It may be objected that my repetition of applications of freezing are unnecessary, and that a longer and single exposure would be preferable. With this view I do not agree; it must never be forgotten that different persons have different degrees of cutaneous vulnerability, and that longer exposures, as advised by Morton, may in exceptional cases cause a really severe ulceration, producing scarring more disfiguring than the lesion treated. Since the disease is almost restricted to the face, the effects of disfigurement are most important to avoid, and it is better in my opinion to do shorter treatments repeated as often as may be required. It will be seen that in the greater number of my cases three was the maximum number needed. In no case have I had a reaction that was resented by the patient, and I have not met with the very unsightly and alarming oedema of the soft tissue of the face which I have sometimes produced with longer exposures practised for other diseases—for example, lupus vulgaris and lupus erythematosus. With so chronic a disease as rodent ulcer, whether the duration of the treatment extends over one week or one month, is of little import.

The propriety of treating any malignant tumours without radical operations of removal may very reasonably be questioned, especially by surgeons, some of whom are not inclined to view the radium propaganda with approbation. In the case of rodent ulcers the malignancy is so slight, and the absence of glandular involvement so constant, the disfigurement produced by radical removal so great, and in the special circumstances of its usual sites so resented by patients, that the decision in practical experience goes against the operating surgeon in the majority of instances, and it becomes a choice as to what other means can be adopted. The choice at present lies between (1) x rays; (2) radium; (3) actual cautery; (4) ionization; (5) freezing.

My experience with the x ray method has been that it is more uncertain in its effects than the two methods I have advocated above, much more tedious, more exposed to risk of untoward happenings, such as severe conjunctivitis, for the ulcer commonly is in such positions that the conjunctiva cannot help being included in the exposure, and such as disfiguring telangiectases on the parts treated.

I am aware that other observers, with far wider experience of x -ray treatment than I possess, still prefer this treatment to all others. Sequeira,² who has had an exceptional opportunity of testing this therapeutic agency, reported 181 cases of rodent ulcer so treated; of these, 75 had remained cured for at least three years; 26 for at least two years; 38 had relapses, of which 31 were ultimately healed; and in 42 healing was not obtained by this means. Sequeira remarks that there is "a class of apparently slight cases which prove very resistant to x rays," and it is just in these cases that I should advise the substitution of the methods of ionization and freezing.

With radium the same uncertainty exists as to what the extent of the effect may be, and treatment is tedious and expensive, and often not within the reach of practitioners out of the large towns.

I have had small personal experience of the actual cautery, a treatment much practised in Paris at present, but I have seen two excellent results. It is rapid and convenient, but produces much more scarring than either of the two processes I have described in detail.

Between ionization and freezing, which are equally convenient and widely practicable, my own preference has turned to the latter, but I am not convinced that ionization is not equally efficient in producing a permanent cure.

REFERENCES.

- ¹ *Lancet*, July 9th, 1910. ² *Journ. Amer. Med. Assoc.*, May 7th, 1910.
³ *Transactions, Second Congress of International Surgical Society*, Brussels, 1908.

WE are informed that some of the films of micro-organisms referred to in the paragraph headed "Cinematographic Microscopy," published in the *JOURNAL* of December 31st, 1910, p. 2037, will be shown at a meeting of the Camera Club on January 19th at 8.30 p.m. The accommodation is limited, but any members of the Association who desire to be present will receive invitations if they will promptly send their names to Mr. Henry W. Fairholme, honorary secretary of the Camera Club, 17, John Street, Adelphi, W.C.

EXCISION OF A CANCEROUS SEGMENT OF THE OESOPHAGUS: RESTORATION OF THE OESOPHAGUS BY MEANS OF SKIN FLAP.

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To the general surgeon no class of case appears to be as utterly hopeless as cancer of the oesophagus. When the portion of the oesophagus within the thorax is involved the possibility of resecting a section of it by any operation however severe, and of eliminating the disease, appears to be very remote. In such cases I think that the wisest course to pursue is to make a fistulous opening into the stomach, through which the patient can be fed easily and without discomfort. The operation is a very simple one, and it is accompanied with only a slight amount of pain—an important feature to a patient who is often more than half starved and whose pluck is consequently destroyed. After this operative procedure has been effected satisfactorily the growth can be treated by means of radium or its emanations. A tube containing this substance can be readily introduced into and retained in the cancerous stricture for as long a period as may seem advisable. Cancer of the oesophagus offers an ideal situation for the treatment by radium, particularly as it extends so slowly by means of glandular infection.

