A SERIES OF CASES TREATED LOCALLY BY CORTISONE*

A Preliminary Report to the Medical Research Council by the Panel on the Ophthalmological Applications of Cortisone and ACTH

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THIS paper reports the results of a preliminary survey of the effects of cortisone in 416 cases of various types of ophthalmological disease. This investigation was undertaken with the object of making a general preliminary survey of the field of cases in which, according to early reports from other sources, cortisone had been found of use, so that particular conditions meriting more intensive study might be selected. Supplies of cortisone have only been available to us for a period of 10 months and this communication must be considered as of a preliminary and perhaps even premature nature. All the cases recorded have had a minimum of 6-months' after-history since the cessation of treatment, but it is quite evident that after-histories so short are of little value in many ocular conditions, particularly those that are prone to suffer relapses. In view of the fact that our conclusions must at the present time be considered as tentative, the résumés of cases are extremely short, but it is hoped at a future date to supplement this first series of observations with more detailed and critical assessments. In the meantime, our own results have been compared with those which have already appeared in the literature, and the general position is assessed in the first paper in this issue of the Journal, to which reference should be made.

In all the cases recorded in this paper, cortisone has been given locally, either by the instillation of drops or by subconjunctival injections; the relatively few cases which we have had the opportunity of treating either by intra-tenon or retrobulbar injection, or by parenteral therapy, are not sufficiently numerous to warrant their

* The cortisone used in this investigation was supplied by the Medical Research Council and was in part derived from a gift from Merck & Co., made jointly to the Medical Research Council and the Nuffield Trust.

inclusion; these will be made the subject of a later communication. Drops were given usually in 1 in 4 dilution with the buffered phosphate diluent by the technique already described in the foregoing paper. The subconjunctival injections consisted of 0.2 to 0.3 ml. of the standard Merck's suspension of cortone acetate, every 3 to 5 days.

IRIDOCYCLITIS

In general terms, the cases reported show that the results of cortisone treatment in *acute iridocyclitis in its first attack* (Table I) are excellent, with rapid resolution or definitely accelerated healing. In one bilateral case, the effect of cortisone was clearly demonstrated by treating the worse eye which rapidly became the better. In a significant proportion of cases, relapses followed the cessation of treatment.

TABLE I
ACUTE IRIDOCYCLITIS (FIRST ATTACK)

Age	Eye Affected and Presumed Aetiology		Cortisone	Effect	Remarks
36	Right	?	G.	Improved in 12 days	Secondary glaucoma controlled only temporarily
27	Both	Dental	G.	Accelerated resolution in the treated (worse) eye	—
43	Left	?	G.	Rapid resolution	—
38	Left	?	G.	Rapid resolution	—
27	Left	?	G.	Rapid resolution	—
48	Left	?	G.	Rapid improvement	Two relapses within 5 wks controlled by treatment
37	Right	Dental	G.	Accelerated resolution	—
46	Right	Dental	G.+I. 2	Rapid resolution	—
42	Left	?	G.+I. 2	Rapid improvement	—
55	Left	?	G.+I. 2	Rapid resolution	Glaucoma controlled
46	Right	?	I. 1	Rapid resolution	Glaucoma controlled
47	Right	?	I. 2	Rapid resolution	Relapse 9 days after cessation of treatment
46	Left	Dental	I. 2	Rapid improvement	Glaucoma controlled
52	Right	?	I. 1	Rapid resolution	—
46	Left	Gonococcal	I. 2	Rapid resolution	Glaucoma controlled
40	Right	Gonococcal	I. 1	Rapid resolution	—
51	Left	?	I. 2	Rapid improvement	—
60	Right	?	I. 2	Accelerated resolution	—
68	Left	?	I. 2	Flare abolished	Secondary glaucoma unaffected
43	Left	?	I. 3	Good, delayed	Early operation
50	Right	?	I. 8	Accelerated resolution	Sudden resolution after 9 days
					Left (untreated) developed iris bombé

In all the Tables the following abbreviations should be noted: G., Guttæ; I., subconjunctival injections, the following digit denoting the number given; the fractions 6/6 etc., denote visual acuity.

