moreover, highly effective in stubborn cases which have proved resistant to the usual methods of treatment.

From the bacteriological viewpoint, penicillin, as employed in this investigation, eradicates sensitive organisms from the conjunctiva in a few days. It cannot, however, prevent reinfection after the cessation of treatment, and we saw no reason to believe that effective therapy with penicillin established any immunity to recurrent infection. In this connection, it is noteworthy that in the cases of this series which showed bacteriological relapse, the organisms causing the relapse were as sensitive to penicillin as were those causing the original infection.

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We wish to thank Colonel O. J. O'B. O'Hanlon and Colonel C. D. M. Buckley, M.C., for providing facilities for the investigation, and Captain A. Stanworth for his assistance with the clinical side of the work.

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THE INCIDENCE OF EYE DISEASE IN THE AUSTRALIAN IMPERIAL FORCES, MIDDLE EAST*

BY

Major J. BRUCE HAMILTON, A.A.M.C.

In the *Australian Medical Journal* of January 10, 1942, I published for future medical historians a survey of 6,458 private patients seen in Tasmania between 1931-1939, with 14,317 diseased conditions under 239 disease headings. This gave a ratio of 2.22 diseases per patient. At the conclusion I promised a similar table of eye disease in the Australian Imperial Forces, and now I have pleasure in submitting it. This A.I.F. survey deals with 3,638 patients seen during 1941-1942, with 6,650 diseased conditions under 226 disease headings. This gives a ratio of 1.55 diseases

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per patient. For simplicity I have arranged the figures and percentages of civil and war eye disease side by side in the five tables presented, and for convenience have grouped certain diseases together in four tables. Table No. I is a general survey; in Table II are found the eye injuries; in Table III the visual disorders; in Table IV the muscular abnormalities; and in Table V the keratitis cases. These seemed to be the four groups worthy of special comparative study.

Tables are unsatisfactory reading at all times, so I feel that some generalised comments will be more stimulating. Can it be possible that in war there is less eye disease than in civil life? Definitely it appears so from those figures quoted in paragraph one. Certainly there are less eye injuries, despite the fact that these figures contain casualties from three active campaigns of the A.I.F. Table II shows the civil eye injuries as 15.6 per cent. and the army injuries as 9.4 per cent. On the medical side iritis, keratitis, choroiditis, and retinitis are also lower.

Mentioning iritis makes me emphasise the fact that despite the high incidence of gonorrhoea and dysentery in the Middle East, there is not one case of iritis in these figures from either disease. Interstitial keratitis showed a 0.16 per cent. incidence, while gonococcal ophthalmia has not occurred. It only stresses the fact that disease treatment in the A.A.M.C. is of the very highest order and complications at the very lowest ebb.

The loss of an eye is even lower in military than in civil practice, and so apparently is traumatic iris prolapse and traumatic cataract (see Table II). Vitreous haemorrhage is higher, but this is due to blast effect in battle, and is analogous to an ear-drum perforated by blast. But why the retinal detachment figures are so ridiculously low with so many other manifestations of blast in the body I am unable to determine.

Sympathetic ophthalmia has not been seen by me in military practice, despite the fact that I have had no facilities for slit-lamp microscopy.

The visual disorders, Table III, show a very high proportion of refractive errors, and disclose a number of visually B class men who have slipped through the rushed recruiting in Australia. It still further stresses the necessity of recruits with less than 6/9 vision in either eye being submitted to an ophthalmic examination before acceptance for overseas service.

The muscle anomalies (Table IV) were heavy, and many needed treatment. The result of these treatments will be recorded in a special report by me on this subject entitled "orthoptics in the field." Of more than passing significance were 17 cases of overaction of the inferior oblique, which cases I feel must be analysed at a later date.

