to be distributed to the corresponding aspect of the right lower pole.

2. The communication may arise as a branch from the sympathetic cord between the middle and inferior ganglia, in which case the ultimate distribution is the same as in the previous instance.

3. On the left side there may be several small filaments arising from the inferior and middle cervical ganglia, which pass inwards and downwards closely associated with the vertebral artery and reach the left recurrent nerve, when they are distributed both upwards and downwards in that nerve; those fibres passing towards the head may be partly traced into branches to the thyroid gland.

These communicating fibres to the recurrent laryngeal are indicated in the accompanying illustrations.

Pavlovsky has emphasized the importance of a group of fibres from the inferior cervical ganglion which reach the thyroid along the inferior thyroid arteries. Although in a few instances there were filaments from the middle ganglion accompanying this vessel they were not so constant and definite a feature as that described above.

The practical deduction to be made from the anatomical findings is the importance of extirpation of the middle and inferior cervico-ganglionic section of the sympathetic on at least one side—namely, that on which the thyroid changes are most pronounced. If partial denervation of the gland results in considerable mitigation of the symptoms, then it seems logical to suppose that a similar and still more complete procedure would be correspondingly more effective.

Further, it might be tentatively pointed out that since all the sympathetic supply to the thyroid passes out of the spinal cord at the level of the first and second dorsal segments and traverses the inferior ganglia, it follows that removal of the latter should be equivalent to removal of the entire three ganglia, and would obviate a more extensive operation.

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DELAYED CORNEAL ULCERATION FROM MUSTARD GAS.

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THE two following cases which have come under our notice seem sufficiently important to be placed on record, and this for two reasons: first, because of their intrinsic clinical interest, and secondly, because of their specific importance from the point of view of war pensions. One of us has seen both cases, and so is able to be sure of the essential similarity between them.

We wish to emphasize that these ulcers have features which are so characteristic as to render them almost pathognomonic, and there should be no fear, therefore, of false claims being made for pensions on account of ordinary corneal ulcers.

The history of the two cases is as follows.

CASE I.

A medical man was attacked by mustard gas in 1917, and is in receipt of a pension for defective sight of the left eye from corneal nebulae resulting from ulceration in 1922. The right cornea was unaffected until May 7th, 1928—that is, eleven years after the gassing. It then spontaneously became ulcerated at a point downwards and to the nasal side. The ulcer at first was small, but afterwards enlarged so as to involve more than one-third of the area of the cornea. From the first it was deep and crater-like at its centre, extending down to Descemet's membrane. For many weeks it seemed that it would perforate at this spot; but this did not happen, and it ultimately healed over. In the substance of the cornea were grey lines of infiltration radiating more or less from the borders of the ulcer; a small area only was stained by fluorescein.

On curetting, the surface epithelium of the cornea was found to be sodden and ill nourished for a considerable area around; it easily separated, leaving a large bare surface. The substantia propria was infiltrated in such a way as to produce a sort of cleft in its substance in a plane parallel with the surface. The ocular conjunctiva exhibited the appearance, to be referred to later, which is characteristic of these cases. (Fig. 1, C, Fig. 2, D.)

FIG. 1.

FIG. 2.

Some iritis developed, but it was very mild in degree, and caused no trouble; the left eye remained quiescent throughout. There was never any very acute reaction in the eye, and photophobia was less marked than would have occurred from an ordinary ulcer. The general appearance was that of a slowly spreading, very indolent ulcer, of which a small part only stained; corneal infiltration extended in advance of the ulceration, which gradually spread so as to invade the pupillary area, producing considerable defect of vision, which necessarily is permanent.

At the end of five months it seemed that the extension of the ulcer had stopped. The clear point where Descemet's membrane had been exposed was becoming healed and the excavation gradually filling in. This progress has continued up to date; repair, however, is even now, at the end of seven months, by no means complete.

CASE II.