In *acute iridocyclitis in its second and subsequent attacks* (Table II), the improvement is on the whole less dramatic, but again, as a rule, accelerated resolution was seen.

TABLE II
ACUTE IRIDOCYCLITIS (SECOND AND SUBSEQUENT ATTACKS)

Age	Eye Affected and Presumed Aetiology		Previous Attacks	Duration	Cortisone	Effect	Remarks
31	Both	? Tonsils	Several	2 yrs	G.	Improved	Hypopyon cleared rapidly; relapsed
29	Both	?	Several	3 yrs	G.	Rapid resolution	—
60	Right	?	Several	16 yrs	G.	Rapid improvement	—
30	Left	?	Several	—	G.	Rapid improvement	—
28	Both	?	Several	10 yrs	G.	Improved	—
39	Both	Dental	3	2 yrs	G.	Accelerated resolution	—
45	Left	?	1	3 mths	G.	Rapid and complete resolution	—
56	Left	?	1	—	G. + I. 2	G. Nil. I. Improvement	—
	Right	?	1	—	I. 3	Rapid improvement	Spondylitic
54	Right	?	3	—	G. + I. 1	G. Slight improvement	—
						I. Rapid improvement	—
48	Left	?	3	9 yrs	G. + I. 2	Accelerated improvement	—
36	Both	?	8	7 yrs	G. + I. 1	Marked initial improvement	Relapse responded less well
35	Both	?	Several	4 yrs	G. + I. 4	Gradual improvement	—
44	Right	?	5	1 yr	I. 2	Rapid resolution	Hypopyon cleared rapidly
57	Right	?	1	—	I. 2	Rapid improvement	Spondylitic
53	Both	?	Several	2 yrs	I. 1 both	Improved	Glaucoma controlled
							Relapsed later
36	Right	?	—	5 yrs	I. 3	Rapid resolution	2 relapses controlled
56	Both	?	Several	13 yrs	I. 2	Rapid resolution	Recurrence after 4 wks
37		Gonococcal	Several	17 yrs	I. 2	Rapid resolution	—
23		? Boeck's sarcoid	Several	4 yrs	I. 3	Doubtful	Early abolition of flare and nodule
							Complete resolution delayed
24		Rheumatic	Several	2 yrs	I. 3	Delayed response	Sudden resolution after 10 days
51		? Dental	Several	13 yrs	I. 2	Rapid resolution	—
56		? Rheumatic	Many	25 yrs	I. 3	Accelerated resolution	—
47	Both	?	Many	17 yrs	I. 2	Rapid resolution	—
36	Both	?	Many	17 yrs	I. 4	Rapid resolution	—
52		?	3	3 yrs	I. 4	Rapid resolution in 11 days	Previous attacks 4 mths; relapsed
32	Left	?	Several	2 yrs	I. 4	Very little	—
48	Right	?	Several	2 yrs	I. 4	Improved slowly	Relapsed
38	Right	?	?	—	I. 2	Accelerated resolution	—
27	Tuberculosis, both eyes granulomatous inflammation		4	18 mths	I. 6 both	Complete remission	—
21	Behçet's syndrome		Many	2 yrs	I. 5	Nil	—
28	Behçet's syndrome		Several	3 yrs Present attack 7 days	I. 3	Nil	—

In *subacute iridocyclitis* (Table III) a much less dramatic effect was seen. A few cases showed rapid improvement, but the amelioration of the condition was generally slower and less complete.

In *chronic iridocyclitis* (Table IV), any improvement is slight, slow, and frequently temporary, and can be counted on to last little longer than the duration of the therapy itself.