The virus keratitis cases were very troublesome, and on the whole had a higher incidence than in Australia. I have written notes on these specific conditions in the Middle East, and they are to be published at a later date under the title "notes on forms of keratitis presumably due to the virus of herpes simplex." Suffice here to say that any pyrexia (malaria, relapsing fever, dysentery, or even T.A.B. injections) precipitate an attack of virus keratitis in one or both eyes, and that in the hot climate of the Middle East a virus corneal infection is difficult to eradicate (see Table V).

Glare asthenopia at 4.153 per cent. of cases and illumination deficiencies of 0.700 per cent. call for special comment, for none is recorded in my Tasmanian figures. The extremes of illumination manifest in the Middle East are responsible for the high eye consultation rate in the A.I.F. From desert glare when driving by day to black-out driving by night or to hurricane lamp for reading produces a contrast intolerable to many eyes. I have strongly advocated goggles for driving and petrol lamps for reading, and I must thank the Australian Red Cross for their continued help in the matter of goggles for the troops.

Pterygia showed a high incidence in the A.I.F., but then this disease is very prevalent both in tropical Australia and tropical Levant, while in Tasmania it is of little account. Nevertheless, in the Middle East very few pterygia required operative treatment, and when they were marsupialised the operation field remained irritable for months.

The amblyopias need to be mentioned. There are as many amblyopias ex anopsia, in army personnel as in civil life, 3.696 per cent. to 3.778 per cent. respectively, which again stresses too rapid recruiting. The functional amblyopias, on the other hand, are four times as common, which is only to be expected. The discrepancy between army and civil figures in congenital amblyopia I cannot explain.

I pointed out in my article of January 10, 1942, that hypopyon ulcer or hypopyon iritis was very rare in Tasmania, namely, 0.17 per cent. But in the army it is almost unknown at 0.084 per cent. This low military figure is possibly due to the early exhibition of sulphanilamide or its derivatives by mouth—for none of my patients had local application of these substances, as they were not procurable.

Iridocyclitis is extremely rare in the army, and four out of five of the cases were due to spirochaetal relapsing fever, detailed in "The ocular complication of relapsing fever," in course of publication. These four cases all recovered normal vision spontaneously and were not influenced by arsenic.

Anisocoria of non-Argyll Robertson and non-myotonic type is twice as prevalent in the army as in civil life. This is not due

to syphilis, as I have proved by many Kline tests, but is due to a high incidence of sandfly fever and anxiety state. Although these two diseases are aetiologically poles apart, they nevertheless seem to precipitate a similar type of anisocoria—that is, one which is transient and not permanent, and does not affect pupillary reactions to light and convergence.

Tropical or Egyptian ophthalmia was not once found in the whole series. This is astounding when it is realised that this was the major factor in bringing ruin to Napoleon's Egyptian campaign in 1800 A.D., and was the cause of some anxiety in the 1914-1918 campaign in the Middle East. Trachoma likewise was not contracted in one instance in the Middle East in my 3,638 patients, the whole of the 16 army cases having had their original infection in Australia prior to enlistment. Certainly hygiene was far better in 1941-1942 than in 1800, but with many military camps in 1941-1942 in close contact to Arab villages, in a country where trachoma and ophthalmia are rife, it makes one wonder how immunity to these dangers has changed so rapidly in 140 years.

Finally, those patients without any disease to account for symptoms. These figures (like functional amblyopia) were three times as high in the A.I.F. as they were in civil practice, but to find only 200 unnecessary consultations out of 3,638 soldiers reflects the greatest credit on the sagacity of the Unit R.M.Os. It is appropriate to remark here on the close co-operation prevailing in all branches of the A.A.M.C. and on the excellent consultation service always available to the men of the A.I.F.

In conclusion, I should like to thank the ophthalmic staff of an Australian General Hospital for their help with these figures, which have had my personal supervision throughout. Colonel J. G. Hayden, who commands this hospital, has given his permission for these figures to be published, for which I thank him also.

