If the short posterior ciliary arteries are divided, the patch of fundus concerned starts from the superior or inferior border of the disc and extends towards the periphery. This is what happened in Wagenmann’s experiments on the rabbit.

Huguenin continues.—In eight of our cases the altered patch starts from the lateral edge of the disc. In one of Birkhauser’s cases the affected portion was at the superior disc edge.

According to Siegrist, one cannot deny that causes other than laceration of a ciliary artery can produce the ophthalmoscopic appearances above described, as, for instance, a choroidal or sub-choroidal haemorrhage resulting from lesions of the choroidal vessels. Such haemorrhages naturally influence the choroidal circulation and may produce secondary degeneration in the outer layers of the retina. Sudden flattening of the globe from before backwards by a blow from a blunt object may bring about these choroidal haemorrhages. At any rate, the specific affection under consideration is due to circulatory trouble of the choroid.

Ernest Thomson.

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ABSTRACTS.

I.—OPHTHALMIA NEONATORUM.


This is an admirable review of ophthalmia neonatorum, with particular reference to its prevention in the United States, by George H. Thompson, of North Adams, Mass. It deserves to be read in the original.

Thompson espouses the view of those who attempt to explain the mildness of gonococcal ophthalmia in the infant as contrasted with its severity in the adult by supposing that the mother confers a strong degree of immunity upon the child. He does not agree with the other view (Theobald), according to which the mild disease in the infant is due to the fact that the infection has long lain dormant until roused into activity, whereas in the adult it occurs at the height of an attack of acute urethritis, when the infective powers of the micro-organism are presumably greatest. The author regards cases which occur before the second day after birth as due to intra-uterine infection, and those after the tenth day, to secondary infection. His views as to the pathogeny of corneal ulceration
differ from those commonly held, since he believes that the ulceration is usually caused by traumatism from the fingers, either of the infant or of the attendant. Hence (quite consistently), he advises, that in the treatment of the malady the baby's arms should be confined, so that he cannot reach his eyes, and in applying lotions, that the use of undines or of syringes be avoided. There is another reason for not employing syringes (not mentioned by the author), namely, the danger of infecting one's own eyes, of which unfortunate casualty the reviewer has witnessed a number of instances.

As regards treatment, silver nitrate is not used by Thompson, who depends upon 25 per cent. argyrol or 4 per cent. protargol. Despite the fact that some think lightly of its germicidal properties, Thompson has always been satisfied with argyrol in suppurrative conditions about the eye. The eyes should be kept clean with boric lotion or normal saline. The slighter corneal complications are treated with hot fomentations, the local application of carbolic acid or of tincture of iodine, the operation of corneal section being reserved for the more serious cases. He does not believe in the application of either atropine or physostigmine.

He mentions a surprising fact reported by Derby, viz., that in a series of cases reported from the Massachusetts Charitable Eye and Ear Infirmary 23 per cent. were unilateral. This is very different from the experience in this country, where most cases eventually become bilateral. Indeed, one English observer went so far as to assert that unilateral cases were never seen.

Comparing the results of cases treated in private and in hospital, according to Cheney, Thompson makes some interesting remarks.—Among 116 babies treated in the year 1909 at the Massachusetts Charitable Eye and Ear Infirmary only six became blind, and all of these were brought after ulceration was well established. On the other hand, in eight American cities, of sixty-one medical men, each of whom was confronted at least once during 1909 by a case of ophthalmia neonatorum, thirty-nine, or over 64 per cent., neither asked at any time for expert help, nor transferred the cases to hospital, but “invariably tried their inexpert hands at restraining the disease which they had failed to prevent.” These physicians treated forty-four cases, and they failed to save the sight of nine babies. “For these physicians the best that can be said is, that they reaped the result of their own laxity in 20 per cent. of their eye cases; or, in other words, they failed to prevent blindness in every fifth case.”

As showing the unwisdom of giving a definite prognosis, Thompson mentions a couple of cases, in one of which a corneal ulcer developed when discharge had practically ceased, and in the other where the baby, under similar circumstances as regards discharge, developed fatal meningitis.
Before discharging a case, Thompson takes two negative smears at intervals of forty-eight hours. He mentions the circumstance that gonococci have been found in the conjunctiva twenty-five days after the eyes were apparently well, and sixty days after the onset of the discharge.

Thompson whole-heartedly advocates the use of silver nitrate, 1 per cent., as a prophylactic, although he mistakenly states that those drops were those originally recommended by Crede. In point of fact, as well-known, the Leipzic professor employed and advocated 2 per cent. silver nitrate.

The American States have no standardized legislation for preventing infantile ophthalmia, and in some, indeed, no legislation dealing with the subject exists. Briefly, in 30 States babies' sore eyes must be reported to the Board of Health. In 11 States the health officers are required to secure medical attention for uncared-for cases. In 5 States a reporting law is printed on the birth certificate. In 4 States only are births reported early enough to be of assistance in the prevention of ophthalmia. In 9 States a question as to whether precautions have been taken against ophthalmia neonatorum is included in the birth certificate. In 12 States prophylactic outfits are distributed free to physicians and midwives. In 6 States the use of a prophylactic is compulsory. Finally, in 19 States popular educative literature is distributed by State Boards of Health. The city of Boston, which leads all others in preventive legislation, provides notification of birth within 48 hours, the use of preventives in all lying-in hospitals, free distribution of prophylactic, immediate reporting of cases of ophthalmia, the following-up of reported cases, and the authorization of Boards of Health to deal with such cases.

Thompson does not join in the hue and cry against midwives as the chief offenders in the causation of ophthalmia. He adduces evidence to show that the disease is actually more frequent in the cases where labour is attended by medical men. He thus reaches a view which the reviewer has voiced for several years past. There are few States where it is compulsory for the midwife to be registered. By the way, Thompson is not quite correct in stating that "in England midwives are compelled by law to use a prophylactic in every case; failure to do so revokes their licence." The truth is that the Central Midwives Board (the body which licenses the women) insists that in every birth certain simple precautions, such as cleansing the eyelids shall be taken, but it does not enjoin the employment of any chemical agent.

The author rightly lays stress upon the fact that the extra cost of educating a blind child approximates 3,000 dollars, and, further, that the estimated earnings of a blind individual are only one-half those of a sighted person. He concludes that the loss to the community of each person blinded from childhood must be about
13,000 dollars. As he points out, this amount would pay the salary of a capable woman for fourteen years, and he advocates the employment of such women, much in the same way as we employ “health visitors” here in England.

S. S.

II.—DARK ADAPTATION AND SYMPATHETIC PARALYSIS.

Stargardt.—The dark adaptation of the eye in paralysis of the sympathetic. (Die Dunkeladaptation des Auges bei Sympathicuslähmung.) Zeitschrift für Augenheilkunde, March-April, 1915.

Stargardt, of Kiel, points out that, although it is fairly well established that the sympathetic nerve has no direct influence upon the act of sight, there have been no investigations to determine whether it can influence dark adaptation.

