OPHTHALMOLOGY IN THE B.N.A. & C.M. FORCES*

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THIS account of the ophthalmic services of the British Forces in the Western Mediterranean Theatre is written for the information of senior colleagues at home who have shown constant interest, and as a tribute to the work of their junior colleagues abroad who have provided the material for it. The period covered extends from November, 1942, to November, 1944, and includes the campaigns in North Africa, Sicily and Italy.

The campaign in North Africa—administration

When the Allied Armies in the Autumn of 1942 descended on North Africa and began their advance eastwards towards Tunis, the general plan for the care of ophthalmic cases was based on formal lines, namely, with an ophthalmologist as a member of the staff of General Hospitals having 600 beds or over. By early January, the First Army had become embroiled in the hills of the Tunis-Algerian frontier, and all major ports along the North African coast had been occupied. The campaign, then, at this time fell naturally into three parts of military administration.

(1) *First Army Area*.—This was the forward area which contained field ambulances, C.C.S.s, and small and medium general hospitals. At this time there were about three ophthalmologists in the area at 600 bed general hospitals and the main function of all medical units here was the early collection, care, and speedy evacuation of casualties.

(2) *Lines of Communication Area*.—This area involved a large expanse of territory in N. Africa from the eastern Algerian Frontier back to the coast at Algiers, and it included large general hospitals at key ports and strategic railway positions. Such hospitals each carried an ophthalmologist and acted both as a reservoir to relieve the pressure of beds in the Forward Area, and as a place for more prolonged treatment to avoid congestion at Base.

(3) *Base Area*.—In the base area were concentrated the largest of the general hospitals ranging over 2,000 beds: from these evacuation to the U.K. took place. The D.M.S. at this time at Allied Force Headquarters was Major-General Sir Ernest Cowell, K.B.E., and the task of making arrangements for the care of all surgical cases including ophthalmic cases was in the hands of Brigadier John Weddell, C.B.E.; it was a task of no small magnitude.

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The main base medical stores for the campaign were located in Algiers. All general hospitals had arrived in North Africa with full ordinary ophthalmic equipment, but there was a shortage of such items as giant magnets, diathermies, and slit-lamps.

In the base and L. of C. areas this conventional arrangement for ophthalmic care functioned well and cases were distributed to general hospitals in large or small numbers so that ophthalmic surgeons were busy or slack as the case might be. But in the Army area where mobility of units was the rule, it was soon realised by Major E. C. Zorab, R.A.M.C., that the ophthalmic services also must be more mobile. Accordingly, therefore, he improvised a mobile ophthalmic unit which consisted of a surgeon and surgical equipment, a sergeant optician and optical equipment and a clerk. This unit toured the countryside in a borrowed vehicle amongst units of the First Army and with great success dealt with their eye emergencies and provided the immediate supply and repair of spectacles.

Since at this time, as the next Field Optical Section was hundreds of miles away at Algiers, it will be realised how valuable was the work done by this unit in saving man-power and how well deserved was the "Mention in Despatches" which Major Zorab subsequently received.

Later, as more hospitals and stores arrived in the Theatre, the situation became better, and by the time of the fall of Tunis, Field Optical Sections had been established in each of the three areas and delay in the supply of spectacles was much reduced. Moreover, such special stores as slit-lamps, diathermies and electromagnets had now become available, in spite of shipping losses: it will be recalled that at this period the Mediterranean was not yet open.

Clinical Ophthalmology in North Africa

Apart from the usual ocular diseases and the accidents incidental to both military and civil practice, certain interesting conditions related to the terrain and the sub-tropical climate of North Africa, as well as battle casualties from all kinds of missiles were encountered.

1. *Ocular Myiasis*.—Several cases of ocular myiasis were reported in British and American forces in N. Africa. This disease was first described in 1901 by the Sergeants and is due to the implantation in the conjunctival sacs of the larvae of the oestrus ovīs (bot fly). Normally these larvae at all stages of evolution infest the frontal sinuses of sheep but only the first stage is found in man, and it is common to find that where there is an abundance of sheep as in the upland districts man is not attacked.