References

Except for my article on "Eye Disease in Tasmania," published in the *Medical Journal of Australia* on January 10, 1942, there is no available literature at my disposal on this subject. My articles on "The ocular complication of relapsing fever," "notes on forms of keratitis presumable due to the virus of herpes simplex," and "orthoptics in the field" are in the process of publication either in the *British Journal of Ophthalmology* or in the *Medical Journal of Australia*.

TABLE I
COMPARATIVE TABLES OF EYE DISEASES, ETC.

1. Private Practice, Hobart 1931-1939. 6458 patients, showing 14,317 diseased conditions, 239 diseases.
2. 7th A.G.H., Middle East, May 1941-November 1942. 3638 Australian patients, 5650 diseased conditions, 226 diseases.

List of Diseases, etc.	Civil	Per cent.	War	Per cent.
Abscess of brow	18	0.279	—	—
Abscess of caruncle	—	—	1	0.027
Accommodation, paralysis of	37	0.573	10	0.275
Albinism	5	0.077	—	—
Alopecia of eyebrow	—	—	1	0.027
Amblyopia, congenital	35	0.542	5	0.137
Amblyopia ex anopsia	244	3.778	132	3.628
Amblyopia, functional	14	0.217	32	0.879
Anaesthesia of cornea	3	0.046	1	0.027
Anaesthesia of orbital nerves	3	0.046	3	0.082
Angioid streaks	4	0.062	—	—
Angioma	5	0.077	6	0.165
Angioneurotic oedema	2	0.031	1	0.027
Anisocoria	91	1.409	92	2.529
Anisometropia	82	1.270	38	1.045
Anophthalmos	83	1.285	24	0.660
Anopia, quadrant and hemi.	16	0.248	4	0.110
Aphakia	153	2.369	6	0.165
Argyll Robertson pupil	5	0.077	2	0.054
Argyrosis	10	0.155	—	—
Atropine irritation	12	0.186	4	0.110
Birth Injuries	34	0.526	1	0.027
Blepharitis, simple	153	2.369	112	3.079
Blepharitis, ulcerative	7	0.108	6	0.165
Blepharospasm, functional	—	—	1	0.027
Burn of conjunctiva	10	0.155	8	0.220
Burn of cornea	12	0.186	4	0.110
Burn of lid	—	—	3	0.082
Burn of retina	—	—	2	0.055
Canaliculus, laceration of	3	0.046	3	0.082
Cataract, anterior polar	4	0.062	3	0.082
Cataract, blue dot	11	0.170	2	0.055
Cataract, complicated	50	0.774	5	0.137
Cataract, congenital	64	0.991	8	0.220
Cataract, diabetic	38	0.588	—	—
Cataract, glassblowers'	1	0.015	—	—
Cataract, lamellar	5	0.077	2	0.055
Cataract, senile	669	10.359	6	0.165
Cataract, traumatic	54	0.836	28	0.770
Cataract, X-ray	1	0.015	—	—
Chalazion	112	1.734	68	1.869
Choroid, atrophy (post traumatic)	—	—	2	0.055
Choroid, detachment of	1	0.015	—	—
Choroid, rupture of	5	0.077	3	0.082
Choroid, sarcoma of	11	0.170	1	0.027
Choroid, stretching of	39	0.604	—	—
Choroiditis, acute	9	0.139	2	0.055
Choroiditis, Tay's	63	0.975	14	0.385
Choroido-retinitis	168	2.601	90	2.474
Coloboma of retina	—	—	1	0.027
Colobomata of choroid	4	0.062	—	—

