, and offer the following reasons:—

(1) Since the stomach is a movable organ, it should be sutured to some freely movable part or the constant dragging of the stomach will interfere with the formation of firm adhesions; now the whole thickness of the abdominal wall is not sufficiently movable, whereas the peritoneum is but loosely attached to the other parietes.

(2) Since the stitches do not pass through the skin, and so are not liable to become septic they can be left in permanently and thus serve as a support to the adhesions between stomach and peritoneum.

(3) When the stomach is attached to the whole thickness of the abdominal wall, part of the organ will be much displaced and this will not favour the formation of firm adhesions, when on the other hand the stomach is attached to the peritoneum alone, it returns to its normal position dragging with it a funnel shaped portion of parietal peritoneum.

(4) This retraction of stomach and attached peritoneum leaves a long sinuous tract from the stomach to the skin, which has a great tendency to contract and so prevents any escape of stomach contents.

The employment of a vertical incision, without division of the recti muscles, instead of the old horizontal one, predisposes to contraction of the wound and therefore to the prevention of the escape of stomach contents.

If we can insure the prevention of any escape of stomach contents by any simple method of operating, it is not necessary to resort to more complicated methods such as those of Witzel and Frank, since the opening of the stomach at the time of the first operation introduces more risk.

The operation which I perform is briefly as follows:—

A vertical incision, 3 inches long, is made, commencing just below the tip of the ninth left rib; the fibres of the rectus are separated with the handle of a scalpel, and the peritoneum opened. The stomach is then pulled out and while it is held between the finger and thumb of an assistant, Halsted's sutures are inserted all round the peritoneal opening fixing the stomach to the peritoneum; each suture, which is in the form of a blanket stitch, is passed in a radial direction through the peritoneum then through about $\frac{1}{4}$ inch of stomach wall and then back again through stomach and peritoneum, it is then tied and the ends cut short; each stitch is placed about $\frac{1}{4}$ inch apart, and about 12 to 18 are required. The whole of the fixing of the stomach can be effected in ten minutes. A guiding suture is placed in the middle of the exposed surface of the stomach, and the skin wound is shortened by one or two sutures. The stomach will be found to have retracted considerably dragging with it the peritoneum; the wound is then packed with gauze. On the third or fourth day the packing is removed, and an opening made into the stomach with a small tenotomy knife, into this opening a director is introduced followed by a pair of sinus forceps with which the opening is sufficiently dilated to receive a No. 8 Jacques catheter, which is tied to the guiding stitch in the stomach.

The following brief record of two cases in which I have operated, in this way, will illustrate the method, and shew its efficiency in preventing the escape of gastric contents:

CASE I.—M, aged 65, in the Fulham Union Infirmary, under the care of Dr. Steer, who kindly asked me to operate. The patient had suffered from dysphagia for nearly a year, but had improved at times. He was extremely emaciated, the abdomen being empty and retracted; he could swallow about four mouthfuls of milk, but after the fifth he was always sick, the vomit being unaltered milk and not acid. On passing a bougie, a stricture was found $13\frac{1}{2}$ inches from the teeth, several attempts were made to introduce the smallest size of Symonds's tubes, but nothing could be passed through the stricture; there were no enlarged glands in the neck. Gastrostomy was performed as described above, on June 24th, 1895, and the stomach was opened on June 29th. At first only three ounces of beef tea and peptonised milk were given every three hours, but the quantity was gradually increased to one pint given five times a day. The patient improved in general health for three weeks but then developed diarrhoea which was not controlled by medicines, and he died on July 22nd (four weeks after the operation). There had never been any escape of gastric juice from the wound. At the necropsy the stomach was found to be firmly adherent to the peritoneum, and a long sinuous tract connected the stomach to the external opening; old standing fibroid phthisis was found in the lungs.

CASE II.—M, aged 59, sent to me at the West London Hospital by Dr. F. Alderson. The patient had suffered from difficulty in swallowing for two years and then could only

swallow liquids with difficulty, he also had great trouble in swallowing his saliva and was much emaciated. On passing a bougie, a stricture was found about $12\frac{1}{2}$ inches from the teeth, but as the finest bougie could not be made to penetrate, no Symonds's tube could be introduced.

Gastrostomy was performed on February 5th, 1896, and the stomach was opened on February 9th, and feeding commenced with 3 ounces of strong beef tea, milk and brandy every three hours. The quantity was gradually increased on the succeeding days: thus he was given on the second day $\frac{3}{4}$ v every three hours, on the third day $\frac{3}{4}$ viii every four hours, on the fourth day $\frac{3}{4}$ x, on the fifth day $\frac{3}{4}$ xii, on the sixth day $\frac{3}{4}$ xv, and on the seventh day 1 pint. He left the hospital on March 5th able to feed himself comfortably and suffering from no discomfort from the stomach opening. He attended as an out-patient for three months, and died on May 10th, 1896, from broncho-pneumonia.

At the necropsy a large epithelioma was found surrounding the œsophagus, outside which an abscess had formed and had burst into the pleura. The stomach was firmly adherent to the abdominal wall. At no time did he have any escape of stomach contents from the wound.

REMARKS.—Although there can be no doubt that the sooner gastrostomy is performed for malignant disease of the œsophagus the better it is for the patient, I do not myself resort to it if the stricture is pervious to a bougie, since a trial should then be made with Symonds's tubes. I have treated two cases of carcinoma of the œsophagus, with these tubes with the most satisfactory results; one case, a gentleman, aged 50, regained sufficient strength to go out shooting every day over a rough country, and finally died from a cerebral hæmorrhage which occurred while climbing over a hedge. The other case, a hospital patient, after wearing a tube for some months, during which he gained flesh, bit through and swallowed the silk of the tube, with the result that the tube became blocked, and œsophagotomy had to be performed to remove it; the patient however did not regain his strength and died about a fortnight after the operation.

A CASE OF SUBPHRENIC PNEUMOTHORAX; EXCISION OF RIBS AND DRAINAGE; RECOVERY.¹

BY

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H., AGED 26, single, was admitted into the Hull Royal Infirmary, under Dr. Frank Nicholson, on April 23rd, 1895, and discharged cured on June 14th, 1895. He enlisted in the army in November, 1885, and was for five years in India, returning home in November, 1893, when he left the army, and is now a tram driver.

In 1888 he had gonorrhœa, which lasted off and on for a year, and in 1890 a venereal sore, but this was not followed by sore throat or rash, and the army surgeon only kept him in hospital and on treatment for a week. In 1891 he had dysentery and fever, and was in hospital one month, but since then he has had no looseness or other trouble with the bowels. With these exceptions he had good health till about a year ago.

Both parents are living and healthy, and he has lost no brothers or sisters. One brother, who was in the army, had an abscess in the liver, but is now recovered. He appears to have been temperate, taking one or two pints of beer daily, and rarely anything else.

For about a year before admission he had been complaining of a dull aching pain over the lower part of the right chest, but had kept at work till a few weeks previously, when the pain had become much worse. Beyond the pain he had complained of nothing except occasional nausea and vomiting in the earlier periods.

On admission, the percussion note all over the front of the right chest was high pitched and tympanitic, but good vesic-

¹ Read before the East York and North Lincoln Branch of the British Medical Association.