We know that when the sympathetic is paralysed, neither the visual acuity, colour vision, nor field is affected.

Dark adaptation is, according to the duplicity theory (which is generally accepted), a function of the rods, depending upon the accumulation of visual purple in these structures. Kühne’s investigations lead us to suppose that the visual purple is not formed in the rods themselves, but in the pigmented epithelial cells. The process can be compared with glandular secretion, and is, indeed, a process of this nature.

If we accept the duplicity theory, we are further justified in asking whether the secretion of the purple is, like gland secretion, under the influence of the nervous system. We can at once grant the possibility of a nerve control of the secretion. The reflex act could travel along various paths.

Wilbrand and Sänger assume that dark adaptation is under the control of a centre in the external geniculate body. A critical examination of their reasons for this assumption, however, shows that they have failed to demonstrate such a centre.

Behr has tried to prove the existence of a centre which governs the secretion of the purple, but his conclusions are capable of other explanations.

In August, 1910, Stargardt carried out the following experiment. —The optic nerves of three rabbits were divided on one side. Eight days later the animals were exposed to direct sunlight for four hours, to bleach fully the visual purple. One rabbit was now placed in a dark room for seven minutes and then killed. The eyes were removed by red light, and bisected just behind the ciliary body.
The vitreous was removed, and the posterior segments of the eyes were placed in a 20 per cent. solution of potash-alum for twenty hours. It was now easy, after punching out the papilla, to remove the retina from the choroid. An examination in daylight showed that each retina was slightly pink, and that the colouration was equal in the two. Kühne has shown that in the rabbit, when the retina has been entirely freed from visual purple by exposure to sunlight, the first traces of this substance begin to appear after five minutes in the dark. It is therefore obvious that the regeneration took place at the normal rate in Stargardt's animals.

The other two rabbits were killed after being 35 minutes in the dark. The retina in each of these animals was coloured to the same degree, and the colouration was the maximum usual in the rabbit.

Kühne has shown that 30 to 38 minutes are necessary for full development of the visual purple in the rabbit. It is therefore obvious that division of the optic nerve has no influence upon the regeneration of the purple. It begins at the usual time, and reaches its maximum at the normal period.

These results agree with those obtained by others.

Angelucci found visual purple in the eye of a frog whose optic nerves had been divided six weeks before the examination.

Angelucci notes that the physiological reaction of the retina to light is not modified by the division of the optic nerves, for he found that the characteristic changes caused in the pigment cells by light could be demonstrated thirty days after the operation.

Holmgren found that the visual purple and the retinal stream were present in a rabbit whose optic nerves had been divided within the skull two years previously.

Ayres, and Kühne confirmed Angelucci's results, and found that the section of the optic nerves had no influence whatever upon the secretion of the purple.

Engelmann denies that the generation of visual purple is dependent upon a central regulation. He showed that if one eye of a frog was strongly illuminated, the colouration of the retina which had not been exposed to light was as intensive as though the frog had been kept in the dark.

It is therefore certain that the generation of the visual purple is not influenced by the brain, at any rate not through nerves which are contained in the optic nerve.

If therefore dark adaptation depends upon the generation of visual purple, this purple of the eye cannot be influenced by a centre in the external geniculate body.

There are at present no clinical researches upon the condition of dark adaptation in cases of paralysis of the trigeminal nerve which will enable us to form an opinion regarding its influence upon dark adaptation. The question must for the present be left open.
We should expect that the sympathetic nerve might have some influence upon dark adaptation. It is of no moment whether this influence be exerted directly upon the pigment cells, or indirectly by the choroidal circulation.

The investigation should be made upon examples of pure paralysis of the sympathetic, uncomplicated by lesions of the eye or by defects in the body, as a whole. Such cases, however, are rare. Stargardt has recently been able to examine a soldier whose left sympathetic had been divided by a Belgian bullet at Antwerp. The projectile was found embedded in the body of the fourth vertebra. The examination showed that, when the allowance had been made for the unequal size of the pupils, there was no difference in the dark adaptation of the two eyes. The secretion of sweat was abolished on the left side, and had the nerve any influence upon the formation of the visual purple, it would have been noted in this case.

Ayres and Kühne have shown that stimulation of the sympathetic has no action on the regeneration of visual purple. Our present knowledge points to the conclusion that dark adaptation and secretion of visual purple are processes which are independent of the brain and the nervous system, and that they are automatically carried out by the eye itself.

T. Harrison Butler.

III.—VISUAL ACUITY AT A SHORT DISTANCE.


Landolt, of Paris, in the paper under notice, lays stress on the importance of the use of more accurate methods of recording near visual acuity.

He begins by defining the visual acuity for distance, as determined in the ordinary way, and terms this the “practical distant visual acuity.” In this determination the possible effect of glasses in diminishing or increasing the size of the retinal images is neglected. The determination of the form perception of a given retina, i.e., the least separation that two luminous points must have to be seen separately, which Landolt defines as the “physiological visual acuity,” can be arrived at indirectly only by calculation of the effect of correcting glasses on the size of the images that fall on the retina. If we assume that the error of refraction is entirely due to differences in length, axial ametropia, the retinal images would be unaffected in size by correcting glasses at 13 mm. from the eye. On the other hand, if all the eyes were of the same length, the correcting glasses would have to be in contact with the cornea to leave the size of the
retinal images the same. As it is obviously impossible to determine, for any given eye, how much of the ametropia is due to length and how much to altered curvature, refractive power, and position of the crystalline, direct determination of the physiological visual acuity cannot be made. We do, however, know that the greater part of any ametropia is due, as a rule, to axial change, and may safely conclude that, with the exception of aphakic eyes, the influence of correcting glasses on the size of retinal images from distant sources may be neglected.

Landolt comes to the conclusion that our usual way of stating the visual acuity for those whose work is distant is sufficiently accurate. He next proceeds to point out that in near vision a different state of affairs has to be reckoned with. In order to secure adaptation for near work, one of three things must be done, either the accommodation must be employed, or a plus glass added, or a minus glass removed. The effect on the size of the retinal images differs with the method of accommodation used. Theoretically, it is possible to calculate the near from the distant visual acuity, but not so practically, as we are unable to measure the length and refractive power of an individual eye under the given conditions.

In order to test near visual acuity, Landolt has a series of optotypes calculated for the following visual acuities: V. 0.1; 0.15; 0.2; 0.3; 0.4; 0.5; 0.6; 0.7; 0.8; 1; 1.5; 2. If they are used at other distances than that for which they are marked, a calculation has to be made. If V is the visual acuity marked on the type for distance D, then v is the visual acuity for another distance d measured in metres.

Then \[ v = \frac{Vd}{3} \]

Owing to the war, Landolt has not been able to have more than a few of his types made, but has found some interesting results from his experiments with them. Thus, he has found that in high myopes the visual acuity for near vision may be double that obtainable for distant vision. He is of the opinion that some practical value attaches to the results obtained in the calculation of compensation for injuries.

E. E. H.

IV.—GLIOMA OF THE RETINA.