Almost all the military cases were reported from coastal districts.

The larvae are discharged by the fly directly into the conjunctival sac either by contact or in flight. They attach themselves to the conjunctiva by their tiny hooklets and wriggle along by alternating contractions and expansions of their bodies. Considerable conjunctival irritation and inflammation are caused by their presence as there may be up to 2 or 3 score in the conjunctival sac. The instillation of cocaine paralyses the parasites which thereupon lose their grip and may easily be removed: the cessation of their mobility is sudden and very striking. Special care should be taken to reach and clear the retro-tarsal spaces and folds.

Oestrus Ovis and Larva to scale.

Larva showing hooklets.

2. *Follicular Conjunctivitis*.—Apart from the ordinary juvenile type a form of mild follicular conjunctivitis with marked injection of the bulbar conjunctiva also is seen in sand-fly fever; in the early stages of this disease photophobia is a feature.

3. *Ophthalmia Nodosa*.—*Ophthalmia nodosa* was reported by Major B. Gluck, R.A.M.C., in Tunisia and was due to the implantation in the conjunctiva of the barbed hairs of the common cactus.

4. *Trachoma*.—*Trachoma* has not occurred as a new disease in British troops, but it was of frequent occurrence amongst Sicilian prisoners of war. Military ophthalmologists adopted the procedure of everting the upper lids of all coloured troops and prisoners of war as a routine measure, and for treatment, the expression of follicles, copper applications and full sulphonamide therapy were employed.

5. *Dendritic Keratitis*.—*Dendritic keratitis* has been a serious menace throughout the campaign and in North Africa was a cause of much prolonged convalescence. It is non-specific in origin and may occur in all types of high pyrexia such as from malaria and infective hepatitis. Four stages have come to be recognised, (a) Stage of infiltration in which the zone of future ulceration is clearly marked but as yet there is no stain with fluorescein and no loss of epithelium; (b) simple ulceration of this zone; (c) severe

ulceration with much para-corneal infiltration and secondary infection; (d) residual stage of scar formation and vascularization where there are deep fascicular formations of blood vessels and indolence of the epithelium. A prolonged course of convalescence is nowadays prevented by appreciation that the virus is intracellular and that treatment must destroy cellular structure if it is to be efficient. Consequently, our present mode of treatment consists in breaking down the track of the ulceration by vigorous curettage at the earliest possible moment, and to employ thereafter chemical cauterization by spirit, iodine, or carbolic acid. For the fourth stage of adventitious vascularization strip and cautery peritomy and median tarsorrhaphy have given valuable assistance in shortening hospitalisation.

6. *Battle Casualties*.—Mortar and shell fragments accounted for the majority of these casualties in North Africa. For penetrating wounds of the globe, magnet applications, excision of prolapsed uveal tissue and the application of vissor conjunctival flaps were routine measures. It was quickly realised that the subjective negative reaction of a patient to magnet application was no guide to the presence of a magnetizable intra-ocular foreign body since time and again such foreign bodies have been seen to leap to the magnet although the patient experienced no sensation of traction. All wounds were treated also with sulphanilamide powder.

The treatment of sockets received special attention. Firm vaseline packs were thoroughly discouraged but the elevation of the upper lid by straps of adhesive plaster so as to allow air to circulate within the socket represented an advance in ophthalmic treatment. It was also recognised later that it was essential in the early stages where lid and orbit were wounded to separate the raw surfaces by a strip of vaseline gauze else otherwise lid and socket became firmly adherent by the time the case reached a base hospital.

Therapeutic measures also in fashion were oral sulphonamides, mydracaine, liquor tinctorium for seborrhoeic blepharitis and protein shock by the injection of intravenous T.A.B. vaccine for hypopyon and infection. The routine treatment of lid wounds and burns at this stage was to frost them with powdered suphanilamide followed by a covering of vaseline gauze or tulle gras.