TABLE I—*continued*

List of Diseases, etc.	Civil	Per cent.	War	Per cent.
Colobomata of disc	3	0.046	—	—
Colobomata of iris	1	0.015	2	0.055
Colobomata of lid	5	0.077	2	0.055
Colobomata of macula	1	0.015	—	—
Colour blind	12	0.186	5	0.137
Conjunctival abrasion	5	0.077	1	0.027
Conjunctival cyst	10	0.155	2	0.055
Conjunctival foreign bodies	39	0.604	14	0.385
Conjunctival keloid	—	—	1	0.027
Conjunctival laceration	14	0.217	5	0.137
Conjunctivitis, acute, allergic	7	0.108	5	0.137
Conjunctivitis, acute, bac. unknown	89	1.378	108	2.968
Conjunctivitis, acute Koch-Weeks'	9	0.139	—	—
Conjunctivitis, acute, ophth. neona.	15	0.232	—	—
Conjunctivitis, acute, pneumococcal	8	0.124	—	—
Conjunctivitis, acute staph. and strep.	7	0.108	1	0.027
Conjunctivitis, angular	39	0.604	8	0.220
Conjunctivitis, chronic	243	3.763	198	5.443
Convergence excess	93	1.440	14	0.385
Convergence insufficiency	185	2.555	178	4.893
Corectopia	—	—	1	0.027
Corneal abrasion	81	1.254	12	0.330
Corneal abrasion recurrent	5	0.777	—	—
Corneal calcareous degeneration	4	0.062	—	—
Corneal erosions multiple	16	0.248	17	0.467
Corneal foreign bodies	104	1.610	70	1.924
Corneal laceration	12	0.186	3	0.082
Corneal nebulæ	244	3.778	65	1.787
Corneal staphyloma	2	0.031	—	—
Corneal ulcer	138	2.137	28	0.770
Cyclitis	14	0.217	7	0.192
Cyclitis, sympathetic	2	0.031	—	—
Cyclophoria	12	0.186	4	0.110
Dacryoadenitis	—	—	2	0.055
Dacryocystitis, acute	18	0.279	1	0.027
Dacryocystitis, chronic	79	1.223	7	0.192
Dendritic ulcer	14	0.217	15	0.412
Dermoid of brow	1	0.015	—	—
Dermoid of lid	1	0.015	2	0.055
Dermoid of limbus	1	0.015	—	—
Dermoid of orbit	1	0.015	—	—
Diplopia, functional	—	—	1	0.027
Disseminated sclerosis	1	0.015	1	0.027
Divergence excess	13	0.201	1	0.027
Divergence insufficiency	108	1.672	81	2.226
Drusen	—	—	2	0.055
Eales' Disease	3	0.046	1	0.027
Ectropion	41	0.635	2	0.055
Electric ophthalmia	2	0.031	—	—
Embolism of central artery	3	0.046	1	0.027
Endophthalmitis	3	0.045	—	—
Enophthalmos	4	0.062	—	—
Entropion	7	0.108	1	0.027
Epicanthus	11	0.170	—	—
Episcleritis	10	0.155	2	0.055
Eserine irritation	9	0.139	1	0.027
Esophoria	199	3.081	177	4.865
Esotropia	185	2.555	46	1.264
Exophoria	425	6.581	125	3.433
Exophthalmos	26	0.403	7	0.192

