

I suppose we all agree that a monocle should only be allowed if one eye is blind, or partially so.

As the discussion is limited to the errors of refraction, I do not propose to refer to heterophoria except to say that my experience has been, when the error was properly corrected, the heterophoria, if small in amount, tends to disappear.

And one last word as to treatment. I am certain that the refraction of the eye is constantly changing, that is, from year to year, even in older patients—and that a fresh examination should constantly be made. My experience is that in young patients the error tends to disappear if properly corrected. On the other hand, I have noticed that as life advances, astigmatism, previously absent, sometimes appears, or tends to increase. Perhaps you will tell us your experience on this head.

I feel sure also we should never do our work on a stereotyped plan—the personal element enters so largely into every medical case. Experience teaches us that what may be a perfect treatment for one, is useless for another. One thing I am sure of, and that is, that we have reached nearer an *exact science* in refraction work than in any other department of medicine, and that, if we do this work conscientiously and carefully, we are more likely to benefit the human race than by tons of physic!

Well, gentlemen, with my colleague, Col. Elliot, I have tried to indicate the various ways in which you can acquaint us with your experiences. There are many points which the exigencies of time do not allow me to enumerate, but which some of you will probably tackle; and I feel sure that our united knowledge and experience will certainly help those who come after us.

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### THREE MAGNET CASES WITH SOME UNUSUAL FEATURES

BY

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THE following three cases were admitted to the Royal London Ophthalmic Hospital, while I was house-surgeon there in 1916-17, under the care respectively of Mr. E. Treacher Collins and Mr. P. Flemming. They have been kind enough to give me permission to record the following facts, which I think may be of some interest to ophthalmic surgeons.

*Case 1.*—F. S. was admitted on November 8, 1916, with the history that the same afternoon he was hitting a piece of steel with a hammer when something flew into his right eye. On admission,

it was noted that the margin of the lower lid was cut near its centre, and that there was a small wound of the lower part of the cornea, but that the anterior chamber was deep and full. There was also a large hole in the lower half of the iris corresponding to the corneal wound, and some lens opacity and exudate in the vitreous below. The Haab magnet was thoroughly tried both on November 8 and 9 with negative result. On November 10 a skiagram showed the presence of a large foreign body 20 mm. deep to centre of cornea, 7 mm. below and 11 mm. to temporal side. This showed that the foreign body was definitely outside the eye. On November 11 the Haab magnet was again applied by me as far back as possible on the temporal side of the globe rather below the horizontal plane. The foreign body came forward (presumably beneath Tenon's capsule) and after I had opened Tenon's capsule under a conjunctival flap I pulled out with the Haab a large piece of iron. When the patient was discharged on November 22 the state of the right eye was as follows: An anterior synechia to corneal scar below; the pupil well dilated; dense posterior cortical lens opacity; large mobile opacity in vitreous; no view of fundus; dull red reflex; tension normal; vision=fingers at two feet; projection good.

When he last attended as an out-patient on January 11, 1917, the right eye was quiet and the vision was only 1/60 owing to the posterior polar opacity, but some details of the fundus could be seen. I have written to him since but can get no reply.

*Case 2.*—A rather similar case was that of W. I., admitted under Mr. Collins on February 25, 1917. In this case a piece of steel entered the right eye at the corneo-scleral junction above, slightly cutting the margin of the upper lid; and, after passing through the globe, it was shown by a skiagram to be lying about 6 mm. behind the globe at the back of the orbit. Three attempts were made with the Mellinger magnet to move the foreign body, but without result. The vitreous was still full of blood when the patient was discharged on March 13, and vision was only perception of light. He returned again on March 24 with ciliary injection and a few spots of "keratitis punctata" in the right eye; so it was excised on March 26. On dividing the eye I found a definite hole of exit situated about 5 mm. on the temporal side of, and 2 mm. above, the optic disc. Viewed from inside the eye, the opening was filled by a curtain of organized inflammatory vitreous tucked into it like a handkerchief into a ring; while viewed from outside, the opening was covered by a piece of rusty iron adherent to the globe and embedded in a mass of organised blood-clot at this point. The curtain of inflammatory tissue inside the eye stretched forward to the lens which was still surrounded by blood-clot. The fact that I found the foreign body adherent to the back of the eye does not prove, I think, that the localisation with the X-rays was incorrect. It is quite possible that

the attempt to remove the foreign body with the magnet, brought it forward against the back of the globe where it got entangled in blood-clot. Unfortunately, another skiagram was not taken which might have shown this. However, there can be no doubt, I think, that another skiagram would have shown that the foreign body moved with the globe, seeing that, though it was outside the eye, it was adherent to the sclerotic at the back.