The campaign in Sicily and Italy

Administration.—After the fall of Tunis, the First Army was disbanded and some of its divisions were incorporated into the Eighth Army. In the medical services also there was considerable rearrangement. With the Eighth Army came two mobile ophthalmic units each consisting of a surgeon, optician, operating

room orderly, clerk and two drivers. Their vehicles were two 3-ton vans, one of which was equipped as a consulting room, and the other as an optical workshop complete with generator.

The Middle East Hospitals reached the Central Mediterranean Theatre impoverished in supplies and personnel, a situation which was to be expected as a result of shipping difficulties and the long desert campaign. These deficiencies, however, were soon remedied, and for the forthcoming campaign in Italy, ophthalmic resources were adequate if not generous.

The enormous expansion of the forces in the theatre resulted in increased problems of administration and as a result, in common with other specialities, an Adviser in Ophthalmology was appointed.

After a survey of existing resources at that time, the following points of policy were decided:—

(1) To position ophthalmic and optical services as far forwards as possible—namely at C.C.S. level. This was a local implementation of War Office policy which had made provision for mobile ophthalmic units as Corps allotments, and aimed at early specialist treatment and avoidance of evacuation for spectacles.

With expert ophthalmologists and skilled opticians so far forwards wounds of the eye received the best possible attention at the earliest stage, and spectacles were dispensed with but little loss of man hours or transport time.

The motto of spectacles “Whilst you wait” and “Wherever you wait” has been truly honoured by the optical teams of the C.M.F. Even at Anzio whilst under constant shellfire, S/ Sgt. Burns and Pte. Leckie, R.A.M.C., prevented the evacuation of many scores of men by providing them with renewed or repaired spectacles on the spot. It is a little difficult to imagine spectacles as a forward commitment, but experience has amply proved this to be the case.

(2) To fuse the ophthalmic departments of several adjacent general hospitals into one Base Ophthalmic Wing, with a senior specialist as chief and other specialists as his assistants. Such a wing has 60-200 beds and here also is located trained nursing staff, optical facilities and special equipment such as diathermy, etc. To one of these Base Ophthalmic Wings has now been added an ophthalmic artist, a school of instruction, and a welfare department run by a worker from St. Dunstan's.

(3) To pay special attention to raising the standard of ophthalmic nursing in the Army and to this end special courses and demonstrations are held. An ophthalmic sister in the army is expected to be able to supervise the administration of an ophthalmic ward and to carry out all theatre duties. She must also have a detailed knowledge of ophthalmic equipment and instruments and

be able to carry out such procedures as silvering the conjunctiva, syringing lacrimal ducts, tonometry, mydraine injections, etc., and to have a working knowledge of the use of the perimeter and ophthalmoscope. A Memorandum on Ophthalmic Nursing, A.F.H.Q. has been published.

Every Base Ophthalmic Wing in the C.M.F. has now two or more such skilled sisters according to their size.

(4) To centralise ophthalmic stores and equipment so that there is the minimum delay in supply, Q.M.S. Smith, R.A.M.C., as senior optician, is responsible for this duty and distributes the supplies which the Consulting Ophthalmologist to the Army has always directed without stint to this Force. As a result, complaints of delay have been negligible.

(5) To educate junior medical officers in the preliminary care of eye cases. For this purpose, a small memorandum was published as follows:—

Memorandum of Ophthalmology

"The Preliminary Care of Ophthalmic Cases"

The following notes are issued for the guidance of Medical Officers in the care of their ophthalmic cases.

(A) Medical Officers are expected to retain and treat cases of:

- (1) Simple conjunctival catarrh and conjunctivitis;
- (2) Styes;
- (3) Superficial foreign bodies in the eye;
- (4) Acute abscess of Meibomian gland;
- (5) Non-infected corneal abrasions;
- (6) Superficial burns, wounds and abrasions of lids.

(B) Medical Officers are expected to refer to the ophthalmic specialist cases of:

- (1) Severe injuries and burns of lids and/or eyes;
- (2) Difficulty in diagnosis; aggravation of symptoms and delayed response to treatment;
- (3) Defects of vision from any cause;
- (4) Suspected error of refraction;
- (5) Chronic blepharitis;
- (6) Corneal ulcers, infected corneal abrasions and iritis, etc.