TABLE I—continued

List of Diseases, etc.	Civil	Per cent.	War	Per cent.
Exotropia	89	1·378	29	0·797
Furuncle of caruncle	—	—	2	0·055
Glare asthenopia	—	—	151	4·151
Glaucoma, acute	8	0·124	1	0·027
Glaucoma, chronic	78	1·208	2	0·055
Glaucoma, secondary	50	0·774	3	0·082
Glioma retinae	2	0·031	—	—
Globe, contusion of	38	0·588	5	0·137
Globe, perforation of	64	0·991	11	0·302
Haemangioma	9	0·124	1	0·027
Haemorrhage, retinal	39	0·604	—	—
Haemorrhage, subconjunctival	62	0·960	20	0·550
Haemorrhage, subhyaloid	3	0·046	1	0·027
Herpes ophthalmicus	18	0·279	—	—
Heterochromia	9	0·139	2	0·055
Hordeolum	180	2·478	123	3·353
Horner's syndrome	4	0·062	2	0·055
Hyaloid, persistent	7	0·108	5	0·137
Hypermetropia	260	5·543	234	6·432
Hypermetropic astigmatism	1949	30·149	1044	28·697
Hyperphoria	107	1·657	23	0·632
Hyphaema	28	0·434	15	0·412
Hypopyon	11	0·170	3	0·082
Hypothyroidism	3	0·046	—	—
Icteroid conjunctiva	—	—	3	0·082
Illumination deficiency	—	—	25	0·687
Intracranial tumour	17	0·263	1	0·027
Intraocular foreign bodies	10	0·155	17	0·467
Iris, atrophy of	5	0·077	—	—
Iris, bombe	11	0·170	—	—
Iris, prolapse of	12	0·186	5	0·137
Iris, perforation of	5	0·077	—	—
Iris, sphincter rupture	6	0·093	3	0·082
Iridocyclitis	55	0·851	5	0·137
Iridodialysis	9	0·139	1	0·027
Iritis, acute	44	0·681	7	0·192
Iritis, diabetic	5	0·077	—	—
Iritis, old	26	0·403	5	0·137
Jaw blinking	—	—	1	0·027
Keratitis (unspecified)	16	0·243	9	0·247
Keratitis acne rosacea	11	0·170	—	—
Keratitis bullous	4	0·062	—	—
Keratitis disciform	3	0·046	5	0·137
Keratitis filamentary	3	0·046	—	—
Keratitis herpetic	—	—	3	0·082
Keratitis interstitial	29	0·449	6	0·165
Keratitis lagophthalmos	5	0·077	2	0·055
Keratitis marginal	60	0·929	47	1·292
Keratitis mustard gas	2	0·031	—	—
Keratitis neuroparalytic	9	0·139	—	—
Keratitis profunda	12	0·186	1	0·027
Keratitis, striate	8	0·124	1	0·027
Keratitis, superficial	15	0·232	2	0·055
Keratitis, superficial punctate	95	1·471	37	1·017
Keratitis, vesicular	11	0·170	9	0·247
Keratoconus	32	0·495	2	0·055
Keratoglobus	—	—	1	0·027
Lacrimal fistula	3	0·046	1	0·027
Lashes, itinerant	8	0·124	—	—
Lens, dislocation of	15	0·232	3	0·082