TABLE III
SUBACUTE IRIDOCYCLITIS

Age	Duration of Attack	Cortisone	Effect	Remarks
51	wks	G.	Slight improvement	—
78	1 mth Both	G.	Slight improvement	—
48	1 mth Both	G.	Improved rapidly	Relapse 4 days after treatment controlled by further cortisone
35	1 mth Right	G.	Slow improvement on treatment	—
54	2 mths Right	G.	Slow resolution on treatment	—
45	4 wks	G.	Rapid improvement	—
21	1 mth	G.	Slight improvement only	Relapses uncontrolled
63	1 mth	G.	Accelerated resolution	—
35	4 mths	G.	Improved slowly	—
72	6 mths	G.	Rapid resolution	—
45	2 mths	G.	Slow improvement	—
48	3 wks	G. + I. 1	Rapid resolution	—
72	1 mth	G. + I. 2	Rapid improvement	Three relapses also controlled; quiet 3 mths Glaucoma controlled
31	wks	I. 3	Nil	—
22	6 mths	I. 4	Completely clear while on treatment	—
24	3 mths	I. 3	Slow resolution	—
8	2 mths Right	I. 2	Improved on treatment	—
	7 mths Left	I. 2	Nil	—
21	12 mths Right	I. 2	Both eyes improved markedly on treatment of one	—
	12 mths Left	nil		—
78	3 wks Left	I. 1	Slight improvement	—
51	1 mth Both	I. 1 Both	Nil	Glaucoma not controlled
78	4 wks	I. 2	Rapid improvement	Glaucoma controlled
74	1 wk	I. 2	Improved	Glaucoma controlled but relapsed
49	1 mth	I. 4	Slow improvement	—
22	4 mths	I. 2	Rapid improvement	—
52	9 mths	I. 8	Slow improvement	—
52	6 mths	I. 4	Slow improvement	Glaucoma controlled
27	7 mths	I. 5	Improved while on treatment	Frequent relapses in 6 mths all controlled by treatment
34	3 mths	I. 1	Improved	Relapsed later
36	10 wks	I. 3	Slow improvement	—
25	6 mths { Left	I. 5	} Slow improvement	Relapse on stopping treatment
	Right	I. 6		
42	wks	I. 4	Slow improvement	Co-operation doubtful
5	2 yrs	I. 3 Both	Nil	Still's disease
31	4 mths	I. 6	Gradual complete resolution	Relapses after 3 wks and 7 wks with poor response
54	10 mths	I. 7	Gradual resolution	—
26	6 mths	I. 2	Rapid resolution	Synechiae ruptured without atropine
58	6 mths	I. 7	Very little	Massive old keratic precipitates

continued overleaf

TABLE III—*continued*
SUBACUTE IRIDOCYCLITIS

Age	Duration of Attack	Cortisone	Effect	Remarks
53	3 wks	I. 2	Very little	Old vitreous opacities
50	12 mths	I. 5	Slow improvement	—
30	2 mths Left	I. 5	Improved	—
	1 day Right	I. 4	Improved	Relapse 5 wks later (? Sarcoidosis)
42	3 yrs	I. 8	Improved slowly but no complete remission	(? Sarcoidosis)
56	6 mths Left	I. 8	Complete remission	Right eye excised 2 yrs before; sarcoidosis
21	2 yrs Both	G. Left	Improvement	Leprotic kerato-iridocyclitis Left (worse eye) became quiet Right (untreated better eye) became worse Corneal infiltrates unchanged

TABLE IV
CHRONIC IRIDOCYCLITIS

Age	Duration	Cortisone	Effect
39	yrs	Systemic and I. 1	Nil
42	10 yrs	I.	Slow improvement up to a point then no further Vitreous haze persists
38	yrs	Systemic and I.	Nil
75	yrs	G. + I.	Nil
49	12 yrs	I.	Nil
42	1 yr	I. 5	Nil
26	3 mths	G.	Nil
30	3 yrs Right	I. 12	Slight improvement
	12 yrs Left	Nil	—
73	2½ yrs	I. 7	Improvement on treatment; relapsed
30	4 mths	I. 7	Nil
79	2 yrs	G. + I. 6	Slight improvement on treatment 2 mths later in statu quo ante treatment
48	4 days	G. + I. 1	Nil
36	2½ yrs	I. 2	Improvement + on treatment; recurred later
66	14 mths	I. 1	Nil apart from fragmenting of keratic precipitates
25	5 mths	I.	Initial improvement but not maintained
40	15 mths	G.	Improvement while on treatment; relapsed
62	15 mths	G. + I. 6	Improvement on treatment; relapsed
29	3 mths	I.	Nil
43	9 yrs	I.	Slight improvement on treatment
44	5 yrs	G.	Improvement on treatment, immediate relapses on cessation over a period of 7 mths
22	3½ yrs	I.	Improvement on treatment

