have the care of the patient. These were Mr. X., a male servant, a lady companion, and myself. The others were strictly ordered not to enter the sick-room. The dirty linen found in the lady's trunk was immediately immersed in a solution of two per thousand of corrosive sublimate, and left there for several days. The faecal evacuations and vomited matters were received in vessels containing some of this same solution. They were afterwards transferred to another vessel, where they remained till the evening, when they were buried at a distance of two hundred steps from the house, in the meadow adjoining the lake. A certain amount of a five per cent. carbolic acid solution, and two per thousand corrosive sublimate solution, was at the disposal of those persons who were engaged with the patient, and they used them abundantly.

With reference to the intercourse with the village, the inhabitants of the villa were ordered not to go out of the grounds. The tradesmen delivered their goods at the gatekeeper's lodge, who transmitted them to the servants. The dwellers at the lodge were not allowed to enter the villa, and the tradespeople never passed the lodge.

Nobody but the physicians and a priest went in and out of the villa, and these persons never left without having washed themselves with a solution of corrosive sublimate, and being subjected to powerful chlorine-fumigations from chloride of lime, mixed with sulphuric acid. In order to be absolutely correct, it should be stated that a young girl, with less discipline than wisdom, who had been engaged on the first day by Mr. X., made her escape from the villa during the night to sleep at her mother's, who lived in an isolated house; she returned the next morning, and did not go out again.

A sick-nurse, engaged on the 29th, and the mother and brother of the patient, arrived from Paris on the 30th; and were admitted into the house, after having been warned that they would not be allowed to go out.

Death having taken place on the 30th, at two o'clock, the physician at the head of the sanitary department of the Geneva Government, Dr. Vincent, was informed of the occurrence by telegraph, and ordered the body to be buried at once; this was done at seven o'clock in the evening, allowing barely time to procure a coffin and dig out a pit.

The body, enveloped in the clothes and portions of the bedding which had been in contact with it, was watered with disinfectants, placed in an oak coffin, and carried to the cemetery in a funeral carriage. All the other objects which had been used during the patient's illness—bedding, crockery, curtains, linen—were watered with disinfectants, buried in a second pit, and covered with quicklime. All this was done under direct medical supervision.

After the body had been taken away, the room which the patient had occupied was thoroughly fumigated with chlorine. Moreover, several litres of carbolic acid were thrown into the privies. The next day, Dr. Vincent proceeded to disinfect minutely the furniture with several "siphons" of liquid sulphurous acid, according to Raoul Pictet's process; and, somewhat later, the walls were washed with a five per cent. solution of carbolic acid. All the dirty clothes of the family were immersed for several hours in a bath of carbolic acid before being sent to the wash.

In accordance with an order from Dr. Castella, sent by the Federal Council, the family were not allowed out of the villa until August 9th, or ten days after the lady's death. As, by that time, no other case of cholera had occurred, either in or outside the house, the inmates were at last set at liberty.

Such were the measures taken to prevent the extension of the disease. I have no more to do than to wish for my brethren cases where precautionary measures are so obvious as to their nature, and so easy to carry out.

REMARKS BY DR. MARCET.—I happened to be staying close to the village of Versoix this summer, when the case, so well managed by Dr. David, took place. This village consists of two rows of houses, with the high road between them. It is a singular fact that Napoleon the 1st had intended to make Versoix into a large town, and had constructed a spacious harbour for it, but his views in this respect were never carried out. The village remains divided into two portions along the lake, which were clearly intended to have been joined, and form the nucleus of the town. It is certainly not a clean village, and there are abundance of smells in the houses and shops; no doubt, the pabulum was there for an epidemic of cholera, if an opportunity offered. It cannot, therefore, be said that external circumstances were unfavourable to the disease spreading; and most probably, but for Dr. David's prompt and energetic measures, the disease would have broken out in the village.

I have a case in point, illustrating the effect of the neglect of precautionary measures towards checking the spread of cholera.