TABLE I—*continued*

List of Diseases, etc.	Civil	Per cent.	War	Per cent.
Leucoma	13	0.201	5	0.137
Lid, abrasion	4	0.062	—	—
Lid, abscess	—	—	2	0.055
Lid, concretions	30	0.464	20	0.550
Lid, contusion	16	0.248	8	0.220
Lid, dermatitis	20	0.310	11	0.302
Lid, fibromata	—	—	1	0.027
Lid, foreign bodies	6	0.093	5	0.137
Lid, herpes	4	0.062	6	0.165
Lid, laceration	11	0.170	26	0.715
Lid, papilloma	27	0.418	2	0.055
Lid, retention cyst	19	0.294	—	—
Lid, retraction	18	0.279	2	0.055
Lid, sebaceous cyst	—	—	4	0.110
Lid, tropical ulcer	—	—	1	0.027
Lid, warts of	11	0.170	1	0.027
Lupus Vulgaris	1	0.015	—	—
Macula, hole at	5	0.077	2	0.055
Macula, massive haemorrhage	2	0.031	—	—
Macula, senile pigmentary degeneration	104	1.610	7	0.192
Magalocornea	10	0.155	2	0.055
Melanoma of caruncle	—	—	3	0.082
Melanoma of iris	7	0.108	—	—
Melanoma of retina	25	0.387	5	0.137
Mickulicz's disease	1	0.015	—	—
Microcornea	5	0.077	4	0.110
Microphthalmia	5	0.077	2	0.055
Migraine	38	0.588	10	0.275
Miosis	4	0.062	4	0.110
Mixed astigmatism	654	10.127	301	8.274
Mydriasis	20	0.310	11	0.302
Myiasis, ocular	—	—	1	0.027
Myopia	96	1.487	30	0.820
Myopic astigmatism	1043	16.150	406	11.160
Myotonic pupil	7	0.108	—	—
Myxoedema	3	0.046	—	—
Naevus, pigmented	23	0.356	4	0.110
Nasal accessory sinus infection	24	0.371	3	0.082
Nothing abnormal diagnosed	115	1.781	200	5.500
Nystagmus	60	0.929	6	0.165
Night blindness	—	—	4	0.110
Obstruction, naso-lacrimal duct	55	0.851	3	0.082
Obstruction, punctum canaliculus	37	0.573	3	0.082
Occlusion of posterior cerebral artery	11	0.170	—	—
Oedema of lid, insect bite	2	0.031	—	—
Oedema of lid, thyrotoxicosis	1	0.015	4	0.110
Opaque nerve fibres	13	0.201	5	0.137
Ophthalmia, snow	—	—	1	0.027
Ophthalmia, sympathetic	2	0.031	—	—
Optic atrophy, Leber's	6	0.093	1	0.027
Optic atrophy, primary	30	0.464	3	0.082
Optic atrophy, secondary	13	0.201	4	0.110
Optic disc, cyst of	2	0.031	1	0.027
Optic nerve, contusion of	—	—	2	0.055
Orbital cellulitis	2	0.031	—	—
Orbital foreign bodies	2	0.031	10	0.275
Oval pupils	—	—	6	0.165
Overaction of inferior oblique	4	0.062	17	0.467
Overaction of superior oblique	—	—	1	0.027
Panophthalmitis	3	0.046	1	0.027

TABLE I—*continued*

List of Diseases, etc.	Civil	Per cent.	War	Per cent.
Papillitis	23	0.356	4	0.110
Papilloedema	9	0.139	2	0.055
Paralysis, external rectus	22	0.341	1	0.027
Paralysis, facial or orbicularis	21	0.325	9	0.247
Paralysis, inferior oblique	1	0.015	2	0.055
Paralysis, inferior rectus	1	0.015	1	0.027
Paralysis, internal rectus	4	0.062	1	0.027
Paralysis, superior oblique	2	0.031	3	0.082
Paralysis, superior rectus	14	0.217	3	0.082
Paralysis, 3rd nerve	12	0.186	1	0.027
Paralysis, 3rd and 4th nerves	1	0.015	—	—
Paralysis, 3rd and 6th nerves	5	0.077	—	—
Paralysis, 5th nerve	—	—	1	0.027
Paralysis, 6th nerve	13	0.201	3	0.082
Pemphigus	—	—	2	0.055
Perivasculitis	2	0.031	—	—
Phlycten	42	0.650	—	—
Phthisis bulbi	10	0.155	1	0.027
Pinguecula	14	0.217	12	0.330
Pituitary neoplasm	1	0.015	—	—
Post cortical contusion	—	—	1	0.027
Presbyopia	1978	30.598	276	7.587
Pseudo-neuritis	14	0.217	4	0.110
Pterygium	97	1.502	163	4.480
Ptosis	37	0.573	7	0.192
Pupillary membrane, persistent	7	0.108	—	—
Retinae commotio	8	0.124	5	0.137
Retinal arteriosclerosis	169	2.308	10	0.275
Retinal detachment	60	0.929	7	0.192
Retinal haemorrhage	39	0.604	14	0.385
Retinitis, active	30	0.464	10	0.275
Retinitis, albuminuric	9	0.139	1	0.027
Retinitis, arteriosclerotic	35	0.542	5	0.137
Retinitis, circinata	2	0.031	—	—
Retinitis, diabetic	27	0.418	—	—
Retinitis, pigmentosa	13	0.201	2	0.055
Retinitis, proliferans	14	0.217	4	0.110
Retinitis, sen. mass. exud.	10	0.155	—	—
Retrobulbar neuritis	10	0.155	2	0.055
Sclera, foreign body of	—	—	3	0.082
Sclera, rupture of	1	0.015	2	0.055
Scleritis	18	0.279	4	0.110
Siderosis bulbi	4	0.062	—	—
Socket contraction	2	0.031	—	—
Stenosis, puncta and canaliculus	6	0.093	—	—
Supra-orbital neuralgia	—	—	7	0.192
Symblepharon	5	0.077	1	0.027
Synchysis scintillans	13	0.201	—	—
Synechia, anterior	31	0.480	2	0.055
Syphilis	37	0.573	2	0.055
Thrombosis, retinal vein	32	0.495	—	—
Thyrototoxicosis	22	0.341	—	—
Trachoma	12	0.186	16	0.440
Trichiasis	46	0.712	8	0.220
Ulcer, rodent	7	0.108	2	0.055
Uveitis	9	0.139	2	0.055
Vitreous detachment	—	—	2	0.055
Vitreous haemorrhage	30	0.464	18	0.495
Vitreous opacities	160	2.477	13	0.357
Vitreous prolapse	2	0.031	—	—
Xanthelasma	4	0.062	—	—