The cases of cancer of the oesophagus which are, perhaps, of most practical interest to the surgeon are those in which the disease affects a portion of the oesophagus in the neck. In such the surgeon occasionally performs operations of considerable magnitude, in which he generally leaves the patient in greater pain and much more uncomfortable than he was before the operation, or he opens the oesophagus below the growth, not affecting appreciably the rate of growth of the disease.

It seems to me that in most cases of cancer of the oesophagus in the neck one can follow the general principle of removing the growth in its entirety and yet leave the patient in a condition of comparative comfort after the operation.

I will now describe a case illustrating a method of treatment which is comparatively simple and not infrequently applicable in cancer affecting the oesophagus in the neck. Unfortunately, as the extreme upper limit of the oesophagus was involved in this particular case, the result was not as functionally perfect as it would have been if a segment of the upper portion of the normal oesophagus could have been left in which food and secretions could have collected free of the laryngeal aperture.

The principle of the operation is to excise the portion of the oesophagus affected by cancer together with any glands, keeping well away from the diseased area, and to replace the segment of oesophagus removed by means of a strip of skin cut transversely from the neck, and retaining an attachment and blood supply, the continuity of the oesophagus being completely restored. After an interval of sufficient length for the firm union of the skin oesophagus to the portion of the normal oesophagus at the lines of section, the attachment of the flap of skin by its base to the skin of the neck is divided, and any lateral aperture in the skin oesophagus which may remain is closed. Except when the growth involves the extreme upper limit of the oesophagus or invades the upper aperture of the larynx it would probably be possible to avoid performing tracheotomy. Till the edges of the skin oesophagus have united to those of the oesophagus, a tube for feeding purposes should be retained in position.

A. W., 30, married, came under my care on May 10th, 1909. She had for four months experienced increasing difficulty in swallowing, and this had progressed until she was only able to swallow a few drops of water. In consequence of this prolonged starvation she was very emaciated and feeble. She had a carcinoma of the upper limit of the oesophagus, which appeared to invade the back of the arytenoid muscle. Mr. Charters Symonds, whose experience of cancer of the oesophagus is probably unrivalled in England, confirmed my diagnosis. A fine

tube was passed through the stricture, and the patient was fed in this manner. As she increased rapidly in weight, while her general state of nutrition was very good, I operated on her on June 25th, 1909.

A skin flap, 2 in. deep and about 5 in. in length, was cut from the front of the neck, extending horizontally from a vertical line to the left of the larynx over the anterior and right lateral aspect of the neck. The flap was reflected up to its base. The larynx was displaced forwards and to the right, and the upper portion of the oesophagus for 3 in. of its length was freely exposed.

The growth, which was very dense, was found to involve the upper 2 in. of the oesophagus. There were two small shot-like infected glands; these were removed. The oesophagus was divided transversely above and below the growth, which was carefully dissected from the posterior surface of the larynx and from the arytenoid muscle, as the mucous membrane covering this structure was swollen and oedematous.

The flap of skin was then folded in the form of a tube of about the diameter of the oesophagus. Its upper margin was connected by multiple sutures to the lower limit of the pharynx, while its lower margin was sewn to the divided edge of the oesophagus. It was also attached to the larynx at the upper aperture. Owing to the fact that the patient was unable to swallow her saliva, it became necessary to perform tracheotomy a few hours after the operation. A tube was passed through the pharynx and the oesophagus, and through this she was fed.

After some weeks the tube was removed. It was then found that she was unable to swallow fluids, and that even her saliva dribbled from her mouth. The propinquity of the aperture of the larynx to that of the skin of the oesophagus and the fact of the skin of the oesophagus being attached to the upper aperture were apparently responsible for this. These circumstances also rendered it impossible for the patient to wear one of Symonds's funnel-shaped tubes.

As time went on she acquired the habit of swallowing her saliva, but remained permanently unable to obtain sufficient food by the natural passage. For this purpose she employed a tube, which was passed into the oesophagus over the small remaining area of attachment of the skin flap. Her general condition was good, and she was well nourished. For a considerable time there was no indication of any recurrence. Radium and x rays were employed at intervals with the object of obviating any return of the growth.

In spite of the precautions of an extensive operation and subsequent treatment by radium, an indurated mass appeared in the neck in the vicinity of the operation and discharged itself externally, leaving a sinus. Through this aperture, about the end of December, a sudden profuse hæmorrhage took place, resulting in the death of the patient.

