

the same foreign body in the same place. It had not entered the globe at all but had passed between the conjunctiva and sclera and lodged in the orbital tissues immediately adjoining the globe.

The roentgenologist of the Manhattan, Eye, Ear and Throat Hospital willingly told me how to avoid a like tragedy in future: Suppose the exposure for the picture is ten seconds. For the first five, have the patient look straight out, then have him change the direction of the visual axis by rolling the eye up as much as possible and complete the exposure. Make another exposure but do not move the eye. If the foreign body is in the globe, the X-ray will show either two bodies or an extension in the direction of the movement of the opacity as compared with the latter picture. When the foreign body is in the orbit or adjacent tissues its position is not affected by any movement the eye will make. There is, however, a slight possibility of error when the foreign body is in an external ocular muscle or tendon. Then it will show some displacement but a careful reading of the picture will discover the true meaning.

CASE III.

Late in the spring of 1918, a boy of twenty was hit in the left eye by a small piece of gunmetal. It penetrated the cornea, iris, lens; and the X-ray showed it as if in the posterior capsule of the latter. The following day the lens was extracted in the hope of removing, with it, the gunmetal. Another picture showed the gunmetal in the original position. A month later an effort was made to remove the foreign body by washing the anterior chamber, using considerable force, but with no better result. The eye recovered so that in a few days it was quiet.

The patient and his father were advised that the safety of the right eye lay only in removing the injured one. They did not take kindly to this advice and consulted another oculist, who took charge of the case. The latter found a nasal sinusitis, treated it and also operated on the eye, with what he

believed a very happy result. Two and a half months after the accident the young man was about to be discharged from the hospital when the right eye became inflamed. Prompt enucleation of the exciting eye had no beneficial effect whatever. Notwithstanding the best hospital care and the most approved energetic therapeutic measures, the vision in the right eye dropped to bare light perception, and so remains.

A considerable experience with foreign body cases has convinced the writer that among the very worst are these where copper and its alloys enter within the globe. Failure of prompt removal of the foreign body should at once be followed by enucleation if disaster is to be averted and a tragic ending avoided. Should one be tempted to gamble with fate, or from any motive fail to sacrifice an eye that is, or almost probably will be blind, the associated memories that persist in hovering about such a case are certainly not pleasurable, whatever profit they may give as experience.

CONVERGENCE INSUFFICIENCY AS IT AFFECTS THE RE- TURNED SOLDIER.

C. E. HILL, M. B.

TORONTO, CANADA.

Men entering the American and Canadian armies were, perforce, examined rapidly in so far as an ocular examination was concerned. This, I infer, would be more noticeable in the Canadian than in the American army, as the call for men was so urgent in 1914 that many men with poor vision slipped thru; and it is needless to say that practically no man was examined for the refined errors of refraction, muscular imbalance and the allied ocular troubles, provided each eye separately had vision equal to the then existing standard. These men, who have been living under new conditions and working in the varied theaters of the war and in all branches of the service, are now returning, and are receiving a thoro examination at the demobiliza-

tion centers before returning to civil life; and it behooves the oculists to see that these so-called minor, but nevertheless very troublesome conditions be recognized and treated accordingly.

In the examination of many hundreds of returned men my attention has been called to the oft repeated complaint, viz.: "I can only do near work, such as reading and writing, for a very short time when suddenly my vision becomes blurred and the lines seem to run together." Following the teaching of Dr. Alexander Duane, I hurriedly ran these men thru the various tests for convergence insufficiency, viz.:

First. Near point of convergence denoted by Dr. Duane as P. C. B.

Second. Screen test for near and far, parallax taken at the same time.

Third. Prism converging power.

Fourth. Prism diverging power.

Fifth. Testing the eyes in the various positions covering one eye then the other.

A. In the primary position at eighteen inches.

B. Eyes looking up and to the right.

C. Eyes looking up and to the left.

D. Eyes looking up in the median line.

E. Eyes looking down in the median line.

F. Eyes looking down and to the right.

G. Eyes looking down and to the left.

H. Eyes looking to the right.

I. Eyes looking to the left.

These tests are rapidly done and they show at a glance if it is a muscular or an associated movement anomaly.

The following is the average of the results obtained:

P. C. B. 100 mm. or over, many running as high as 200 mm.

Slight exophoria or orthophoria for distance and around 10° to 14° prism diopters of exophoria for near.