(C) Cases referred should have:

- (1) A.B.64 Part I;
- (2) Old spectacles (if any);
- (3) Haversack rations;
- (4) Appointments—unless emergencies;
- (5) Relevant notes on AFB 256 or in lieu thereof;
- (6) If (a) accurate prescription is in A.B.64; (b) spectacles are less than two years old; (c) spectacles are comfortable, the M.O. should send an AF.I 1240 in duplicate to the nearest optical unit or ophthalmic specialist.

General instructions

(1) Always tell the ophthalmic patients what you are going to do—they are often apprehensive.

(2) Use the best illumination for inspecting an eye; mistakes in ophthalmology are generally of omission rather than commission.

(3) Look before touching; you may miss an artificial eye or squint; inspect lashes and lids, etc., in a systematic manner from before backwards, and handle the lids gently at all times.

(4) In cases of lid spasm reassure the patient, instruct him to relax and to open both eyes. Never force the lids open.

(5) Use care in instilling oculets; severe corneal abrasions have been caused by rough insertion.

(6) When instilling drops, instruct the patient to open both eyes and look upwards. Warn him and then run the drops in gently on to the conjunctiva. Do not drop them on the cornea from a height.

(7) Test the temperature of all lotions on the back of the hand before washing out an eye. Wash out eyes only if there is something to wash out, *i.e.*, discharge and not merely for redness. Never tie up a discharging eye.

(8) Except in cases of severe injury, corneal abrasions or ulcer, it is rarely necessary to tie up an eye; flaps or dark spectacles are preferable. When in doubt use a flap.

(9) Watch for sulphonamide reactions of the face.

(10) Ophthalmic specialists are always ready to help and they are aware of the limited instruction in ophthalmology which most medical officers have received.

Special instructions

(A) *Chronic Blepharitis*. If recurrent or severe, should be graded to A.4 or E.

(1) Cut lashes with vaseline scissors.

(2) Hot spoon baths and expression of pus from lash follicles.

(3) 1 per cent. silver nitrate paint to conjunctiva.

(4) Ung. or liq tinctorium is applied to lid margin: penicillin cream.

(5) Daily spirit shampoos of scalp and eyebrows.

(6) Frequent general hot baths with skin friction.

(7) Low fat diet—saline laxatives; vitamin therapy.

(8) Ung. Hyd. Ox. Flav is frequently irritant.

(B) *Stye*.

(1) Hot spoon baths.

(2) Extraction of lash; expression of pus.

(3) If multiple or recurrent, refer for investigation.

(4) No eye covering.

(C) *Meibomian Cyst.*

- (1) Acute—hot spoon baths and expression—no eye pad.
- (2) Chronic—refer for investigation, incision and curettage (O.P.).

(D) *Conjunctival Catarrh.*—Denoted by general redness of the eyes with no pain or sticking of the lids.

- (1) Remove cause such as dust irritation, sun or smoke.
- (2) Refer for investigation.

(E) *Conjunctivitis.*—Denoted by sticking of the lids every morning.

- (1) Two hourly irrigations with lotio normal saline or weak tea followed by 1/2000 flavine drops.
- (2) Application of 1 per cent. silver nitrate paint to the conjunctiva.
- (3) Cut lashes.
- (4) Atropine if there is likely corneal involvement.
- (5) Smear vaseline on lid margins at night.
- (6) No spoon baths and no pads.
- (7) Use flaps or tinted spectacles instead.
- (8) If purulent, isolate or refer for investigation.
- (9) Persistent conjunctivitis, especially in Italian Ps.O.W. suggests trachoma.

(F) *Corneal Foreign Body.*

- (1) Attempt gentle removal by cotton wool wisp or clean handkerchief, followed by saline irrigation.
- (2) If unsuccessful instil 4 per cent. cocaine and use sterile darning needle or spud.
- (3) Tie up until next day.
- (4) If unsuccessful removal or unduly red next day, instil atropine, tie up and refer.