In October 1866, I happened to be staying near the village of

Nirnier, of perhaps five or six hundred inhabitants, situated on the Savoy coast of the lake of Geneva. One evening I remained some time in conversation with a man I was employing, and who appeared to me then in perfect health. This man, after leaving me, went to sleep at Nirnier. Next morning, I was informed that he was very ill, and I went to Nirnier to see him. I found him in a state of collapse, and it was at once clear to me that he had cholera; he died that same day about five o'clock. The story told at the time, and in which I believe, although I cannot find confirmation now, was that the man had eaten supper that same evening in company with a person who had left Marseilles on account of the cholera, and that this person had gone away early the following morning, without leaving any trace of his whereabouts.

I warned the mayor of the village at the time, and tried to convince him of the importance of removing the dunghills in the streets, whitewashing the houses, and using chloride of lime abundantly, but my warning was of no avail. There spread at once a report that the man had died poisoned of an overdose of certain pills he was then taking, and not of cholera. Two or three days later, an epidemic of cholera broke out in the village, and within about three weeks there were eleven fatal cases. The epidemic then suddenly ceased.

I made inquiries this last summer at Nirnier with reference to the cholera of 1866. Many have a very distinct recollection of it, and I obtained minute details from some women, such as the names of those who had died. The history of the epidemic having been imported from Marseilles is, however, ignored or disbelieved; and, unfortunately, the people who kept the publichouse where my man had had supper after leaving me, are either dead or have disappeared. It is believed to this very day at Nirnier that the person stated as suffering from cholera died of poison, and nobody knows, or seems to care to know, how the cholera had been introduced.

DOES THE POSITION OF THE SECTION IN CATARACT-OPERATIONS INFLUENCE SUPPURATION OF THE CORNEA; AND, IF SO, WHAT PART IS PLAYED BY SEPTIC INFECTION?

Introduction to a Discussion in the Section of Ophthalmology at the Fifty-Second Annual Meeting of the British Medical Association.

By J. R. WOLFE, M.D., GLASGOW.

I HAVE selected this subject on which to initiate a discussion because my views, which I shall thus have an opportunity of stating, differ in many respects from those generally adopted, and because it will be a satisfaction to me to ascertain how far my experience coincides with that of other members of the Section.

In the first place, then, there is the question, how far the position of the corneal section in cataract-operations contributes towards suppuration of the flap.

This is a subject which I have carefully studied for upwards of twenty years, watching the results of not only my own operations for cataract, but also those of reputed surgeons in this and other countries. During this period, the number of my operations in which corneal section has been made, is, as far as I have been able to collect, idiopathic, 545, traumatic, 430, total 975. As in all these I have had only four cases of primary suppuration of the cornea, I infer that the position of the corneal section cannot be regarded as a factor in the suppurating process.

At the very commencement of my career, I was impressed with the conviction, which I recorded at the time, that in the cornea we have a membrane almost resembling cartilage in respect of its slight tendency to proliferation. The case then referred to was that of an old lady upwards of 80 years of age, upon whom I successfully operated for cataract by flap-extraction; although, during the treatment, her foot began to show symptoms of gangrene, to which she ultimately succumbed, the corneal wound healed by first intention. The conviction just mentioned has since then been confirmed in the course of my labours at transplantation of the cornea, in which corneal and conjunctival bands are removed from the eye of one person to that of another. We see this also in our daily experience in removing iron splinters from deep layers of the cornea, we notice how, if the splinters be clean and free from rust, the cornea heals without cicatrization. When, for opening the lens-capsule, or for evacuating the aqueous humour, you pierce the cornea with a needle or with a lance, no trace of the entrance of the instrument remains visible after the lapse of a few minutes. Indeed, we shall best be able to repair lesions, whether produced by trau-

mattism or by pathological processes, if we carefully watch how nature effects her remedies.