A healthy man, aged 38, when first seen by one of us gave the following history. He had suffered badly from mustard gas burns in the usual parts of the body, including the eyes, in July, 1917;

he was invalided as a consequence, and written down as B 2. From that time to the present he has been bothered at intervals by bright lights, but otherwise has had no particular trouble until July, 1928, when both corneae developed small deep ulcers, which showed little staining with fluorescein. Since then his trouble has slowly progressed, until on November 22nd, 1928, the condition of the eyes was as follows.

Extending across the cornea of the right eye from side to side, and beyond it on each side, invading the sclera for a short distance, was a deep, gutter-like excavation of the corneal tissue (Fig. 2, C). The edges had a somewhat rolled appearance, and at the situation B, Fig. 2, were sodden-looking and stained on instilling fluorescein; the remaining area did not stain. Above the ulcer, in the situation A, Fig. 2, was a greyish, somewhat linear infiltration of the cornea, and at E were two small punched-out circular ulcers. The conjunctiva over the area D, Fig. 2, was opaque white, and marbled in appearance, as described later.

The condition of the left eye was in all essentials similar to the right, but ulceration was not so extensive. There was the same gutter-like excavation affecting the part of the cornea exposed in the palpebral fissure. It extended rather more than half-way across the cornea, and involved the adjoining corneo-scleral junction; a small spot only stained. The conjunctiva showed the same scarred appearance, and there was no intraocular involvement.

It may at once be stated that all the eyes had essentially similar features, though differing in detail, and were clearly similar to the case published by Mr. Humphrey Neame in the *Transactions of the Royal Society of Medicine* in November, 1928.

We may now examine the special features of these ulcers. First the intolerance of light is much less marked than might have been expected from the extent of the ulcer, and the circumcorneal injection of the eyes was less than would be present in other forms of corneal ulcer of similar dimensions in patients of this age. The ulcers themselves showed a marked tendency to involve the parts exposed in the palpebral aperture—that is, of course, the part originally exposed to the gas. They were deeply excavated, had a gouged-out appearance, and the tissue at the edge appeared sodden and ill nourished. They extended deeply into the substantia propria—so deeply, in fact, as to expose Descemet's membrane in Case i. They did not, however, perforate. In general appearance they reminded one a little of a Mooren's ulcer. The instillation of fluorescein did not produce extensive staining, but only showed up small spots or areas, chiefly at the edges.

From the shelving side of the ulcers infiltration could be seen extending into the adjoining cornea, and showed up as a grey area in it which had a linear arrangement (Fig. 1, D, Fig. 2, A). In one case iritis was present, but it was quite mild, and this in spite of the long persistence of the condition. In both of our cases, as well as in Neame's, one or two small localized, deep, nearly circular ulcers developed at the limbus (Figs. 1 and 2, E).

A marked feature of the ulcers was the long period, roughly ten years, between what clearly was their ultimate cause and their actual development; their extreme indolence; their situation in the palpebral aperture; their deep, gouged-out appearance; the comparatively mild symptoms; and their slow healing. The conjunctiva within the palpebral aperture has a very characteristic appearance, and even now is a good deal reminiscent of its appearance at the time of the gassing. It is somewhat swollen and in parts is almost of a homogeneous pearly white colour; in other parts, where it is less opaque, it has a marbled appearance, the "veining" effect being produced by the vessels, which in places show great irregularity in their calibre. It seems reasonable to suggest that it was the damage done to the vascular and nerve supply of the cornea by the gas, and the subsequent scarring, which has resulted in permanent impairment of the nutrition of the cornea and so to its ultimate ulceration.

With regard to treatment, we believe the most help is to be obtained from curetting any staining area, and cauterizing this small point very carefully with carbolic, or with the actual cautery. We have tried many other drugs without any clear advantage. We seriously contemplated sewing the lids together, and are inclined to believe, like Mr. Herbert Fisher, that this would prove valuable. We doubt whether any form of corneal section is advisable.

NINE CASES OF ERYTHEMA NODOSUM.

