again in 1853. In his long wrestling with scurvy he spent his resources, apparently out of all proportion to the results, to produce any sort of fermented drink for his men; and his laborious achievement of a sort of beer when there were only three men, himself included, of the ship's company able to move from their bunks, argues a great faith in its value. But there is nothing to show that it justified his faith. All his ingenuity may possibly have delayed the onset and progress of the disease, but his men were in the last stages of scurvy and it was only their occasional supplies of fresh meat that saved them.

At its best, under the most favourable conditions, it has never been claimed that beer is a complete protection from scurvy over any extended period of time; and even in Cook's time his beer and his infusion of malt did not alone confer invulnerability. But (before lemon juice removed the need of it) malt preparations do seem to have given a very considerable measure of protection when methods of malting and brewing were simple. Later, as a nourishing drink, and as a substitute for spirits, beer still had value for the seaman on Arctic service; but with the elaborating and perfecting of malting and brewing processes, the antiscorbutic element seems to have been largely if not completely eliminated. Thus the conclusion drawn by Harden and Zilva¹⁰ from their recent experiments with beer made from kilned malt is confirmed by the history of its failure in Arctic experience. But Captain Dyke's account confirms and justifies the belief in the beer used by earlier generations in the Navy, a hundred and twenty years ago.

Clinical Notes :

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

PRE-OPERATIVE X RAY DEMONSTRATION OF SILENT INTRATHORACIC METASTASES OF MALIGNANT DISEASE.

BY C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P.

THERE are probably few surgeons who, after having removed a malignant growth with its lymphatic area, have not experienced the disappointment of seeing the patient rapidly die from intrathoracic metastases, while the operation area remained free from recurrence. In not a few of these cases the symptoms of intrathoracic involvement appear so soon that there can be no reasonable doubt that the secondary growths were actually present at the time of the operation. Secondary deposits within the thorax are often "silent"—i.e., may exist for a long time and reach a considerable size before giving a distinctive clinical picture. Radiography is in many cases able to demonstrate the existence of these metastases while still silent. Of this the following case is an example.

A stout multipara, aged 60 years, was seen by the writer last spring. The right breast contained a cancerous mass, the size of a lawn-tennis ball, which had invaded the skin surrounding the nipple, but had not yet ulcerated. The breast was freely movable on the chest wall. No glandular involvement could be felt. Clinically the thoracic contents appeared normal. Except for a somewhat feeble pulse there was no obvious reason why a radical operation should not give a chance of cure, provided that radiography showed no intrathoracic metastasis. The skiagram, however, showed, in both sides of the chest, masses of growth, which appeared as shadows, 5 inches in vertical extent, to the right and left of the sternum and pericardium. The husband was informed of the impossibility of a cure by operation, but was advised to sanction a simple removal of the breast in order to prevent the sepsis which would occur as soon as the involved skin gave way.

The breast was removed, and 14 days later the patient left the nursing home. The pathologist reported that the growth was an alveolar carcinoma with very little connective tissue. Three weeks after operation a slight cough developed, but subsided under treatment. Six weeks after operation dyspnoea commenced and the cough returned, with crepitations in both lungs, death occurring three months after removal of the breast.

In nearly every form of malignant disease the thoracic contents are a possible site of metastases which for a time

may cause no symptoms. The presence or absence of such metastases cannot be decided by a consideration of either the size, duration, or position of the primary growth. Further, the metastases frequently cannot be detected by ordinary clinical methods.

Radiologists are now usually able to demonstrate the presence of secondary malignant deposits within the chest. There is no reason why the radiographic examinations should not include regions other than the thorax in which deep-seated silent metastases are prone to occur.

The principle of employing routine pre-operative radiography in those varieties of malignant disease, both sarcoma and carcinoma, which are liable to cause intrathoracic metastases is relatively new, and at present is but little acted upon. Its importance for the prevention of useless operations is obvious. The principle is deserving of wide recognition and application.

The results of its adoption in the surgery of malignant disease may be expected to include: 1. A diminution in the number of radical operations performed on cases in which the disease has, prior to operation, produced inoperable metastases, and this elimination of incurable cases will, as time goes on, result in a higher percentage of cures among the cases on which radical operations are performed. 2. A decrease in the number of palliative operations, because many patients decline any form of operation unless the surgeon is able to hold out a definite possibility that the operation may result in cure.

Plymouth.

TOTAL EXCISION OF THE URINARY BLADDER.

BY JOHN C. JEFFERSON, F.R.C.S. ENG.,
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THE following record gives an account of a case of total excision of the urinary bladder in a woman for advanced epithelioma of the urethra.

A married woman, aged 60, admitted to Rochdale Infirmary, stated that three months before she had noticed pain on micturition and difficulty in emptying the bladder, these symptoms gradually becoming worse. About two weeks before admission incontinence took the place of retention. An advanced epithelioma of the urethra was found. I am of the opinion that it originated within the urethra, as the greater part was inside the urethral orifice and not actually about it. Further, though the growth had invaded the sphincter vesicæ, causing incontinence, it had not become attached to the pubic rami. The inguinal glands on the left side were enlarged, but freely movable. The patient was in good condition. Some urine obtained by taking catheter specimens was not foul, though it contained pus, and it improved considerably under treatment. As the patient was in a very miserable condition owing to the constant dribbling away of the urine, I decided to transplant the ureters with their vesical orifices into the colon, to remove the bladder and urethra completely, and at a subsequent operation to remove the inguinal glands.

On March 4th, 1918, with patient in high Trendelenburg position, I opened the abdomen in the middle line, the incision extending from pubis to umbilicus. The intestines were thoroughly packed off with gauze and the wound edges protected with tetras. A transverse incision was made through the vesico-uterine fold of peritoneum and the bladder separated from the cervix uteri and vagina. The ureters were readily distinguished and isolated for not more than $\frac{1}{4}$ inch from their entry into the bladder, a stout loop of silk passed beneath each facilitating handling. The peritoneum on the superior aspect of the bladder was peeled off and the viscus freed on all sides until the pelvic floor was reached. The bladder was opened and the ureteric orifices, with a small circle of mucous membrane around each, excised.

The pelvic colon, which, fortunately, had a long mesentery, was next brought down and each ureter transplanted into it separately, as follows. A linen thread stay suture was passed through the mucous membrane around the ureteric orifice. A small incision was next made into the lumen of the colon through the anterior muscular band. Both free ends of the thread were now passed through the eye of a long curved intestinal needle, the needle passed into the lumen of the bowel through the incision and out again through its walls about 1 inch from the point of entry. By drawing on the thread the ureter was then pulled well inside the bowel and retained there while the aperture was closed around it and the terminal free part of the ureter enfolded in the bowel wall with Lembert sutures. The stay suture was then cut and removed. By this means the

¹⁰ Harden and Zilva, 1918. Journal of the Institute of Brewing.