The *post-mortem* examination showed that this growth had recurred in a small area in the left side of the neck, and that it had invaded the carotid artery, whose wall gave way in consequence. The area of oesophagus made by skin did not differ in appearance from the adjacent portion of normal oesophagus, with which it had become continuous. It is reasonable to suppose that if the primary growth had been removed at an earlier period the patient would probably not have had any recurrence; also that an oesophagus made of skin can perform the function of a normal oesophagus, providing it is not in too close proximity to the upper aperture of the larynx.

At a meeting of the Illuminating Engineering Society, to be held at the house of the Royal Society of Arts, John Street, Adelphi, on January 16th, a discussion on library lighting will be opened by Mr. J. Duff Brown (Islington Public Libraries) and Mr. S. L. Jast (Croydon Public Libraries). Professor S. P. Thompson, F.R.S., will take the chair at 8 p.m.

At a sessional meeting of the Royal Sanitary Institute to be held at the Town Hall, Bradford, on Friday, February 3rd, a discussion on school clinics will be opened by Dr. L. A. Williams, Medical Superintendent, Bradford Education Authority. Earlier in the day a visit will be paid to the open-air school, Thackley, and on Saturday morning visits will be paid to the school clinic and the municipal dairy at Heaton.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CALCIFICATION OF PLEURA AND EMPYEMA.

THE following case is a somewhat remarkable one and worth recording. Its etiology is very obscure.

John W., aged 59 years, was admitted to the hospital complaining of a "heat in the stomach" and headache. He looked ill and had a temperature of 102.6° and a pulse of 126. He had been in the hospital two weeks before with symptoms which were diagnosed as gastritis—namely, epigastric pain and vomiting, with furred tongue. It was then noted that there was wooden dullness in the left axilla, and this was ascribed to old thickened pleura, but there was no cough, nor history of chest trouble, nor any pain over the dull area. On admission, there was an elastic fluctuating swelling in the left axilla, and the glands and lymphatics above were enlarged. The patient first noticed the swelling the day before. The skin was not discoloured. The vocal resonance was almost absent and the breath sounds feeble all over the left axilla, but there were no adventitious sounds. The abscess was opened under local anaesthesia and 4 oz. of greenish pus evacuated. No micro-organisms were found on bacteriological examination. Two days after it was noticed that the left side was hardly moving; there was absolute dullness in the left axilla and no breath sounds. There was still no pain complained of and the discharge was moderate only. This state of affairs lasted for some considerable time, the temperature remaining normal for three weeks. Then there was swelling of the feet and frequency of micturition, but the urine contained no albumen. Then the temperature began to rise again at night (100° to 101° occasionally). The patient was averse to a general anaesthetic, but was at last persuaded. An incision was made, and the third and fourth ribs found to be necrosed. On cutting away the necrosed portions a discharging sinus was discovered, and on opening this hard, firm, calcified pleura was come upon. Three interspaces were examined, and the calcified pleura found to extend into each. The patient took the anaesthetic very badly; the breathing became bad and further operative procedure had to be abandoned. Six weeks afterwards a portion of the calcified pleura in the fourth space showed signs of yielding, and was removed without an anaesthetic. The visceral pleura could then be easily seen moving with the respiration and communicating the heart's impulse. It was covered with thick granulations. There was a constant discharge from this opening for a month. It came from above, between the lung and the bony casing of the pleura. This casing was about $\frac{1}{4}$ in. thick, and as difficult to drill as bone, but not quite so brittle. At the end of this time the patient was found to be going downhill, and although his condition did not warrant an attempt to remove the whole pleura, it was thought that if a wedge-shaped piece were cut out and two or more ribs resected, the hollow which existed between visceral and parietal pleura would fill up. An incision was accordingly made in the line of the old wound and extending upwards to the second space and downwards to the fifth space. Cross incisions were made above and below, and the flaps retracted. The flaps took everything down to the ribs. There was a good deal of fibrous tissue above and around the granulations, and it was difficult to remove this from the ribs. Considerable portions of the third, fourth, and fifth ribs were resected. The fourth and fifth were soft, and exuded pus when cut through with bone forceps. The enormously thickened and calcified pleura was cut into, and a portion the full length of the incision excised. It was $\frac{1}{2}$ in. thick by measurement. The flaps were sutured back in position with silkworm gut sutures. The wound healed well considering there were portions of it over which a purulent discharge was constantly passing, and he was out of bed in a week. Before the operation there had been swelling of wrists and ankles which, with the clubbed fingers, suggested the onset of pulmonary osteo-arthritis. This diminished considerably after the operation.