(1) Reis.—Can the derivation of glioma of the retina from the pigment epithelium of the retina be considered as proved? (Kann die Abstammung des Netzhautglioms vom Pigmentepithel der Netzhaut als erwiesen gelten?) Zeitschrift für Augenheilkunde, March-April, 1915.

(1) Some time ago F. Deutschmann published a paper in which he sought to prove that glioma of the retina was derived from the cells of the retinal pigment layer (Zeitschrift für Augenheilkunde, Bd. XXVII, 1912).

Reis, of Bonn, now describes a case similar to the one which led Deutschmann to formulate his opinion. Reis has had the opportunity of examining Deutschmann's sections, and he has compared them with his own.

He concludes that there is no evidence for Deutschmann's view, which, indeed, is at variance with all that we know about the genesis of this form of tumour.

Reis points out that it is a universal rule that a tumour grows from its own cells and not from those of adjacent tissues.

Glioma develops from embryonic cells, and is potentially present at an early stage in the development of the eye.

The article is illustrated by some good micro-photographs.

T. Harrison Butler.

(2) Berrisford, of St. Paul, Minn., U.S.A., continues the work on glioma retinae, which has been done in the past by Messrs. Collins, Lawford, Marshall, and Owen.

During the last 42 years the ratio of glioma retinae to other diseases at the Royal London Ophthalmic Hospital has been slightly more than 0.01 per cent. The 41 cases now under review support the opinion that glioma retinae occurs more often in males than in females (males = 22, females = 17, sex not recorded in 2). The proportion of bilateral to unilateral cases was 1 to 7, which is below the usual figure. The tumour was observed at birth in 3 cases; within the first year in 9 cases; during the second year in 6 cases; during the third year in 3; during the fourth year in 4; during the fifth year in 3; and during the sixth year in 2. Nine cases out of the 41 may be considered as cured, 3 years having elapsed since enucleation. The importance of cutting the nerve far back is emphasized by the fact that in not one of the 9 recoveries had the growth invaded the optic nerve as far as its cut end. In one of the cases the glioma occurred in a shrunken eye; previous literature contains only 20 such cases. There are 2 previous instances only in literature where a child once affected with glioma has grown up and has had children who developed the same disease; the present series adds a third case of the kind.

R. H. Elliot.
LENS OPACITIES IN OLD PERSONS.

V.—THE FREQUENCY OF LENS OPACITIES IN OLD PERSONS.

Barth, Theodor.—Researches upon the frequency and localisation of early opacities in the lens in 302 old persons over 60 years of age. (Untersuchungen über Häufigkeit und Lokalisation von beginnenden Linsentrübungen bei 302 über 60 Jahre alten Personen.) Zeitschrift für Augenheilkunde, Band XXXII, S. 8 und 143.

Barth, of Aarau, has examined a large number (302) of old persons in various institutions in Switzerland.

In every case the pupil was more or less fully dilated with homatropine and cocaine.

The eyes were examined by focal illumination, by transmitted light, and with the ophthalmoscope mirror, which had a + 8D. sph. lens behind it.

The numerical results were as follows:

- Lens extracted ... ... ... 1.32 per cent.
- Ripe cataract ... ... ... 1.99 "
- Opacities visible by focal illumination 60.6 "
- Opacities seen only by transmitted light 9.6 "
- Opacities visible only with the magnifying glass ... ... ... 22.85 "
- Clear lenses ... ... ... 3.64 "

The foregoing figures show that lens opacities are present in more than 96 per cent. of all individuals over 60 years old.

A comparison of the number of cases with lens opacities and the general state of the patients showed that cataract was not in any degree connected with any particular disease or condition. It depended solely upon the age of the person examined.

The position of the various forms of opacity is shown in another statistical table. It is noteworthy that 21 per cent. were found in the lower half of the lens with a preference for the nasal quadrant. In practically all cases the peripheral portion of the lens immediately under the anterior capsule was free from opacity. Generally, the type and position of the opacities was symmetrical in the two eyes.

The research shows that slight cataract is a physiological condition in the aged; it is a mistake to worry our aged patients by telling them that they have cataract when we discover these opacities.

The first portion of the paper is devoted to a review of the history of the subject, most of which is given up to the work of Förster.

T. HARRISON BUTLER.
VI.—INJURIES OF THE EYE, ETC., IN WAR.


(3) Aubineau.—The value of the aphakic eye from a military point of view. (Valeur de l'œil "aphake" au point de vue militaire.) Ann. d'Oculistique, février, 1916.


(6) Rollet and Velter.—Operative indications in traumatic cataract incurred in war. (Indications opératoires de la cataracte traumatique chez les blessés de guerre.) La Clinique Ophtalmologique, 10 juin, 1916.

(7) Morax, V. and Moreau, F.—Protective masks for the eyeball. (Masques protecteurs du globe oculaire.) La Clinique Ophtalmologique, 10 juin, 1916.

(8) Magitot.—The repair of the eyelids and of the orbital cavity as applied to cicatrised war injuries. (La réfection des paupières et de la cavité orbitaire appliquée aux blessures de guerre cicatrisées.) La Clinique Ophtalmologique, 10 juin, 1916.

(9) Moreau.—Early treatment of ocular and palpebral war wounds. (Traitement précoce des plaies oculaires et palpébrales de guerre.) La Clinique Ophtalmologique, 10 juin, 1916.

(10) Cosse.—The ocular prothesis. (La prothèse oculaire.) Ann. d'Oculistique, juillet, 1916.

(11) Lagrange, F.—A case of bilateral blindness from cerebral concussion, lasting for fifteen months, cured by a pretended operation. (Un cas de cécité bilatérale par ébranlement cérébral, ayant duré quinze mois, guérie par un simulacre d'opération.) Archives d'Ophtalmologie, juillet-août, 1916.
WAR INJURIES.

(12) Frenkel, Henri.—On a case of paramacular scotoma, with reduction of visual acuity, from wound of the occipital region. (Sur un cas de scotome paramaculaire avec abaissement de l'acuité visuelle par blessure de la région occipitale.) Archives d'Ophthalmologie, juillet-aout, 1916.

(13) Bourdier, F.—Sclerectomy due to wound of war, with integrity of sight. (Sclérectomie par blessure de guerre avec intégrité de la vision.) Archives d'Ophthalmologie, juillet-aout, 1916.

(14) Velter, E., and Perrin, R.—Two cases of intra-ocular foreign bodies visible with the ophthalmoscope. (Deux cas de corps étrangers intra-oculaires visibles à l'ophthalmoscope.) Archives d'Ophthalmologie, juillet-aout, 1916.


(16) Rollet and Velter.—Indications for operation on traumatic cataract amongst the wounded in war. (Indications opératoires de la cataracte traumatique chez les blessés de guerre.) Communication to the Ophthalmological Society of Paris, July 11th, 1916.


(20) Petit, Paul.—Two cases of serious burns of the eye caused by liquid caustic (injury of war). [Deux cas de brûlures oculaires graves par liquide caustique (blessure de guerre).] Ann. d'Oculistique, novembre, 1916.