(G) *Corneal Ulcer.*

- (1) Four hourly spoon baths.
- (2) Atropine 1 per cent.
- (3) If lids do not stick, tie up and do not wash out.
- (4) If lids stick, paint conjunctiva with 1 per cent. silver nitrate; use irrigation and a flap, and cut lashes.
- (5) If no improvement in 24 hours, refer.

(H) *Corneal Abrasions.*—Easily diagnosed by bright green stain after fluorescein.

- (1) After small abrasions by twig or finger nail tie up the eye overnight.
- (2) For large or infected abrasions, instil atropine, tie up and refer.

(I) *Injury.*

- (1) Look before touching. Advise patient to open both eyes and not to squeeze lids.

- (2) Never force open lids in injuries of the globe—the globe may be ruptured underneath.
- (3) Always instil atropine, tie up one or both eyes and refer.
- (4) Always refer cases of a foreign body in the eye received whilst using a hammer and chisel.
- (5) Always refer cases of penetrating wounds indicated by iris prolapse and pupil irregularity; tie up firmly.
- (6) Give aspirin or morphia for the pain.
- (7) Use pulv. sulphanilamide for open lid wounds.

(J) Burns.

- (1) Instil cocaine if there is severe lid spasm.
- (2) Wash out thoroughly with warm normal saline irrigations.
- (3) Paroleine or vaseline is soothing.
- (4) For severe cases instil atropine; tie up and refer. Pulv. sulphanilamide to lid burns.
- (5) No covering is necessary for mild cases.

(K) Sockets.

- (1) Inspect artificial eyes for roughness of edges or loss of enamel. Replacements are available in good supply.
- (2) Infected sockets should be painted with 1 per cent. silver nitrate and irrigated with normal saline lotion; cut lashes.
- (3) Sockets should not be tied up; use a flap.

Unit requirements**Drugs.**

- (1) Cocaine 2 per cent. to 4 per cent. or oculets.
- (2) Paint 1 per cent. silver nitrate in dark glass bottle.
- (3) Lotio normal saline.
- (4) Atropine 1 per cent. or oculets.
- (5) Fluorescein 2 per cent. or oculets.
- (6) Paroleine, castor oil or vaseline.
- (7) Brilliant green 1 per cent.—Gentian violet 1 per cent. paint or ointment.

Appliances.

- (1) Wooden jam spoons (unit carpenter).
- (2) Eye droppers or cotton-wool pledgets.
- (3) Sterile darning needle or spud.
- (4) Round 50 cigarette tin—for irrigation.
- (5) Stick applicators (spills).

Dressings.

- (1) Lint flaps.
- (2) Pads.
- (3) Strapping adhesive $\frac{1}{2}$ inch.
- (4) Cotton wool.
- (5) Bandages 2 inch.

The object of this publication was to stimulate interest and to ensure proper care at the earliest possible moment.

(6) To establish welfare arrangements for the care of the totally blind. Close co-operation has always been maintained with the authorities at St. Dunstan's and a special welfare department has been formed at Naples. Blind patients visit the opera and concerts weekly whilst awaiting evacuation.

In present hostilities then the usual course of a soldier with an eye wound is to be transported by the field ambulance of his division to a Main Dressing Station and thence to a C.C.S. where a Mobile Ophthalmic Unit is attached. There, the eye condition is dealt with probably by magnet extraction of the foreign body, excision of prolapses and the application of a conjunctival flap and penicillin so that the eye is made "travel safe" within an hour or two after the wound has been received. From the Mobile Ophthalmic Unit the patient, specially labelled as an ophthalmic case, is transported, often by air, to a Base Ophthalmic Wing where conditions not far short of ideal are maintained. Most Wings are located in modern hospital buildings and there is little need for improvisation.

FIG. 1.

Livingstone hand electro-magnet.

FIG. 2.

The army portable giant magnet stand, C.M.F. type.

