rheumatic, and which is due to exposure to cold. It seems, therefore, to be reasonable to assume that in these cases there is a localized fibrositis either in the nerve or round it, and that the precise position of the lesion may be the determining cause of the particular symptoms found in the case.

The prognosis seems to be distinctly favourable.

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SIDEROSIS*

BY

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SIDEROSIS may be defined as a coloration of the eye by fine rust particles in suspension or solution in the fluids of the eye, and associated with a consequent mild but advancing inflammatory state of the uveal tract and gradual destruction of sight unless the particle of steel can be removed before the inflammatory process has advanced too far.

In a paper on the use of the Giant Magnet I contended that small particles of steel in the outside coats of the eye, not in connection with the fluids of the eye, might lie dormant and without causing irritation, because they were not apt to rust while they remained comparatively dry. But that particles of steel bathed in the fluids of the eye, especially if in the direct course of intraocular circulation were certain sooner or later to give rise to irritation because they were sure to rust, and siderosis would consequently result with its serious consequences. It is possible and perhaps even likely that those in the outer coats will also eventually cause trouble.

It has appeared to me that if this contention can be sustained it will mean that many small iron or steel fragments in the brain and other parts of the body which gave rise to few or no symptoms at first may be supposed to cause much irritation later on, perhaps after two or three years, and that wounds supposed to have become quiescent may ultimately prove most serious. I have myself had examples of small particles of steel in a lens whose capsule had closed as soon as the particle had been admitted, which, quiescent

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at first, perhaps for a year or more, gradually caused opacity, and coloration of the opaque lens, and then irritation from an extension of the siderosis beyond the lens to the neighbouring tissues of the eye.

In each case the irritation subsided when the lens and its piece of steel were removed.

In the case of a piece of steel in the lens it must be admitted that in no part of the eye except in the sclerotic could it be more removed from the fluids of the eye.

I have had an example of a small piece of steel in the retina lying dormant, and the eye thought to be uninjured for nearly 18 months, and then of siderosis gradually developing, and being quite noticeable after 18 months, with sight diminished to 6/12 partly, because of haziness of the media. I removed this piece of steel by a giant magnet without injuring the lens, with persistence of V. 6/18 for 3 months, and even improvement to 6/12, to be followed by gradual general hardening and flattening of the lens, at first without increasing opacity, but with marked increasing hypermetropia, up to 4 dioptries; gaining with this correction 6/12; but followed then by gradual general opacity of the lens, and loss of sight, until the lens was removed. (This case was shown to the Section.)

(1) Lieut. A. Aged 22.

Seen April, 1918. Eighteen months after being badly wounded in the back, complained of declining vision for three months, and of change of colour of left eye. No history of injury to the eye. Distinct siderosis noted. Bright siderotic spots were seen on anterior lens capsule under cover of the edge of the iris, forming a ring. A very fine general haziness surrounded the lens. In an area of injured retina a foreign body was seen towards periphery of fundus below the disc. Vision 6/18 partly. I removed a piece of steel, 2.4 milligrammes, from the retina. Adhesion of iris to lens prevented it from coming through the pupil. It was pulled through the iris near its periphery by the giant magnet, when pulled out of the corneal wound drew the radiate strip of iris with it, the pupillary end of the strip being attached to the lens. Vision improved to 6/18, and gradually to 6/12 for four months. But the lens gradually became flatter as evidenced by increasing hypermetropia to 4 dioptries. Then the lens became opaque. It has been made to dissolve, but there is still a fine siderotic membrane, and vision is only 6/60 as yet. I expect to get good vision.

I have removed a small piece of steel from the vitreous or retina of a siderotic eye with an opaque siderotic lens two years after it had entered the eye, although the patient denied the possibility when I told him that the eye contained a piece of steel. The

lens was subsequently removed with resulting good vision 6/18, to be further improved by a needling. (Also shown to the Section. Subsequent vision 6/9.)