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TABLE IV—continued
CHRONIC IRIDOCYCLITIS

Age	Duration	Cortisone	Effect
33	2 yrs	I.	Slow partial improvement
52	4 yrs	G. + I. 2	Improvement while on treatment, relapses on cessation
19	6 mths	I. 1	Slight improvement; relapsed later and again controlled
53	8 mths	I. 2	Nil
75	18 mths	I. 4	Slight improvement on treatment, immediate relapses on cessation; worse 6 mths later
57	4 yrs	G.	Improvement while on treatment; relapsed
28	3 yrs	I.	Slow improvement while on treatment
46	18 yrs	G.	Improvement while on treatment
57	2 mths	G.	Complete resolution in 2 wks

In iridocyclitis associated with *rheumatic manifestations* such as spondylitis (Table V), the same general principles appear; in acute recurrent exudative phases of the disease there is rapid improvement, but in the chronic type of case this is not apparent.

TABLE V
IRIDOCYCLITIS AND UVEITIS ASSOCIATED WITH SPONDYLITIS,
RHEUMATOID ARTHRITIS, ETC.

Age	Type of iritis	Cortisone	Effect
56	Recurrent (spondylitis)	Right: I. 3 Left: G. + I. 2	Rapid improvement { G. no effect I. improvement
57	Recurrent (spondylitis)	I. 2	Rapid improvement
53	Recurrent (spondylitis)	G.	Rapid improvement
55	Recurrent (rheumatoid arthritis)	Both: I. 1	Improved
57	Recurrent (rheumatoid arthritis)	I. 2	Rapid resolution Similar attack 1 yr before lasted 10 mths
5	Chronic 2 yrs (Still's disease)	Both: I. 3	Nil

When iridocyclitis in its acute exudative phases is complicated by *hypertension* (Table VI overleaf), the glaucomatous interlude is usually completely relieved although the remission is occasionally only temporary; on the other hand, in those more chronic cases where a

blockage of the angle is apparent gonioscopically, no improvement can be expected.

TABLE VI
SECONDARY GLAUCOMA COMPLICATING IRIDOCYCLITIS

Age	Type of Iritis	Type of Glaucoma	Cortisone	Effect on Glaucoma
57	Acute	Obliteration angle	G.	Temporary effect only
46	Acute	Exudative	I. 1	Complete relief
46	Acute	Exudative	I. 2	Complete relief
46	Acute	Exudative	I. 2	Complete relief
55	Acute	Exudative	G. + I. 2	Complete relief
53	Recurrent acute	Exudative	I. 1 Both	Complete relief
51	Subacute	Obliteration angle	G.	Nil
51	Subacute	Obliteration angle	I. 1	Nil
78	Recurrent acute	Exudative	I. 2	Complete relief
74	Subacute	Angle block	I. 3	Temporary improvement Subsequent relapse
52	Subacute	?	I. 4	Controlled on treatment
72	Subacute	Exudative	G. + I. 2	Complete relief
39	Chronic	Angle block	I. 4	Nil—operation necessary
25	Diabetic	Angle block	G. + I. 2	Nil
40	Diabetic (with rubeosis)	Angle block	I. 4	Nil

In *generalized uveitis* (Table VII) of indeterminate aetiology, our experience is much less favourable. The results in the few cases of this disease treated by us, all of which were in the chronic phase, have not been encouraging.