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DURING the winter of 1926 and spring of 1927 nine cases of erythema nodosum came under our notice in a busy country general practice. A short account of these cases may not be uninteresting as throwing some light upon the etiology of the condition.

Case 1.—A single woman, aged 23, first came under our notice with complete blindness in the right eye. She was sent to hospital to see a consultant, who reported to us that she was suffering from a retrobulbar neuritis of rheumatic origin. She was given salicylates internally and made a complete recovery in two months. She resumed her duties, but eight months later complained of pains in her limbs. On examination it was found that she had developed well-marked erythema nodosum, but had no signs or symptoms of rheumatism. Under our usual treatment—namely, sodium salicylate internally and liniment of methyl salicylate locally—she made a complete recovery within a fortnight.

Case 2.—We were called in to see this patient, a youth, aged 17, after he had been in bed with pyrexia for two days. For a further four days he remained feverish, but there was no other sign or symptom and a diagnosis could not be reached. The pyrexia did not respond to quinine treatment. On the seventh day of the fever he was given the following mixture every four hours.

Sod. salicyl.	...	...	...	...	...	gr. vij
Liq. ammon. acet.	...	...	...	...	...	3i
Spirit. chlorof.	...	...	...	...	...	ʒviij
Aq. camph.	...	...	...	...	ad	3ss

Twenty-four hours later his temperature started falling, and coincidentally with this erythema nodosum appeared on both legs, causing much local pain and tenderness. Local application of liniment of methyl salicylate relieved the pain and the patient made an uneventful recovery. Apart from some asthma and a nasal catarrhal condition this patient had always been well. His mother was also slightly asthmatic, but the rest of the family—father and two brothers—were very strong and healthy.

Case 3.—A farm labourer, aged 37, reported with typical erythema nodosum on both legs. He declared that he felt perfectly well, but the "lumps" on his legs were somewhat tender to pressure, and his legs generally ached. His temperature and pulse were normal. He was sent home to bed and given the usual antirheumatic treatment. The following day we were summoned urgently to see the patient, and found him with a temperature of 101°, a rapid pulse, and feeling very sorry for himself. He had been feverish all night. A thorough examination revealed nothing more than the nodules on the legs. Within a further twenty-four hours the temperature and pulse had returned to normal, the nodules became smaller, and the patient recovered. He has been perfectly well for the last two years. The patient had been a healthy man until this illness, but it is interesting that one sister has since come under our care for pulmonary tuberculosis and has recently been discharged from a sanatorium, and a brother was given three months' leave for a chronic cough and doubtful signs in the chest.

Case 4.—The patient was a schoolgirl, aged 15. We were called upon to visit her father, a farmer, aged 47, who had always been a particularly strong and healthy man, but for the previous week he had suffered from a short dry cough, marked shortness of breath, and some cyanosis. The diagnosis of rheumatic pleurisy with pericarditis was later verified by his response to treatment, and he made a complete recovery. Casually we were asked to look at the girl's legs because she had been complaining of pain in them since the previous day. She had well-marked nodules on both legs with some pyrexia and sweating. Under anti-rheumatic treatment she recovered rapidly.

Case 5.—This patient, a woman aged 42, consulted us for "painful lumps" in both legs, diagnosed as a typical erythema nodosum. The usual treatment was prescribed. Three days later we were summoned to see her as she was worse. To our surprise we found her legs were more tender and inflamed. On further inquiry it was discovered that the dispenser had given her a methyl soap liniment instead of liniment of methyl salicylate. She obtained immediate relief with the latter liniment, but it took three weeks before the nodules completely disappeared with the pain. It is interesting to note that about fifteen months previously we had attended her only son for acute rheumatic arthritis, and he had been under our treatment for three months.

Case 6.—A woman, aged 45, consulted us with erythema nodosum of both legs. She felt a little run down and out of sorts, and complained of tenderness of the legs, but her temperature was normal, and apart from well-defined nodules on her legs nothing abnormal was found on examination. She was placed on the ordinary treatment. She was seen twice again; on the first