I have removed many minute pieces of steel from the cornea and sclerotic of a returned soldier 30 months after they had lodged there, because they had started to cause siderosis around each particle. (Also shown to the Section.)

(2) W. Aged 31. Consulted me May, 1919.

History that the eye had been hit by a piece of putty two years before. Sight bad for last few months; only perception of light now. There was marked general siderosis and rust stained opaque lens, as also a small spot in iris which looked like a hole in it. I assured him that the eye contained a piece of steel; probably in its fundus. Vision—perception of light.

Minute piece of steel was brought forward and through the pupil by giant magnet, after several applications, but at the first sitting; then removed from the anterior chamber. Lens subsequently removed through ordinary cataract incision. Corrected vision 6/18. A fine wrinkled membrane remained in the pupil and fine vitreous opacities. This illustrates that probably siderosis loosened the piece of steel and made it more easy to dislodge. Failure to remove it would have meant gradual destruction of the eye. Needling of fine membrane will probably result in 6/9 of vision. Note fine hole in iris through which foreign body passed after entering the eye. (Later: Vision 6/9 after needling.)

I had a case at Lemnos, who was brought from Gallipoli with one eye so damaged that I had to remove it next day; the cornea of the other eye contained several minute white foreign bodies subsequently extracted: probably particles of the explosive. Two fingers of his right hand had been amputated at Gallipoli, he had several pieces of steel in his other hand, and a large piece in the eyebrow of the eye which had not to be removed and which ultimately obtained 6/6 of vision. He did not then complain of his throat, perhaps because there was so much else to call attention to, but there was no alteration in his voice.

Two years afterwards in Brisbane the piece of steel was removed from his brow, and the two pieces from the palm of his otherwise uninjured hand, and a piece from under the skin over the carotid vessels in his neck. These had then begun to cause a little irritation and discomfort. Still no throat trouble at all.

Fully three years after injury he began to cough up blood first, and then to have great irritation in his larynx. Dr. Robinson, under whose care he came, had detected by X-rays a large piece of steel behind his cricoid cartilage, and was able to extract it. Unfortunately it had set up so much irritation that the man may be unable to do without a tracheotomy tube. Why did this piece

of steel only begin to obtrude itself and irritate more than three years after it became lodged at the back of the larynx?

When at Lemnos, and when I removed the piece from his brow two years later in Brisbane, he did not even complain of his throat or have any throat symptoms. Surely the irritation began when the steel rusted and the rust particles became dissolved in the surrounding tissues. When at Lemnos I asked him how he got his wounds, he told me that he was carrying up some bombs to the front trenches and that one of them burst. On my exclaiming, "It's hard lines to be injured by one of your own bombs," he replied, "Oh, I don't know—I've '*done for*' a lot of Turks with those bombs." No wonder our men did so well when that was their attitude!

It appears to me that the lessons from these cases are two-fold. First, that pieces of steel near vital tissues should not be left if they can be extracted. Second, that if it proves impossible to remove a piece of steel from the fundus with a giant magnet soon after the injury, the best time, of course, a further attempt should be made when siderosis supervenes, because the onset of siderosis probably loosens the piece of steel in its bed and makes it more likely to move forward when the giant magnet is applied. The cases referred to, indeed, suggest this conclusion.

Is it not possible that a giant magnet may prove of use to remove small, otherwise inaccessible, pieces from the brain through a trephine wound?

OPHTHALMOMYIASIS

BY

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OPHTHALMOMYIASIS is the name used to describe the several symptoms caused in the eye and its annexes by the larvae of diptera. According to the place in which they are found we can distinguish (C. Behr) between an external ophthalmomyiasis when the larvae are found in the lids, lacrimal sac and conjunctiva, i.e., outside the eyeball, and an internal ophthalmomyiasis when the globe has been penetrated. The latter group may be further subdivided into an anterior and a posterior internal ophthalmomyiasis; in the former the larvae have not penetrated beyond the anterior chamber, but have done so in the latter.

The disease is said to be common on the shores of Mexico, Peru, Chili, and, according to reports from Dr. Kuznezow and