TABLE VII
GENERALIZED UVEITIS, CHRONIC

Age	Duration	Cortisone	Effect
39	Some yrs	I. 4	Nil
40	Some yrs	I. 5	Improvement on treatment Relapse on cessation
47	5 mths	I. 1	Doubtful
42	4 mths	I. 3	Equivocal

The two following cases illustrate the temporary—though dramatic—effect of cortisone in acute iridocyclitis:

ACUTE RECURRENT IRIDOCYCLITIS OF GONOCOCCAL ORIGIN.—In a male, aged 36, there was a history of eight previous attacks since 1944. The present attack was of 3 weeks' duration. The lids were oedematous, and the eye markedly injected, and a diffuse cellular deposit powdering the posterior surface of the cornea was aggregated in places as massive keratic precipitates. A 2-mm. hypopyon occupied the lower part of the anterior chamber, the iris was heavily vascularized and a large mass of exudate

occluded the pupil. Vision was reduced to the perception of light. Three days after one subconjunctival injection of cortisone, the exudates, keratic precipitates, and hypopyon had disappeared. Treatment was then continued by drops and all the evidences of inflammation had resolved within 12 days. Treatment was then stopped, and 11 days later there was a further relapse. Cortisone drops proved ineffective at this stage but after four subconjunctival injections the inflammation was again completely controlled. A further relapse occurred 9 weeks later which in turn was controlled by two subconjunctival injections of cortisone, since when (6 months) the eye has remained quiet.

RECURRENT HYPOPYON IRIDOCYCLITIS.—A female, aged 34, had a recurrent iritis in an aphakic eye which had been needled in youth for congenital cataract. The eye had been quiet until 12 months before the present incident, but during that time the patient had had five attacks of iritis, all of which had rapidly resolved within 2 or 3 weeks. The duration of the present attack when the patient was seen had been 4 days; there was a violent iritis with 3-mm. hypopyon. After one subconjunctival injection of cortisone, the hypopyon disappeared in 2 days, the inflammatory symptoms resolved, and, although a considerable number of cells was present in the anterior chamber until the 15th day, the eye was completely quiet; there has been no relapse during the last 6 months. This case shows the rapid resolution within a few days of an inflammation much more severe than the previous attacks which had persisted for as many weeks by ordinary methods of treatment. The after-history, however, is short.

The following case illustrates the effect of cortisone in a subacute granulomatous iridocyclitis:

VIOLENT BILATERAL IRIDOCYCLITIS OF TUBERCULOUS AETIOLOGY.—A male, aged 33, had a small tuberculoma at 6 o'clock in the iris of the left eye, heavy aqueous flare, cells in the anterior chamber, keratic precipitates, vitreous opacities in both eyes. Considerable improvement was obtained after 6 weeks' treatment with streptomycin and PAS. Thereafter the condition remained relatively quiet for 3 months although the eye remained injected. Tuberculin in minute doses (1/100,000,000 mg.) was started, resulting in a violent focal relapse in each eye. This condition was similarly controlled but considerable inflammatory symptoms persisted. A similar relapse occurred on a second tuberculin injection given in homeopathic doses, on this occasion, however, with a rapid increase in the tuberculoma. This was treated with six subconjunctival injections of cortisone in each eye, with the result that both eyes became quiet within 3 weeks, and the keratic precipitates and aqueous flare subsided; small doses of tuberculin were thereupon restarted without causing a focal reaction. These have been continuously increased during the last 8 months without ill-effects and the patient has resumed work. Neglecting the fact that cortisone treatment may possibly not be indicated in an active tuberculous condition, it would seem that the temporary control of the inflammation in this case was of great clinical benefit, and may, in fact, have been responsible for allowing the patient to start treatment with tuberculin without mishap.

The following case illustrates the effect of cortisone in controlling the acute phase of symptoms of a relapsing chronic iridocyclitis but its inability to eliminate the underlying inflammatory process:

CHRONIC IRIDOCYCLITIS of the right eye of 3 years' duration with recurrent subacute phases in a female, aged 42. One of these exacerbations appeared before treatment with many small keratic precipitates and an aqueous flare; there was a marked vitreous haze; vision was 3/60. Six subconjunctival injections of cortisone were given at 5-day intervals, at the end of which time the aqueous flare had disappeared, the vitreous had slightly cleared, and the vision had improved to 6/24. There was no apparent change in the keratic precipitates. A further four subconjunctival injections were given, whereafter no further improvement was obtained. The cyclitic process, however, remained relatively quiet, and there has been no apparent change in the eye during the succeeding 5 months.