I have recently had two cases which illustrate this point. In the first, a young man, aged 19, was admitted to the Glasgow Ophthalmic Institution, his eye having been lacerated by a piece of iron through the greater part of the cornea, nearly at its horizontal meridian. The eye recovered, with an adhesion of the iris, and leucoma involving more than the lower half of the cornea, but is otherwise reparable.

Another young man, employed in a ship-building yard at Newcastle, was brought, in June 1884, to the Institution. A piece of iron had struck the centre of the cornea and penetrated partly into the lens. The foreign body had been extracted immediately on occurrence of the accident, but suppuration had set in, and the eye had to be removed.

These cases illustrate a general principle that the cornea may undergo a great deal of injury and yet easily recover, but that injury to the cornea, when complicated with that of other structures, proves disastrous.

These facts all seem to point to the conclusion that we must seek elsewhere the cause of suppuration of the cornea in extraction of cataract than in the cornea itself; namely, in the deeper structures. Suppuration takes place when, during the removal of the lens, violence has been done to the iris and ciliary body. So, also, when fragments of the lens have been left in the interior of the eye, these, acting like foreign bodies, give rise to inflammation, which, beginning in the iris, ciliary circle, and vitreous body, proceeds to suppuration, and then the cornea participates in the suppurative process.

I remember when we used to operate by Daviel's method, and were accustomed to boast of the charming results produced by it. There was no talk then of corneal suppuration. In the years 1859 and 1860 I attended the clinique of M. Desmarres, a man of great originality and dexterity, who revolutionised ophthalmic science, and to whom we are indebted for a great many modern improvements. In his *clinique* of that period, we had about 200 extractions of cataract, and I cannot remember a single case of primary suppuration of the cornea. It is only since the scooping out of the lens and the squeezing with instruments have been adopted, that we have begun to hear of suppuration of the cornea.

Von Gräfe, a man of genius, an illustrious pupil of M. Desmarres, whose teaching he utilised, enriched ophthalmology by his own inherent ingenuity also; but his operation for cataract, I regret to say, has not been an advance. When he first published his operation in 1865, it was somewhat rudely criticised by Professor Hasner, of Prague. I then disapproved of the attack, but, on looking back now to subsequent events, I think Hasner's criticism by no means too severe. Everybody has been practising Gräfe's operation for cataract. A linear incision is made at the extreme periphery of the cornea, and the lens is violently squeezed out with a gutta-percha spoon. What can you expect but that, in many cases, the nucleus passes through, leaving behind large cortical masses, which set up mischief by the third or fourth day after the operation, not to mention loss of vitreous humour and other mishaps to which the procedure is liable?

Then we make the cornea the scapegoat. I am sure that, if von Gräfe had been spared a few years longer, he would have withdrawn or modified the operation which bears his name. As a rule, it is better to terminate the corneal section at the conjunctival limbus, for then the lens can slide out without a hitch; but when the vitreous body is soft, the incision should terminate within the cornea. The corneal bridge is, in such cases, more conveniently divided with a pair of scissors, without any dragging upon the wound.

It will not be out of place here to refer to another point connected with extraction of cataract. I refer, namely, to the preparatory iridectomy, performed a fortnight or so before the extraction of the lens. This was first suggested by Mooren as an adjuvant to Daviel's method. I have shown, however, that, with preliminary iridectomy, we can limit the corneal incision to a curve extending little more than the third part of the corneal circumference, thus avoiding many of the risks to which Daviel's method is exposed, and so making it applicable to cases, even in which the flap-operation is contraindicated. My views have been before the profession for the last sixteen years; they have also recently been brought forward at the meeting at Cork, and published in my work on *Diseases and Injuries of the Eye*, 1882, and I have the great satisfaction of finding that some men of standing in our profession have now adopted my method.

The late Mr. Critchett, whose death is a great loss to our circle of earnest workers, told me that, in difficult cases in which he was very anxious to ensure success, he resorted to my method; and I know that he carried it out successfully in cases in which one eye had already been lost under a different operative plan. Professor Hirschberg, who spoke in high terms of my operation, which he has seen practised at

my clinic, has lately applied it successfully in a case of diabetic cataract. And so, after the lapse of sixteen years, some members of the profession have come round to my views.