(7) *Research*.—An active theatre of operations is hardly conducive to academic research but necessity has as ever been the mother of invention. In Tunisia the shortage of hand electro-magnets stimulated Capt. Livingstone, R.A.M.C., to produce from bits of a Sherman tank and a Daimler Scout car a small electro-magnet which has proved of great value and has since been adopted by the War Office. (Fig.1.)

A local design for suspending the Army giant magnet has also been evolved. This is of the gallows pattern with wire and pulley suspension, and "finger light" adjustment. (Fig. 2.) One of the happy features of this campaign has been the close collaboration of R.E.M.E. and the R.A.M.C. From all sides one hears of the willing help given by R.E.M.E. and the skilled technicians of that Corps. For ophthalmologists they have constructed such things as giant magnet stands, magnets, Perspex globes and electric eye warmers, etc.

So successful has this collaboration proved that a special surgical workshop, staffed by R.E.M.E. craftsmen, has been set up and there is practically no surgical instrument which cannot be made or repaired there.

Delicate ophthalmic scissors and knives are now replated and sharpened without delay; captured ophthalmic equipment is re-conditioned and put into service and various spares are speedily

FIG. 3.

Anti-mine perspex visor.

distributed, all of which contributes to the healthy situation of stores in this theatre and lessens the strain on home production.

The advent of mine warfare directed interest towards the prevention of penetrating wounds and an anti-mine visor of Perspex has been devised and is in use. (Fig. 3.)

Penicillin in its relation to ophthalmology has been investigated by ophthalmologists of this force, and their conclusions are given later.

Clinical Ophthalmology in Sicily and Italy

The campaign in Sicily and Italy found ophthalmologists well prepared for their task for they had been well schooled in the treatment of battle casualties both in the Western Desert and in North Africa.

Their equipment had been increased and their sisters now felt secure in knowing they would be left in ophthalmic work—a further inducement to efficiency. Furthermore the administration mentioned above was being gradually implemented and they saw themselves, not as isolated members of General Hospitals, as hitherto, but as components in a team of surgeons, sisters, opticians and staff which was spread far and wide through three countries, but integrated and co-ordinated at headquarters. Major-General Hartgill, O.B.E., M.C., was now the Director of Medical Services.

Intra-ocular foreign bodies

The proved policy in this theatre is that all penetrating wounds of the eye are put to the giant magnet as soon as possible after the injury. In this way 50-60 per cent. of all magnetisable intra-ocular foreign bodies are removed in good time. Thereafter prolapses are excised, wound edges cleared and sutured, penicillin applied and a conjunctival covering adjusted. Few attempts at formal removals are made in Forward Areas. If the foreign body does not come through the wound of entry the job is left to colleagues at the Base Ophthalmic Wings. Here radiographic localisation is more precise. For general purposes the equatorial ring method was introduced by Major H. H. Skeoch, R.A.M.C., and although it does not claim to be minutely accurate it serves most purposes. A 26 millimetre ring of silver or stainless steel wire is slipped around the globe into the fornices under local anaesthesia. Two lateral shift pictures are taken and one in the occipito-mental position so that the relationship of the intra-ocular foreign body to the surface of the globe is defined. Care should be taken to differentiate foreign bodies in the lids, sclera and extra-ocular muscles.

On those rare occasions when it is necessary to localize a non-magnetisable intra-ocular F.B. prior to removal, the method of choice is that of the limbal ring as introduced by Brigadier Graham in the Middle East. A 12 mm. ring is firmly stitched to the limbus by four stitches: lateral shift and occipito-mental pictures are taken in the usual way and from these the centre of rotation of a schematic eye can be deduced by erecting perpendiculars to the centre of the ring axis. When due allowance is made for the magnification, generally about 1/6th, the position of the intra-ocular F.B. can be plotted accurately.

The types of foreign bodies encountered showed the progress of the armies. When static or in defence, shells and mortars accounted for most of them but when the army advanced after Cassino, mines became the greatest menace. Mine fields were grafted on to natural defensive barriers and truly "All roads to Rome were mined."