SYMPATHETIC OPHTHALMITIS (Table VIII)

These cases are interpreted as an exudative iridocyclitis after operation or injury to the other eye; in only six of them was the exciting eye excised and histologically shown to have sympathetic inflammation. In general terms the results are good, the inflammation being apparently controlled so rapidly in early cases that in many instances the exciting eye which would otherwise have been excised, was retained. In cases of longer standing, active inflammatory phenomena were held in check but tended to relapse on the cessation of treatment. There is no doubt that, so far as the length of history shows, cortisone is more effective than any other known method of treatment and in early cases may be found to revolutionize the prognosis of this condition.

TABLE VIII
SYMPATHETIC OPHTHALMITIS

Age	Duration	Cause	Cortisone	Effect	Remarks
38	9 days	Cataract extraction	G. Both	Cured in 15 days	—
67	2 mths	Cataract extraction	G.	Eye quiet 9 days	Secondary glaucoma controlled
62	6 mths	Cataract extraction	G.	Eye quiet 9 days	Secondary glaucoma controlled
65	6 wks	Cataract extraction	G.	Eye quiet 5 days	—
75	10 wks	Cataract extraction	G.	Eye quiet 10 days	Relapse with secondary glaucoma 2 wks after treatment. Eye removed
68	2½ yrs	Cataract extraction	G. + I.	Inflammation controlled	Advanced case. Relapses on cessation of daily treatment
62	4 mths	Cataract extraction	G. + I. 7	Quiet in 6 wks	Exciting eye excised at onset. Relapse controlled
58	18 mths	Iridectomy	G. + I. 4	Improved	Patient refused further treatment
56	5 yrs	Injury	I. 6	Controlled	Exciting eye excised. Seven attacks other eye in 5 yrs. Relapses occurred on cessation of treatment. Three successive relapses controlled rapidly in 4 to 10 days
7	1 day	Injury	I. 4	Rapid cure	Exciting eye excised immediately
12	7 wks	Injury	G. + I. 2	Rapid improvement	Mild relapses responded
19	2 days	Injury	G. + I. 2	Cure in 19 days	Exciting eye excised at onset
24	2 mths	Injury	I. 4	Inflammation controlled	Mild attack (recurrent)
				No other effect	
19	4 wks	Injury	I. 2	Eye quiet	Mild attack (recurrent)
70	5 days	Injury	I. 4	Cleared rapidly (Vision: Hand movements to 6/6)	A severe attack following immediately after excision of exciting eye

The following case illustrates the control of what might presumably have developed into a case of sympathetic ophthalmitis:

(Case of MR. GIBSON MOORE). A boy, aged 7, was shot in the right eye with an arrow on August 23, 1950; there was a prolapse of the iris and a traumatic cataract with the retention of a splinter of wood. At operation the splinter was removed,

the iris freed, penicillin injected into the anterior chamber, and the wound closed with a conjunctival flap. Two months later a broad synechia of the iris into the wound was divided and the anterior chamber reformed with air. Six weeks later the left eye was inflamed with large keratic precipitates, cells in the anterior chamber, and a small pupil which did not dilate with atropine. The right eye was immediately excised and showed pathologically the infiltration of sympathetic ophthalmitis. Four subconjunctival injections of cortisone were given to the left eye; full mydriasis was obtained after the second, and the keratic precipitates and aqueous flare rapidly disappeared within 6 days. Three weeks later the eye was quiet without evidence of inflammation and has remained so for 10 months.

The following case illustrates the response of an established case of sympathetic ophthalmitis to cortisone treatment:

The right eye of a male, aged 56, was damaged in an air-raid in 1945; excised 1947. Sympathetic ophthalmitis developed in the left eye 1 year later. Between this date and 1950 the patient suffered six relapses, the last of which was severe, associated with a secondary glaucoma; an anterior sclerotomy was performed. Four weeks after the operation, the eye showed an active exudative uveitis with massive keratic precipitates. The eye quietened with two subconjunctival injections of cortisone, but one month later relapsed. A further injection was followed by a further relapse. Three further subconjunctival injections led to complete quiescence of all clinical evidences of inflammation, a condition which has been maintained for the last 6 months. Organized exudates in the pupil, however, remain which reduce the vision to 6/36.