Both these cases illustrate the fact that a foreign body may sometimes strike an eye with sufficient force to pass through the globe and perforate the sclerotic at the back. And, while in most cases removal of the foreign body from the orbit is likely to be impossible, the first case shows that, rarely, a strong magnet may succeed in drawing a piece of iron forward under Tenon's capsule.

*Case 3.*—A.W.R. was admitted on February 20, 1917, under the care of Mr. Flemming. He gave the history that on January 17, 1917, he was screw-cutting a shell when something struck his left eye. He went to his panel doctor, who said he took something out of his eye, and he went back to work the same night. Fairly soon the sight of the left eye gradually began to go. On admission, the left eye was quiet; no injection, cornea clear except for a linear scar half-way between the centre and limbus on the nasal side. Corresponding to this, the uveal pigment at the margin of the pupil was a little deficient, and a lump of pigment was adherent to the lens capsule, but the pupil was fully active and there was no posterior synechia. The lens was only semi-opaque, so that inside it near the posterior pole at about "7.30 o'clock" could be seen a definite shining particle. Vision was equal to counting fingers at two feet.

On March 9, 1917, the Mellinger magnet was used and at once brought the foreign body forward, but it could not escape at first through the lens-capsule and it revolved round and round in the semi-fluid lens matter in response to the magnetised rod, giving exactly the impression that the lens itself was rotating. After about a minute it found the hole of entry in the capsule and escaped into the anterior chamber, whence it was extracted through a keratome incision at the limbus above. The eye healed up without any hindrance and the further progress of the case was as follows.—March 13, needling of left lens; March 16, curette evacuation; March 21, discharged with a perfectly quiet eye, pupil round and well dilated with atropin, fundus details well seen and normal, vision with  $\frac{+12 \text{ D. Sph.}}{+1 \text{ D. Cyl. ax. hor.}} = 6/18$  and with + 4 D. Sph. added he read J.4. April 16, readmitted, thin filmy capsule partially blocking pupil; April 17, needling of capsule; April 20, discharged, vision with  $\frac{+11.5 \text{ D. Sph.}}{+2 \text{ D. Cyl. Ax. } 25^\circ \text{ in}} = 6/9$  partly.

This case is interesting, I think, because it illustrates *first*, the

difficulty which a foreign body inside the lens may have in escaping through the capsule; *secondly*, the production in consequence of an apparent rotation of the lens; and *thirdly*, the rapidity with which sight may be restored after a traumatic cataract.

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## TRANSLATION

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### RECONSTITUTION OF THE LOWER CUL-DE-SAC BY CUTANEOUS AUTOPLASTY\*

BY

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PENETRATING wounds of the orbit by war projectiles often provoke extensive destruction of the conjunctiva. The eye bursts, empties itself more or less completely of its contents, and is, as it were, reduced to pulp. Enucleation of the remaining stump is rendered very difficult.

The conjunctiva, torn in many places, cicatrizes irregularly, while leading to contractions which often entail the almost total disappearance of the lower *cul-de-sac*. The introduction and the keeping in place of an artificial eye are then impossible.

In recent cases the introduction of a porcelain shell, pierced by a central hole which permits of the escape of the conjunctival secretions, guides the conjunctiva in its cicatrization, and makes the ultimate wearing of an artificial eye possible.

In long standing cases we have employed paraffin spheres of increasing size; the distension produced by them lengthens the cicatricial bands and enlarges the cavity. Under these circumstances it may be possible to introduce an appropriate prosthesis. But in certain cases the retraction is such that the inferior *cul-de-sac* has completely disappeared. Progressive dilatation is inefficacious, and surgical means alone are likely to be of use. When the conjunctiva is absent it is necessary to employ a graft.

Different kinds of graft have been described, as, for example, the hetero-conjunctival graft with conjunctiva from the rabbit or the dog, the dermo-epidermic graft of Thiersch, the graft of buccal mucous membrane, the graft of vaginal mucous membrane, and the graft of frog's skin.

Several methods of cutaneous autoplasty are described in the *Encyclopédie française d'ophtalmologie*: the operations of Dieffenbach, Snellen, Harlan, Rogman, and Samelsohn.

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\* Translated from *Ann. d'Ocul.*, February, 1916.