(21) Harris, H. Elwin.—A case of a bullet in the sphenoidal sinuse; removal through the left nostril. Lancet, 9th December, 1916.

(1) Campo's patient was wounded on May 13th, 1915. The diagnosis made at the front was burn of the second degree of the thigh and foot (asphyxiating bomb). When seen by the author on May 17th, he complained that he could not see. On examination, he was found to have central corneal opacities in both eyes, the periphery of the
cornea being more or less transparent. In addition, there was a bulla in the centre of the left cornea, formed of three pockets, which could be made to fuse into one by stroking with the upper lid. The tension of the left eye was definitely minus. Under treatment with an ointment consisting of boric acid and lanoline, without a bandage, both eyes recovered rapidly, and on May 21st, the man considered them cured, although the left cornea was not quite so clear as the right. This patient never had any pain in his eyes, which seems to show that the pain in keratitis bullosa is not due to stretching of the nerve-filaments by displacement of the epithelium.

R. J. COULTER.

(2) Weekers, of Liège, has found a considerable number of soldiers in the Belgian Army who have been more or less incapacitated, while on active service, by the breaking of the glasses which they wore to correct astigmatism. He has devised a method of supplying the large majority of these with sufficiently accurate spectacles from a stock consisting of 45 types of cylindrical and sphero-cylindrical lenses. The main points of the scheme, which is on the same lines as that at present in force in the British Army, are that the lenses are mounted in circular frames and only a limited number of strengths are supplied. He points out that a large number of men rejected on account of defective vision can be made available for service by supplying them with glasses according to his scheme.

R. J. COULTER.

(3) Aubineau, referring to the controversy between Valude and Morax,* as to the advisability of operating on soldiers for monocular cataract, points out that, under the French regulations, an eye with cataract entails exclusion from active service, but an aphakic eye does not. Further, he considers that a successful cataract operation does not discharge the liability of the State, but diminishes it, since it reduces the prejudice caused to the wounded man. He is of opinion that monocular cataracts should be removed from soldiers, provided the fundamental conditions which govern all cataract operations are fulfilled.

R. J. COULTER.

(4) Injuries to the eye from bullet wounds are seldom reported in times of peace. In war they are frequently seen, and are of especial interest because of the complicated lesions.

Cosmettatos, of Athens, during the Græco-Turkish and Græco-Bulgarian Wars, saw 43 cases out of 118 eye injuries. Of these, 16 were of the right, 24 of the left, and 3 of both eyes. In 5 cases the wounds were simple; that is, only a part of the eye was injured; in 17 cases, complicated; while in 21 there was complete destruction.

Among the slightly wounded cases, 2 were only of the lids,

WAR INJURIES.

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2 others of the lids and lacrimal canal, and 2 of the lids and conjunctiva, and 1 of the cornea. These are described in detail.

Severe wounds were numerous. Some are described where the eye after severe injury remained intact. Three such cases are given in detail.

Injuries to the posterior parts of the eye were numerous. During their course the bullets had injured the choroid, retina, and the optic nerve through pressure on the posterior parts. Seven cases are described. Destruction of sight through bullet wound of the brain was seen in two cases.

He then reports the cases with complete destruction of the eye through bullet wounds, and arranges these cases in two classes: those without, and those with, fracture of the orbit—10 cases without fracture of the orbit and 11 cases with. In 3 of the latter the bullet entered the orbit and came out through another part of the head, and in 8 cases the bullet entered the head or face and came out through the wall of the orbit.

From this report it is seen that of 43 cases, 6 had only simple lesions, of which 5 were injuries of the lids, and 1 of the cornea. In 17 cases of complicated lesions of the eyes and adnexa, 2 had injury of the lids and canaliculus, 1 of the cornea and iris, 2 of the sclera and iris, 3 of the vitreous, 1 of the choroid, 2 of the choroid and optic nerve, 1 of the retina, 2 of the optic nerve, 1 of the optic nerve and retina, 2 of visual centre, and, lastly, 21 with destruction of the eye.

The lesions of the conjunctiva and lids are described.

The vitreous haemorrhages were caused by alteration in the inner membranes. During one and a half month's observation, these haemorrhages were not absorbed. Of the 5 cases seen, 3 were double-sided, 2 single. The tears in the choroid had varying widths. Besides 2 cases of severance of the optic nerve, mentioned before, Cosmettatos saw other cases with injury of the nerve and atrophy. In these 2 cases there appeared simultaneous paralysis of the levator palpebræ of the upper lid. In another case, hyperæmia of the optic nerve was noted. Of the 2 cases of vision lost from brain injury, Cosmettatos states: in the first case he found a simultaneous left hemianopsia with pupil derangement; in the second case there was a hyperæmia of the optic disc.

The cases with partial loss of vision were wounded in the following way:

Cornea, 1 case; choroid, 1 case; optic nerve, 2 cases; retina, 1 case; brain, 2 cases.

The total loss of vision occurred in: wound of the cornea, 1; of the sclera, 2; haemorrhage in vitreous, 3; wound of optic nerve, 3.

HANFORD MCKEE.

(5) Valude, of Paris, published an article in the Annales d'Oculistique for November, 1915, in which he maintained that
wounded soldiers suffering from traumatic cataract in one eye, the other eye being normal, should not have the cataract removed, as the operation could not improve their military value and might lead to loss of the eye and even to sympathetic inflammation.

He now reports a case in which the removal of a concussion cataract from a soldier, aged 23 years, was followed by irido-cyclitis and sympathetic ophthalmia, causing absolute blindness.

He also records a case in which an operation for squint was followed by unbearable diplopia, requiring a second operation to relieve it by putting the eyes perfectly straight, the ultimate result being that the man will probably be excused from military service for a long time, owing to the redness of the eyes caused by the operations.

He ends by urging that operations on soldiers for monocular cataract or strabismus are not advisable, as they do not confer any advantage on the patient from a military point of view.

R. J. COULTER.

(6) Rollet and Velter, of Lyons, have had a considerable war experience of traumatic cataract. They have seen 237 traumatic cataracts (123 operated) among a total of 24,990 eye patients.

Such cataracts are to be divided into two main groups.—(a) Those without wound of the eyeball; (b) those in which the eyeball is wounded. Of contusion cataracts (a) there were 40 out of the 237 cases. As a rule, the authors are of opinion that abstention from operation is preferable to intervention, and they give a number of considerations (state of the lens, tension, co-existence of other lesions, condition of the other eye) which have an influence on the decision to operate or not. Of the 40 cases, 14 were operated. Of cataracts accompanied by wound of the eyeball (b) there were 197 out of the 237. The treatment of these falls under two heads, namely, those with and those without an intra-ocular foreign body. Of these 197 cataracts with wound of the eye, 109 out of the 197 were operated. Of these 109 there were 89 without foreign body and 20 with foreign body. Of the 88 non-operated, 77 had no foreign body and 11 had this complication.