FOCAL CHOROIDITIS (Table IX)

In early cases there may be some improvement in the acute exudative manifestations and, although the affected area remains functionless, it is probably circumscribed by treatment. In established cases no effect is produced.

TABLE IX
FOCAL CHOROIDITIS

Age	Duration	Cortisone	Effect
68	3 wks	I. 13	Nil
27	2 wks	I. 2	Nil
22	2 mths	I. 3	Slight clearing of vitreous opacities
40	10 wks	I. 8	Nil
30	2nd attack 2 days	I. 6	Marked improvement 3 wks Previous attack had lasted 6 mths
24	3 yrs	I. 5	Nil
42	12 yrs	I. 4	Nil
17	1 mth	G. + I. 3	?Accelerated resolution Macula destroyed

POST-TRAUMATIC UVEITIS (Table X)

Both after operation and after other wounds, this condition, on the whole, responded well. The period of inflammation appeared to have been considerably shortened, and in three of the five cases in which inflammation followed a perforating wound, the eyes would have been excised but for the possibility of control by cortisone.

TABLE X
POST-OPERATIVE (AND PERFORATING WOUND) UVEITIS

Age	Cause	Duration	Cortisone	Effect	Remarks
38	Cataract extraction	3 mths	G. + I. 4	Improved	—
53	Cataract extraction	12 mths	I. 2	Nil	Secondary glaucoma unaffected
59	Cataract extraction	1 mth	I. 3	Improved in 2 wks	—
59	Cataract extraction	6 wks	I. 3	Improved in 2 wks	—
58	Cataract extraction	2 wks	G. + I. 1	Improved	Capsulotomy done one day after injection of cortisone without complications
70	Cataract extraction; diabetes	2 wks	I.	Nil	Eye removed
53	Cataract extraction	2 days	G.	Eye quiet in 2 wks	Lens dislocated into vitreous
55	Cataract extraction	2 wks	G.	Improved	—
41	Cataract extraction	2 days	G.	Nil	Complete hyphaema while on treatment; later developed sympathetic ophthalmitis
68	Cataract extraction	6 wks	I. 5	Nil	—
29	Cataract extraction	5 days	I. 2	Improved	—
42	Cataract extraction; capsulotomy	3 wks	G. + I. 4	Inflammation controlled	Capsulotomy gap closed up
75	Cataract extraction	8 days	G.	Cured 2 days	—
55	Cataract extraction	4 wks	G. + I. 2	Quiet 3 wks	Mild relapse 2 mths controlled
73	Cataract extraction; capsulotomy	6 wks	G.	Improved	—
72	Capsulotomy	6 wks	G. + I. 1	Nil	—
75	Capsulotomy	10 days	G.	Cured	—
66	Cataract extraction	9 days	I. 3	Improved	Chronic recurrent iridocyclitis for 11 yrs. Complicated cataract
					New vessels on iris and cyclitic membrane followed operation, appeared steadily progressive, after treatment complete resolution
60	Cataract extraction	8 days	G.	Cured	Diabetic, violent post-operative reaction with cyclitic membrane
					Rapid resolution within 1 wk of inflammation which appeared to be steadily progressive
76	Capsulotomy	3 days	G.	Cured in 9 days	—
72	Sclerotomy	12 days	I.	Nil	—
68	Trephine	2 days	I. 2	Improved	Chronic arthritic
55	Iridectomy	1 mth	I.	Nil	Recurrent iritis in a spondylitic
67	Iris inclusion	14 days	G.	Cured 3 days	—
53	Corneal graft	4 wks	G.	Improved	—
34	Corneal graft	3 mths	G.	Improved	—
63	Perforating wound	10 wks	I. 5	Improved	2 relapses controlled
75	Cataract extraction	17 mths	I. 3	Deteriorated	Associated scleritis
63	Cataract extraction	3 wks	I. 3	Improved	—
50	Iridectomy	6 mths	I. 5	Improved	Primarily gonococcal with secondary glaucoma. Relapsed, controlled
25	Perforating wound	5 days	I. 6	Cured	Lens injured. Foreign body removed. Violent iridocyclitis with keratic precipitates subsided
3	Perforating wound	20 days	G.	Cured	Corneal wound infiltrated. Keratic precipitates
					Rapid resolution
26	Perforating wound	4½ mths	G.	Cured in 26 days	Dangerous iridocyclitis suggesting removal of eye. Settled down rapidly
9	Perforating wound	1 wk	G. + I. 1	Improved (3 days)	Eye excised to avoid risk of sympathetic ophthalmitis
32	Perforating wound	12 days	G. + I. 2	Slight improvement only	Eye excised