At one time in this period, 60-70 per cent. of all battle eye cases were due to the Schu mine. This is a small anti-personnel mine enclosed in a wooden or glass box and contains practically no metal, it is consequently almost undetectable. The effect on the eyes is to drive numerous tiny grit or glass particles into the cornea and beyond with appalling physiological results. Other foreign bodies found have been bakelite and brass from detonator caps, nickel from bullet casings, aluminium from igniters, stone from the road and bits of bone from a neighbour.

2. *Deep Intra-ocular Infections.*—This has been a major problem and the results of experience will be summarised. First, some attempt is made at prevention of mine eye wounds by the use of the Perspex anti-mine visor. Then, general surgeons at Field Surgical Units are urged to carry out first aid eye treatment aimed at preventing infection such as lid cleansing, lash cutting and the routine instillation of atropine. Next, the skill of the Mobile Ophthalmic Unit is brought to bear and wounds are quickly sealed along with liberal applications of penicillin.

At the Base, protein shock and sulphonamide therapy are added along with more remote surgical measures.

In this theatre penicillin has been used for eye cases during the past year. The consensus of opinion is as follows:—

(a) Gtt. penicillin 1,000 units per c.c., are excellent for certain types of conjunctivitis, for dirty sockets and pre-operation sterilization of the conjunctiva.

(b) Unguentum penicillin in lanette wax is very useful for seborrhoeic blepharitis and for early application to multiple infected face and lid wounds.

(c) Powdered penicillin is insufflated into all penetrating wounds of the eye and is an excellent preventive of infection during evacuation.

(d) Intra-muscular penicillin has not proved of great value in the treatment of deep intra-ocular sepsis and there is considerable doubt as to whether the drug enters the ocular media when given to any extent by this route. Intravitreal and subconjunctival injections, especially the latter, offer more hope. There is not the least doubt that penicillin represents a great advance in the prevention and treatment of ocular sepsis.

3. *The Loss of an Eye.*—The practice in this theatre is to perform the Lister frill excision for disorganised eyes when seen at

an early stage and at later stages an enucleation with the implantation of a 14 mm. perspex globe in Tenon's capsule is carried out. The old evisceration operation is practically never done and the usual method of enucleation alone is becoming infrequent. To clean up a dirty socket the application of 2 per cent. silver nitrate paint and penicillin along with upper lid straps to allow ingress of air into the socket has worked wonders. Plastic operations are discouraged and are left for our more expert colleagues at home.

This is but the first chapter in the story of ophthalmology of the Central Mediterranean Forces to date but it may give some idea of what is going on; there is much more to be told.

The ophthalmic surgeons, sisters and staff here have brought this service to a high peak of efficiency: others also outside the theatre have played an important part without which the job could not be done. Brigadier Sir Stewart Duke-Elder has always seen to it that every demand for ophthalmic and optical supplies from this theatre has been met and when these supplies have come we are conscious of what we owe to the workmen and technicians at home who have provided them. Knowing as I do the ophthalmic equipment of practically all the Allied and enemy nations I can say without hesitation that British equipment is second to none.

Finally, my grateful thanks are due to Brigadier H. C. Edwards, Consulting Surgeon, A.F.H.Q., and to Colonel T. Menzies, O.B.E., for constant advice, encouragement and co-operation at all times.

ANNOTATIONS

Ophthalmology in Race-horses

It must occasionally have happened to most of us to have been asked to give an opinion on the eyes of some animal or other. Sometimes a friend will have brought a dog or cat; and at other times a veterinary surgeon has referred one of his clients to us. But although the late Mr. Lindsay Johnson was reputed to have interviewed a python at the Zoo, few of us can ever have had to pronounce judgment on a race-horse.

A rumour that this year's winner of the Derby had been under the care of an ophthalmic surgeon some time before the race set us wondering what can have been the matter and whether ophthalmic treatment can have had any bearings on the result of the race.

Whether Rosinante was submitted to ophthalmic treatment before Don Quixote's contest with the windmills or the flock of sheep is unrecorded as far as we remember. But Mr. Jorrocks's