The authors then consider the various points influencing treatment under the following headings.—(a) Foreign body situated in the lens itself; (b) deeply situated in the eye; and, as regards those cases without foreign body, (a) the site of the wound, (b) the state of the lens, (c) the tension, (d) concomitant lesions, and (e) infection.

The following table shows the state of the second eye in the 123 operated cases, namely, 14 contusion cataracts and 109 cataracts complicated with wound:

<table>
<thead>
<tr>
<th>Other eye normal</th>
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<th>79 cases</th>
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<td>&quot;&quot; cataractous</td>
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<td>6 &quot;&quot;</td>
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<td>&quot;&quot; mild lesions</td>
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<td>24 &quot;&quot;</td>
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<td>&quot;&quot; severe lesions with V. = 0, or enucleated</td>
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<td>14 &quot;&quot;</td>
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</table>
There are various other statistical considerations and many hints on treatment, which may well be sought in the original interesting contribution to ophthalmic war literature. **ERNEST THOMSON.**

(7) **Morax and Moreau**, of Paris, have been considering the question of how best to protect the eyes in warfare.

They commence by enquiring statistically into the nature of the fragments by which eyes are injured. The statistics, however, are not here fully reproduced. Secondly, they consider the vulnerability of the eye through the orbital region, and the protection which would be offered by a simple curved mask with eye-holes. Thirdly, the authors discuss various kinds of screens for the direct protection of the eye, namely, the screen of armoured glass (**verre armé**) and that of perforated metal. Finally, the question of visibility through such screens is discussed by reference to photographs taken through them. Unfortunately such photographs are not reproduced, and, presumably, they would be difficult to reproduce in the printed page.

The authors conclude that there are four possible solutions, the relative value of which must be regarded from the practical and economic standpoint:

1. The use of a protective mask with simple unscreened eye holes (peri-ocular protection).
2. The use of discs of armoured glass placed in front of the cellophane discs in the **lunette** employed against lacrimatory gas (ocular protection).
3. The use of a mask with double screens of perforated metal (ocular and peri-ocular protection against small steel and copper projectiles).
4. The use of a mask with screens of armoured glass (ocular and peri-ocular protection against small steel and lead projectiles).

(The reviewer is uncertain as to the exact meaning of **verre armé**, which he has translated as "armoured glass.") **ERNEST THOMSON.**

(9) So far as the reviewer can understand, **Moreau**, of Paris, is writing mainly for the benefit of military surgeons who are not professional oculists, as the following words taken from the author’s conclusions indicate:—"To any surgeon who asks for my humble opinion, I would say: do not remove a severely wounded eye without having the opinion of an ophthalmologist, and, in dealing with a case of panophthalmitis, be content with an incision of the cornea with scissors or bistoury, followed by the use of the curette (**curette évacuateur**). To this I may add the advice that where the conjunctiva is swollen and torn, the temptation to ablate the fragments of the sclera should be resisted.”

The author also addresses ophthalmologists to the effect that in
wounds of the face the claims of cleanliness demand that they should not limit themselves to the eyeball, but should, as far as possible, undertake early treatment of wounds of the palpebral region.

Moreau concludes by hoping that the value of the early use of the electro-magnet may be realized (that is, presumably, by surgeons at the front who are not oculists); that, at the courses of instruction held at the front, conservative methods as applied to the eye should be discussed; and that an appliance for the protection of the eye should be worn by soldiers. (See also the article on this last subject, by Morax and Moreau, in the same number of this periodical, abstract No. 7 above.)

(10) Cosse, who is in charge of the French Army Ophthalmic Centre at Chartres, has had great difficulty in getting artificial eyes for the soldiers under his care who have required enucleation, especially in cases in which the socket is contracted or deformed, owing to injuries to the eyelids or supputation.

To overcome this, he takes a cast of the socket in the dentist's white paste, known as "Crown composition." This is softened in warm water and the cocainised socket is filled with it, massage being applied through the lids to force it into all the recesses. When the composition has become fixed, it is removed and trimmed. It is then replaced in the socket, and the position where the centre of the pupil should be situated is marked on it. The whole process can be carried out in two or three minutes. The author claims that by sending this cast, together with particulars as to the colour of the iris and conjunctiva and the size of the cornea and iris, to the artificial eye maker, a satisfactory prosthesis can be obtained, even in very difficult cases. He further finds that if the cast is worn for a time, the size of the socket increases, so he lets his patients wear the first cast for several days and takes a second one before he orders the prosthesis. In several cases of contracted socket he has been able to get sufficient enlargement to allow a prosthesis to be worn by getting the patient to wear casts of increasing size.

He claims that his method is easy and cheap, that it enables a prosthesis to be obtained for abnormal cases, and has therapeutic value in restoring a contracted cul-de-sac in certain cases.

R. J. Coulter.

(11) Lagrange, of Bordeaux, presents an interesting report upon the case of a soldier who had remained completely blind of both eyes since a bomb explosion upwards of a year before. He lost consciousness for about half an hour after the explosion, but sustained no injuries except a graze of the face and a bruise of one shoulder. Beyond loss of sight, nothing could be found amiss with his eyes. The diagnosis was obscure, and so it was solemnly proposed to the patient that a big operation should be undertaken,
no less a thing indeed than “tying the optic nerves to the brain by means of silver wire.” Chloroform was given, and before consciousness was wholly lost, the thermo-cautery was brought close to the eyes, but the man did not shrink from the glowing wire. When anaesthesia was complete, the eyes were washed with an irritating fluid, and a bandage was applied. On coming to himself, the man was told that the operation had been perfectly successful, and that more or less sight would be regained in about a fortnight’s time. Three days after this pantomime, the bandage being removed with great care amid the impressive surroundings of the operating the patient saw the hand at 50 cm., and could distinguish, although not count, the officer’s stripes. A couple of days later, he read the large characters of a catalogue. To shorten the story, sight continued to improve day by day, until about a fortnight after the “operation,” it had reached 7/10, while the visual field and chromatic sense were normal.

Discussing the case, Lagrange, on the whole, concludes that the blindness was simulated, in order to avoid the fatigues and dangers of war. He inclines to reject the view that it was an instance of monosymptomatic hysteria.

S. S.

(12) This communication by Frenkel, of Bordeaux, centres around the case of a soldier, 22 years of age, who was wounded in the occipital region by a fragment of shell. He was unconscious for six hours, and when he came to himself, was found to be blind. The blindness, after persisting for seven or eight days, then improved somewhat. The man was trephined a couple of months after the injury, and the operation was followed by improvement in the general health but not in the sight.

When he was examined by Frenkel some sixteen months after the original injury, the pupil of the right eye was a little (1 mm.) larger than that of the left. The pupillary reactions were normal, and could be elicited no matter on what part of the retina the light was thrown. The optic discs showed no departure from normal. V. = 0.1 and No. 7 Wecker. In order to obtain this sight, the patient inclined the head towards the left in reading with the right eye, and vice versa. There was slight concentric contraction of the field as regards blue, red, and green. There was a scotoma of hemianopic type lying immediately below each fixation point, larger in the case of the left than of the right field. The results of examination with the Rémy diproscope and the Förster photometer are given.