TABLE II
COMPARATIVE LIST OF EYE INJURIES (*see Table I*)

Injuries	Civil	Per cent.	War	Per cent.
Anophthalmos	83	1.285	24	0.660
Aphakia	153	2.369	6	0.165
Burn of conjunctiva	10	0.155	8	0.220
Burn of cornea	12	0.186	4	0.110
Burn of lid	—	—	3	0.082
Canaliculus, laceration of	3	0.046	3	0.082
Cataract, traumatic	54	0.836	28	0.770
Choroid, atrophy of (post traumatic)	—	—	2	0.055
Choroid, rupture of	5	0.077	3	0.082
Conjunctival abrasion	5	0.077	1	0.027
Conjunctival foreign bodies	39	0.604	14	0.385
Conjunctival laceration	14	0.217	5	0.137
Corneal abrasion	81	1.254	12	0.330
Corneal foreign bodies	104	1.610	70	1.924
Corneal laceration	12	0.186	3	0.082
Globe, contusion of	38	0.588	5	0.137
Globe, perforation of	64	0.991	11	0.302
Hypphaema	28	0.434	15	0.412
Hypopyon	11	0.170	3	0.082
Intraocular foreign bodies	10	0.155	17	0.467
Iris, prolapse of	12	0.186	5	0.137
Iris, perforation of	5	0.077	—	—
Iris, sphincter rupture of	6	0.093	3	0.082
Iridodialysis	9	0.139	1	0.027
Lens, dislocation of	15	0.232	3	0.082
Lid, abrasion	4	0.062	—	—
Lid, contusion	16	0.248	8	0.220
Lid, foreign bodies	6	0.093	5	0.137
Lid, laceration	11	0.170	26	0.715
Optic atrophy, primary	30	0.464	3	0.082
Optic nerve, contusion of	—	—	2	0.055
Orbital foreign bodies	2	0.031	10	0.275
Panophthalmitis	3	0.046	1	0.027
Phthisis bulbi	10	0.155	1	0.027
Retinae commotio	10	0.124	5	0.137
Retinal detachment	60	0.929	7	0.192
Retinitis, proliferans	14	0.217	4	0.110
Siderosis bulbi	4	0.062	—	—
Symblepharon	5	0.077	1	0.027
Synechia, anterior	31	0.480	2	0.055
Vitreous haemorrhage	30	0.464	18	0.495
Vitreous prolapse	2	0.031	—	—
39 headings (Civil)	1009	15.624	342	9.400
38 headings (War)				