Now, after dealing at such great length with what I consider to be the real cause of corneal suppuration, you will be prepared to hear my views on septic agencies.

Antisepticism, when applied to operations of the eye, I consider altogether out of place, another scapegoat for defective methods. When the lids are closed, the eye is placed within a shut cavity, which is inaccessible to septic agents. Irritating appliances during an operation can only do harm; and, when I see ophthalmic surgeons taking their instruments for operation out of carbolic solution, I look upon it as an artistic mistake. In short, I think it more in conformity with scientific principles if, instead of going in search of causes of corneal suppuration, we try to eliminate the failures which are staring us in the face.

In confirmation of the safety of my operative procedure to the most critical cases of local and constitutional complications, I will show you a patient, far advanced and emaciated from diabetes, on whom I operated for cataract a fortnight ago. I have terminated the section in the cornea, owing to the extreme softening of all the ocular tissues, and you will satisfy yourselves of the satisfactory result of the operation.

Dr. EMRYS-JONES (Manchester) said that, while he must speak deferentially of Dr. Wolfe's experience, he could not accept his conclusion that his particular method of operation was a panacea against all ills. His experience, from what he observed in his own and the extensive practice of his colleagues at the Manchester Eye Hospital, was that the modified Gräfean extraction was followed by as good results as he had ever noticed. He thought Dr. Wolfe appeared as an advocate of a particular operation, and exaggerated the defects of every other; and he (Dr. Emrys-Jones) was surprised to hear antiseptic precautions spoken of disparagingly, as he believed, thoroughly, that suppuration of the cornea was always caused by septic mischief.

Dr. EDWYN ANDREW (Shrewsbury) said that suppuration of the cornea in cataract-operations was more due to the general condition of the patient, than to the position of the section. In his country practice, suppuration had generally been the result of bad feeding in persons such as labourers' wives, who lived chiefly on a little bacon, tea, and bread. By feeding up such persons, a second operation would often succeed, where the first at once failed.

Mr. J. B. STORY (Dublin) stated that, in his opinion, the position of the corneal section had no influence whatsoever in the occurrence of suppuration after cataract-operations. A clean cut, whether in the cornea or in the sclerotic, healed up without suppuration, provided no septic infection took place at the time of operation, or afterwards, before the wound healed. It was only when a flap was made so large, and with so narrow a base, that the nutrition of its apex became defective, that the position of the section could be said to produce suppuration. But no one now made this kind of flap. Of course, such bad practice as bruising the ocular tissues, which Dr. Wolfe seemed to consider the ordinary custom of the operators who adopted von Gräfe's linear extraction, would produce suppuration, or sloughing, at all events, of the edges of the wound, whether corneal or scleral; but it was obvious that the position of the section had nothing to do with this disaster.

Mr. G. E. WALKER (Liverpool) said there were causes which influenced suppuration of the globe other than mere local causes, such as squeezing out the lens, or rough usage by scoops, etc. He described cases in which the entrance of sewer-gas into hospital-wards was indisputably the cause of the suppuration; for its prevention was followed by an immediate cessation of the fatality; and, in some cases, treated in a general hospital, the sending home of the patients was at once followed by cessation of the suppuration of the cornea; the remainder of the cornea remaining clear, although, of course, all useful sight was destroyed.

Dr. WOLFE, in reply, said that he was very much gratified that his remarks had given rise to an interesting discussion. If a linear section were made at the extreme corneal periphery, the depression of the lens could not be effected without violent pressure. In most cases of loss, it would be found that the inflammation began in the iris, and that it had been caused by fragments of lens left behind. If this important fact were impressed upon labourers in ophthalmic surgery, the discussion would have served an important purpose.

THE Middlesborough Town Council have, on the recommendation of the Watch Committee, increased the salary of Dr. McCuaig, as Medical Officer to the Police Force, to £80 per annum.