In the light afforded by the foregoing case, Frenkel sets himself to answer certain questions.—1. **What was the true visual acuity possessed by the patient?** With the diproscope, an acuity of about 1/15 was obtained, but this discrepancy is probably to be explained by the limitation of the visual field brought about by the holes of
the appliance. In order to obtain V. = 0.1 by the ordinary types the man was compelled to employ the supra-macular portion of each retina, and the attitude of head necessary to accomplish this could not be assumed on account of the holes in the diploscope. 2. What were the anatomical causes of the visual disturbances? These were obviously due to changes in the cortical centres of vision consequent upon a lesion of the occipital lobe. From experiments upon monkeys, H. Munk distinguished between a cortical zone for the macula, and a much more extended zone for peripheral vision. In point of fact, the question of the cortical field of macula is not yet settled. Some believe that the cortical elements representing the macula are widely disseminated (Monakow, Bernheimer); others that the macula is localised in the hindmost part of the calcarine fissure; while Henschel places it in the region of the cuneus. 3. Is the infirmity irremediable? Since some thirteen months have passed since the man was trephined, and the sight has remained stationary, the condition must now be considered as definitive. 4. What is the degree of functional loss, and its probable duration? Frenkel estimates the functional loss at 90 per cent., and regards it as irremediable.

S. S.

(13) This case of shell wound of the eye is placed upon record by Bourdier on account of the likeness to the wound made in the sclerectomy of F. Fergus. Essential facts follow:

A soldier was wounded in the right eye and other parts of the body by fragments of shell and of wood. When examined twelve days after the injury, the right eye presented no inflammatory signs. V. = 0.4. At 4 mm. above the limbus, in the median line, was a perforation, of which the diameter was about 2 mm. There was no protusion, but the uvea appeared in the aperture. Vitreous somewhat cloudy, and retina detached in the lower segment, opposite the perforation. No foreign body. A large iridectomy was performed, and the wound in the sclera covered with conjunctiva. V. twenty days later = 1.

S. S.

(14) Velter and Perrin report a couple of cases where eyes had been wounded by flying fragments of projectiles. When seen, six months and one year respectively after the injury, the eyes were free from inflammatory reaction, the media were clear, tension was normal, and vision was in one instance perception of light and in the other 2/3. Foreign bodies could be seen with the opthalmoscope in the fundus of each patient. In one case the foreign body had passed through the lower eyelid, penetrated the eyeball in its lower segment, and come to rest in the deep membranes above the macula, while in the other it had passed into the globe through the cornea.

No attempt was made in either instance to remove the foreign substance.

S. S.
WAR INJURIES.

(15) This is the address delivered by Jessop, of London, on May 4th last, in his capacity of president of the Ophthalmological Society of the United Kingdom.

The rarity of sympathetic ophthalmitis during the present war he traces to skill in diagnosis, and especially to the early removal of seriously injured eyes.

Another subject that engages his attention is papillœdema following bullet wounds of the skull. The condition occurs in about 60 per cent. of the cases where the vault of the skull is fractured. The ophthalmoscopic signs are usually slight. Their presence always implies an increased intracranial pressure, on the relief of which they quickly disappear, generally without leaving any traces behind them.

Finally, Jessop considers the retinitis of trench nephritis. Accompanying the œdema, dyspœnea, albuminuria, vomiting, headache, and other symptoms of that somewhat mysterious malady, he has found ophthalmoscopic evidences of retinal œdema in 46·6 per cent. of forty-five cases critically examined; but as the condition is ephemeral, he considers that the percentage is probably much higher than stated. Pathological lesions of the retinal vessels were not observed. In three of the cases, œdema of the retina was accompanied by other ophthalmoscopic lesions. Thus, in one patient there were flame-shaped retinal hæorrhages; in another, an early retinitis with plaques; and in a third, the signs ordinarily described as those characteristic of albuminuric retinitis. As regards the last patient, a man, aged 27 years, the retinal affection ended in resolution within something less than four months from the beginning of the general symptoms. It is regarded by Jessop as an instance of acute nephritis. Incidentally, he mentions two cases of detachment of the retina, due to solid, or almost solid, œdema, in which, after manifesting brilliant white plaques and hæorrhages, the condition got well.

S. S.

(16) The French ophthalmic journals have recently devoted considerable space (see No. 6 above) to the subject dealt with by Rollet and Velter, of Lyons. While we are unable to see that the course of treatment differs or should differ in the soldier from that proper to the civilian, the extensive experience (237 traumatic cataracts with 123 operations) of the authors while in charge of the Ophthalmological Centre of the XIVth region, renders anything they may have to say on the subject worthy of consideration. Unfortunately the authors, in the communication under review, state that, in spite of the interest of the military value of the soldiers treated by them, they do not intend at present to deal with that part of the subject. Possibly, they may be willing to do so at a later date.

They divide traumatic cataracts first into two main groups:—
1. Those without wound of the eye. 2. Those with a wound of the eye.

In the first group, the contusion cataracts, they consider that, it is better to avoid operation in the majority of cases. The most important symptoms to guide us in deciding the question for or against operation are:

1. The state of the lens.—Contusion cataracts are frequently incomplete, the opacity being rarely nuclear, but usually anterior or posterior capsular. As its situation is often excentric, a certain amount of vision is often present, which, if not good, is at any rate of some service. Operation should be reserved for those cases in which the opacity is complete. Operation should always be performed when the lens is dislocated into the anterior or posterior chamber. We regret that the authors give no details of the operative procedures they advise in the case of dislocated lenses.

2. The state of the intra-ocular tension.—Hypotony is an absolute contra-indication to operation, even if the cataract is complete, since it often indicates a latent iridocyclitis which is liable to be stirred up by any operative interference. In the opposite case of raised tension operation may be necessary, but in many cases, especially if spontaneous absorption is taking place, the tension will yield to the use of miotics. The risks of producing adhesions in cases with a swelling lens, seem to us to outweigh any possible advantage in their use, nor do we think they would be of much use unless the rise of tension was but little.

3. The co-existence of other ocular lesions, such as iridodialysis, vitreous or retinal haemorrhages; retinal detachments or choroidal ruptures.—As there is no hurry, it is well to wait in such cases and see if spontaneous absorption may take place.

4. The state of the other eye must be taken into account.—If that has been lost, or its visual acuity is very low, operation is certainly indicated, all the more so as the post-operative anisometropia, troublesome if the fellow eye is sound, will not have to be taken into account.

The authors had 40 of these contusion cataracts to treat and operated on 14; the remaining 26 were not operated on either because the cataract was accompanied by other severe ocular lesions or was only partial.

The second class of case, in which there is a wound of the eye, is divided into two main groups, according to the presence or absence of an intra-ocular foreign body.

1. Traumatic cataracts with an intra-ocular foreign body. The first indication, according to the authors, is to submit the patient to the action of the magnet in the hope of dragging the foreign body round the lens if it should prove magnetic. Nothing is said about accurate localisation by radiography, which should surely be the first
step, even if the somewhat rough method of attempting to drag the foreign body forward is adopted.