TABLE III
COMPARATIVE LIST OF VISUAL DISORDERS (*see Table I*)

Visual Disorder	Civil	Per cent.	War	Per cent.
Anisometropia	82	1.270	38	1.045
Hypermetropia	260	5.543	234	6.432
Hypermetropic astigmatism	1949	30.149	1044	28.697
Mixed astigmatism	654	10.127	301	8.274
Myopia	96	1.487	30	0.824
Myopic Astigmatism	1043	16.150	406	11.160
Presbyopia	1978	30.598	276	7.587
7 Headings	6062	95.324	2329	64.019

TABLE IV
COMPARATIVE LIST OF MUSCULAR ANOMALIES
(see Table I)

Condition	Civil	Per cent.	War	Per cent.
Accommodation, paralysis of ...	37	0.573	10	0.275
Convergence excess ...	93	1.440	14	0.385
Convergence insufficiency ...	185	2.555	178	4.893
Cyclophoria ...	12	0.186	4	0.110
Diplopia, functional ...	—	—	1	0.027
Divergence excess ...	13	0.201	1	0.027
Divergence insufficiency ...	108	1.672	81	2.226
Esophoria ...	199	3.081	177	4.865
Esotropia ...	185	2.555	46	1.264
Exophoria ...	425	6.581	125	3.436
Exotropia ...	89	1.378	29	0.797
Hyperphoria ...	107	1.657	23	0.632
Overaction of inferior oblique ...	4	0.062	17	0.467
Overaction of superior oblique ...	—	—	1	0.027
Paralysis, external rectus ...	22	0.341	1	0.027
Paralysis, facial or orbicularis ...	21	0.325	9	0.247
Paralysis, inferior oblique ...	1	0.015	2	0.055
Paralysis, inferior rectus ...	1	0.015	1	0.027
Paralysis, internal rectus ...	4	0.062	1	0.027
Paralysis, superior oblique ...	2	0.031	3	0.082
Paralysis, superior rectus ...	14	0.217	3	0.082
Paralysis, 3rd nerve ...	12	0.186	1	0.027
Paralysis, 3rd and 4th nerves ...	1	0.015	—	—
Paralysis, 3rd and 6th nerves ...	5	0.077	—	—
Paralysis, 5th nerve ...	—	—	1	0.027
Paralysis, 6th nerve ...	13	0.021	3	0.082
Ptosis ...	37	0.573	7	0.192
24 headings (Civil) ...	1590	24.000	739	20.313
25 headings (War) ...	—	—	—	—

TABLE V
COMPARATIVE LIST OF KERATITIS (see Table I)

Keratitis	Civil	Per cent.	War	Per cent.
Corneal erosions—multiple ...	16	0.248	17	0.467
Dendritic ulcer ...	14	0.217	15	0.412
Keratitis (unspecified) ...	15	0.232	9	0.247
Keratitis, acne rosacea ...	11	0.170	—	—
Keratitis, bullous ...	4	0.062	—	—
Keratitis, disciform ...	3	0.046	5	0.137
Keratitis, filamentary ...	3	0.046	—	—
Keratitis, interstitial ...	29	0.449	6	0.165
Keratitis, lagophthalmos ...	5	0.077	2	0.055
Keratitis, lattice ...	1	0.015	1	0.027
Keratitis, marginal ...	60	0.929	47	1.292
Keratitis, mustard gas ...	2	0.031	—	—
Keratitis, neuroparalytic ...	9	0.139	—	—
Keratitis, profunda ...	12	0.186	1	0.027
Keratitis, striate ...	8	0.124	1	0.027
Keratitis, superficial ...	15	0.232	2	0.055
Keratitis, superficial punctate ...	95	1.471	37	1.017
Keratitis, vesicular ...	11	0.170	9	0.247
18 headings (Civil) ...	313	4.844	152	4.180
13 headings (War) ...	—	—	—	—