Prism converging power of 14 prism diopters.

Prism diverging power of 2 or 3 prism diopters.

Diplopia often found at 200 mm. from the base line.

Muscular balance normal in each eye.

Practically all of these cases had normal vision, or 20/30 vision.

All branches of the service were represented in this class with aviation the chief offender. Care was taken to ask pointed questions as to eye troubles or eye strain prior to entering the army, and invariably the answers were that they never knew what eye troubles were till they returned from the front. Considering that most of these men have previously held office positions and are now complaining greatly because of near work, it would seem conclusive evidence that this condition arose while in the service.

This brings me to the reason for writing this paper, viz.: What compensation should these men receive, and what is the best method of treatment? Basing compensation for the loss of one eye at 45 per cent., the question arises, is a man with one eye more handicapped than a man with two which cannot be used for prolonged near work? As most of these conditions are expected to improve under treatment, nevertheless during such time as he is forced to do work less exacting than his former occupation, with usually less financial remuneration, he should be allowed liberal compensation, which can be adjusted on the half-yearly plan and permanently cut off when he recovers.

Treatment is also along Dr. Duane's lines, which are practically the following: Fixing a definite point and gradually bringing the object towards the eyes until it looks double, then close the eyes and repeat many times, care being taken not to force the exercises but to slowly increase the number of times and the periods of treatment. These cases should not be permitted to do a full day's work because of the danger of fagging their convergence, and everything should be done to improve their physical condition. I might add that since starting this paper many aviators have been examined and they have complained that they cannot land

a machine from a nose dive without allowing a considerable time to get the focus, otherwise they will misjudge the distance and crash their machine.

Let me take this opportunity to thank Col. J. T. Fotheringham, D. M. S., and Professor J. M. McCallum for the opportunity of studying these cases in the military clinic at the Toronto General Hospital.

BILATERAL SUBCONJUNCTIVAL HEMORRHAGES.

DR. FRANCISCO M. FERNANDEZ.

HAVANA, CUBA.

This case is a trivial one and would not have been published had it not some curious features that may make it worthy of mention.

A young man, 26 years old, consulted

us, because during the first days of January, 1919, he noticed some small blood spots in his eyes.

On examination we saw very numerous hemorrhagic foci, studding both bulbar conjunctivæ the size of a millet grain, numbering from 20 to 30 in each eye. The hemorrhagic spots were also present in large numbers in both lower conjunctivæ, the upper ones being free from any spots.

The history of the case was negative of any traumatism, lifting heavy weights, cough or vomiting, and the possible explanation of the cause was that the patient had been crying excessively several days previously, on account of the death of his father.

The element of surprise in this case is the possible etiologic factor, and the large number of hemorrhagic foci, as well as the occurrence in both eyes, in a symmetric formation.

SOCIETY PROCEEDINGS

ROYAL SOCIETY OF MEDICINE, SECTION OF OPHTHALMOLOGY.

March 28, 1919.

MR. W. T. HOLMES SPICER, President.

Angioid Streaks in Retina.

MR. ELMORE BREWERTON exhibited a patient whose retina presented a peculiar series of angioid streaks. He brought the case because of the extensive character of the change. Tho the condition seemed to be rare, he understood Mr. Spicer had seen the appearance in more than one of his cases. On looking into the literature, he found that Ward Holden attributed such streaks to the remains of diffuse hemorrhage in a linear direction, thru the layers of the retina. But the exhibitor could not imagine blood to follow such lines, except in the nerve fibre layer, and these streaks were not in that, but posterior to it.

W. T. Lister believed the streaks to

be vestiges of new vessels along whose course were arranged exudates which had undergone secondary pigmentation. The streaks in this case, however, Mr. Brewerton did not think were new vessels, as, in the left eye, they met in a lake or pool around the disc, and one could not think of a vessel extending all the way around the disc. In a case reported by Zentmayer that observer said an extravasation of blood was present while the streaks were visible. His own view was that the streaks were the remains of hemorrhage between retina and choroid. Their brown color reminded him of hematin.

The President did not think any explanation yet given of these appearances was satisfactory. He had a brother and sister with an identical condition, except that the pigmentation in those was more marked than in Mr. Brewerton's case. All four eyes of those two patients were involved in the same way. In them, it seemed im-