The situation of the foreign body is noted as of importance. It is stated that the diagnosis of a foreign body situated in the lens is always difficult and only to be made by radiography, a statement surely applicable to all intra-ocular foreign bodies. As a foreign body in this situation is frequently very small and firmly fixed in the lentil substance, extraction by the magnet is often unsuccessful. In such cases it is advisable to wait until the cataract is complete, and then to remove the lens matter and the foreign body at the same time. The known tolerance of the lens for a small foreign body, and the rarity of infection in such cases, support this course of action.

When, on the other hand, the foreign body is in the deeper parts of the eye, a magnet operation must be undertaken at once. Should this prove successful, and the inflammatory symptoms subside, the extraction of the cataract may follow at the most suitable period. During the extraction of the foreign body some of the soft lens matter will probably be removed and the remainder may then be left to be absorbed. If, on the other hand, the removal of the foreign body is not successfully accomplished, one of three results follows.—The eye is lost as a result of inflammatory changes of a rapid nature, which as an exceptional rarity, may lead to sympathetic ophthalmia; organisation of the vitreous takes place round the foreign body and light perception is gradually lost without any inflammatory change of an active nature; or, finally, the eye may quiet without loss of vision and an attempt may be made to extract the cataract after a sufficient interval has elapsed. The authors removed the cataract in 12 cases in which they had failed to remove the foreign body, and succeeded in one case in obtaining vision better than 1/4, in 3 cases between 1/4 and 1/20, and in the remaining 8 less than 1/20. On the other hand, in 6 cases in which the removal of the foreign body had been successful, 2 had vision better than 1/4, 2 between 1/4 and 1/20, and 2 worse than 1/20.

The greater number of cases had no foreign body present (166 as against 31 with foreign bodies). In these cases the indications for operation depend on the seat of the injury, the state of the lens, the intra-ocular tension, and the accompanying injuries of the globe, with special reference to the presence of infection.

In the majority of cases the injury will be found in the anterior segment of the eye and may consist of a small opening which has rapidly closed with a small inclusion of iris. This latter, it is suggested, may be cauterised; a method of treatment which has proved disastrous in civilian practice and which we consider should never be attempted. When the wound is large and prevented from
closing by lens matter and prolapsed iris, immediate operation is necessary to free the iris and to remove the lens matter. The cases are usually not seen soon enough after the injury to render suture or conjunctival flap grafting of much use. As regards the condition of the lens and the intra-ocular tension, the procedure recommended does not differ from that adopted in the case of contusion cataracts. Accompanying lesions are of importance in so far as they affect the results that may be expected from successful operation; it is obviously useless to operate on an eye in which the perception of light is lost.

No eye should be operated on that shows signs of a quiet iridocyclitis, especially if the tension is subnormal, until a considerable period has elapsed.

166 cases of cataract with wound of the eye were dealt with. Of these, 89 were submitted to operation with the following results:—

<table>
<thead>
<tr>
<th>Vision</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 and better</td>
<td>12</td>
</tr>
<tr>
<td>1/4 to 1/20</td>
<td>36</td>
</tr>
<tr>
<td>1/20 to 1/50</td>
<td>18</td>
</tr>
<tr>
<td>Less than 1/50</td>
<td>23</td>
</tr>
</tbody>
</table>

No cases of post-operative infection were observed.

As regards the operative methods adopted, the authors have little to say. They advise a small corneal incision and the use of capsule forceps.

(17) Morax and Moreau, of Paris, have made a statistical investigation into the nature and mode of action of the projectiles which injure the visual apparatus, with a view to devising means for its protection.

The statistics are founded on 698 cases which were all examined at the Lariboisière Hospital under similar conditions. The wounds were caused as follows:

- By shells ........ 341
- By rifle or machine gun bullets .... 191
- By grenades ...... 82
- By bombs, petards, aereal torpedoes, etc. 63
- By Shrapnel bullets .... 20
- By cold steel .... 1

These various bodies may injure the visual apparatus in five ways, i.e., by contusion, direct or indirect; by rupture of the ocular membranes, with or without penetration; by infection of the globe; by section of the optic nerve; and by intra-cranial lesion of the optic paths. Lesions by direct contusion are choroido-retinal ruptures, haemorrhages, and ëœdma, and are important from their frequency, and because they usually cause permanent functional damage. They may be caused by quite small fragments of shells, grenades, or bombs, or even by earth or stone thrown up by the explosion of a shell or grenade. Lesions by indirect contusion cause tears in the iris, traumatic cataract, retinal haemorrhages, and
zones of depigmentation, usually called "ruptures" of the choroid, although it is probable that a rupture is not always present. Lesions by rupture of the membranes usually give rise to complete loss of the eye, but small bodies may penetrate the eye and remain in it, causing variable amounts of damage without total loss of vision. Infection occurs when a small body penetrates the eye without at once destroying the sight. The infecting organism may be an earth germ (B. perfringens, etc.,) but more commonly it is carried in from the conjunctival sac (pneumococcus). Lesions of the optic nerve or motor nerves are rare in comparison with lesions of the globe itself. Intra-cranial lesions are not of importance for the purpose of the author's investigation, as the casques in use provide protection against them.

For the purpose of investigating the nature of the injuries caused by the different varieties of projectiles, the authors have made an arbitrary division of the latter into three classes—1. Small, weighing less than 0.25 to 0.30 grammes. 2. Medium, weighing 0.30 to 5.00 grammes, and 3. Large, weighing more than 5 grammes. The last class includes shrapnel and rifle bullets, which weigh from 8 to 10 grammes. Bodies belonging to this class usually traverse both the walls of the eyeball and, in addition, wound the eyelids and pass through some of the thin bones surrounding the orbital cavity. In cases in which lesions of this grade have been produced, but the wounding body has not been found, the authors have inferred its size from the injuries caused by it. Medium fragments frequently cause double perforation of the eyeball, but do not usually pass through the walls of the orbit. They may cause concussion injuries. Small fragments rarely penetrate deeply into the orbit, but may pierce the lid and sclerotic and become lodged in the globe, but once there have not sufficient force to pierce its second wall.

A further category of injuries is caused by a multitude of tiny metallic fragments forming a regular metallic dust which tattoos the skin of the face, the cornea, and the conjunctiva and may even penetrate to the iris or lens. The 341 cases of injuries from fragments of shells were divided as follows among these three classes:—Large, 75; Medium, 96; Small, 170. Of 82 grenade wounds, 57 were caused by small fragments, and 25 by large or medium, and of 63 injuries by trench projectiles 38 were caused by small fragments, and 25 by large or medium ones, or, adding the lot together, of 486 injuries, 265=54 per cent., were caused by small fragments. Injuries by rifle or shrapnel bullets.—These numbered 211 (191 rifle and 20 shrapnel). In most case they caused destructive orbital-palpebral-ocular lesions, but 55 of them (42 rifle bullets, 7 fragments of rifle bullets and 68 shrapnel bullets) caused ocular contusions. In 38 of the 191 cases of injury by rifle balls, the
projectiles were split into small masses or even dust, tattooing the lids and cornea, and giving rise to minute penetrating wounds with traumatic cataract, etc.

The functional results of the injuries were as follows:—

<table>
<thead>
<tr>
<th>Injury Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homonymous hemianopsia from cranial trauma</td>
<td>14 cases</td>
</tr>
</tbody>
</table>
| Enucleations                              | 293
| Vision lost or less than 1/20             | 194 |
| Vision between 1/10 and 1/20              | 36 |
| Useful vision retained or regained        | 160 |

As the result of their investigation, the authors consider that, although no practicable protective apparatus could be of use in stopping bullets or large splinters of shell, almost half the ocular injuries in war are caused by small bodies, which could be stopped by some sort of gauze shield, which might also stop spent or almost spent fragments of medium size. Unfortunately, such an apparatus would more or less diminish the visual acuity of the soldier wearing it, but a shade could be worn protecting the temporo-orbito-nasal region and perforated by an opening a little larger than the cornea, which would reduce the vulnerable zone by about three-quarters.

R. J. COULTER.

(18) Fromaget and Bertemes, who have charge respectively of the ophthalmic and oto-rhino-laryngological departments of the French Army Hospital at Boulogne-sur-Mer, describe a form of unilateral pseudo-conjunctivitis depending on homolateral frontal sinusitis. They give histories of three cases which they have observed in soldiers sent for examination, owing to suspicious conjunctivitis, and of one case which occurred in civil practice.

The disease is characterised by vivid redness of the entire palpebral and bulbar conjunctiva, which at first sight resembles that of acute conjunctivitis, but on examination with a loupe, is seen to be due to the presence of vessels. This is accompanied by slight lacrimation, but there is very little secretion and no gummy lids or redness or excoriation of the skin. There is no pain and no sign of disease in any other part of the eye or orbit. The attacks come on suddenly at intervals and, after lasting for periods which vary from 7 to 15 days, disappear spontaneously in from 24 to 48 hours. They are uninfluenced by the usual treatments.

These conditions were found to be associated with slight chronic frontal sinusitis, characterised by tenderness on the affected side on the deep pressure on the angle where the inner and superior walls of orbit join, and by slight oozing of pus inside the external lip of the middle meatus. This latter may not be present at the first examination and may only become apparent after the fronto-nasal canal becomes freed spontaneously or by treatment. The authors consider that these cases are very similar in ætiology to the cases of iritis or false
iritis which accompany maxillary sinusitis, and are due to infection, probably through the venous anastomoses, and not to reflex action. For treatment they recommend inhalation of menthol with occasional applications of cocain and adrenalin. As the frontal disease is of a very mild type, operation is not usually necessary. R. J. COULTER.

(19) Aubineau has had many soldiers from the Moroccan Division of the French Army sent to the ophthalmic centre of which he is in charge with the diagnosis of "artificial conjunctivitis." Most of these were suffering from ordinary acute, or subacute, bilateral conjunctivitis in eyes, predisposed to the condition from old chronic conjunctivitis, or trachoma, and yielded readily to treatment with sulphate of zinc, or silver salts, so that he has not been able to confirm the diagnosis. He considers that these attacks were started by unintentional inoculation of the conjunctiva with dirty fingers, or by the accidental introduction of dust into the conjunctival sac. He admits that this may have been done deliberately, but is of opinion that malingerers usually choose some painless method, which does not involve serious consequences, and that disappearance of the inflammation spontaneously, or under bandaging, is the rule. Although the introduction of dust into the conjunctiva, which has been the seat of old disease, may set up a true conjunctivitis, the author considers that in the presence of an acute or subacute conjunctivitis without special features, nothing justifies an ophthalmologist in inferring retrospective aetiological conditions as to its artificial or traumatic character. He regards unilaterality as suspicious, but not conclusive unless special objective signs are present, such as those associated with ipecacuanha conjunctivitis, viz.: absence of secretion, eczematous condition of the lid margins, lardaceous tint, and localisation of the lesions in the lower palpebral conjunctiva. Finally, he records the case of a soldier sent to him as a malingerer with ipecacuanha conjunctivitis, who was in reality suffering from spring catarrh with conjunctival scarring and a fresh porcelain-looking opacity of the left cornea. The latter Aubineau attributed to injudicious treatment with nitrate of silver and yellow oxide of mercury simultaneously.

R. J. COULTER.

(20) Petit, of Caen, describes a couple of cases in which the eye and eyelids were seriously injured by some liquid caustic, which he supposes to be analogous in nature to phosphoric acid. Both men were wounded by a bursting shell, which probably contained some liquid intended to generate asphyxiating vapours, and the contained liquid was thought to be the agent whereby the eyes were damaged. In each patient one cornea ruptured, and the eye had to be enucleated. He has not so far seen a similar case, although his experience of wounded soldiers has been large. S. S.

(21) Harris, reports and illustrates with skiagrams a most interesting case in which a bullet appears to have entered by the left
inner canthus, and to have passed along between the eyeball and the inner wall of the orbit, until it reached the apex of that cavity. Here, turning downwards, inwards, and forwards, it described an angle of more than 180 degrees, and entered the sphenoidal sinus, wounding in its course the third and optic nerves. Clinically, the conditions found when the patient reached the Beaufort War Hospital Bristol, were "paralysis of the eyelids" (presumably ptosis is meant) and left optic atrophy. The ingenious and ultimately successful method adopted by Harris to remove the bullet may be read in the original. Visual details are not given.

Ernest Thomson.

BOOK NOTICES.

Quotations, Notes and Illustrations to supplement a Lecture on Curiosities and Defects of Sight. Delivered to Working Men and Women at the British Association Meeting, Manchester, 1915. By W. Stirling.

Dr. Stirling, the well-known Professor of Physiology at Manchester University, has taken much trouble in collecting numerous quotations from literature bearing on the activities of the human eye. He has also collected a great many illustrations bearing on the same subject, ranging from a portrait of Descartes with a cutting from the Tractatus de Homine to illustrate his views on the pineal gland and the relation of the eye to the soul, to specimens of photography with the compound eye of an insect. Various optical illusions are figured and elementary anatomy of the eye together with some account of its functions is included.

The pamphlet should serve to interest and attract the readers to whom it is addressed.

E. E. H.

Manchester Royal Eye Hospital. Centenary Report, 1815 to 1915.

The authorities of the Manchester Eye Hospital are to be congratulated on the progress shown by the Institution in its hundred years of activity. During the first year it treated 1885 patients and enjoyed an income of £202 19s. 11d., and in its last year it treated 39,116 patients with an income of £6,407 10s. 1d.

Forty-six pages of the report are occupied by the details of the 306 cataract operations performed in the last twelve months. The operation usually performed was the combined extraction, the section being purely corneal and a conjunctival flap made only in 121 cases. Loss of vitreous occurred in 21 cases. Vision between 6/60 and 6/6 was obtained in 265 cases and thirteen eyes were lost, four of these being due to suppuration.