POST-OPERATIVE INFECTIONS (Table XI)

Here again the effect of cortisone is good. In all our cases, cortisone was combined with antibiotic treatment, and the effect of the two, both in post-operative endogenous inflammation and in infected wounds, was certainly better than would otherwise have been expected.

TABLE XI
POST-OPERATIVE INFECTIONS

Age	Duration (days)	Cause	Cortisone	Effect	Remarks
71	3	Cataract extraction	I. 3	Quietened 4 wks (6/24)	Endogenous infection Antibiotics also given
80	4	Cataract extraction	I. 3	Quietened 3 wks (6/60)	Antibiotics also given
66	6	Cataract extraction	I. 4	Quietened 4 wks (Perception of light, projection accurate T.-3)	Endogenous infection Antibiotics also given
10	17	Perforating wound	I. 2+ 5 x 25 mg. I.M.	Quietened 2 wks (Perception of light, projection accurate; cataract)	Quiet 6 mths Antibiotics also given
20	11	Intra-ocular foreign body	I. 3	Quietened 7 wks (6/12)	Intra-ocular foreign body not removed Antibiotics also given

CENTRAL SEROUS RETINOPATHY (Table XII)

In the four cases treated with subconjunctival injections the duration of disease before treatment was instituted varied from 1 to 5 weeks. All four improved, both as judged objectively and as indicated by a recession of the scotoma, an effect particularly evident in the early case; one relapsed immediately after the cessation of treatment. On the whole, however, the effect cannot be said to have been dramatic for a disease wherein improvement is normally frequent. Further observations are obviously required before any conclusions can be made; and it may be that systemic treatment will prove more effective in this disease.

TABLE XII
CENTRAL SEROUS RETINOPATHY

Age	Duration (weeks)	Cortisone	Effect
24	1	I. 3	Improved rapidly 1 wk
28	5	I. 3	Improving 14 days
44	5	I. 3	Improved (6/18-6/9)
57	4	I. 5	Improved slowly; relapsed after cessation of treatment

EXUDATIVE MACULAR RETINOPATHY (Table XIII)

The effects as judged from our three examples of this condition are difficult to assess. There is no doubt that some absorption appeared to occur as well as some improvement in vision, but the response cannot be said to have been dramatic even although in one case a measurable reduction in the height of the macular lesion was observed.

TABLE XIII
EXUDATIVE MACULAR RETINOPATHY

Age	Cortisone	Effect
65	I. 5	Some absorption of exudate and some improvement of vision
36	I. 44	Some absorption of exudate; relapsed 8 wks
68	I. 5	? Progression stopped Macular swelling reduced by 2 dioptres

KERATITIS

In general, the response of *infective keratitis* (ulcers, hypopyon ulcers, corneal abscesses, and similar conditions) is good (Table XIV). Only one case failed to show any response, and in three the result was equivocal. It is to be noted that epithelialization seemed to be inhibited in three cases so long as cortisone was administered.

TABLE XIV
KERATITIS (SEPTIC, HYPOPYON ULCERS, CORNEAL ABSCESS, ETC.)

Age	Type	Cortisone	Effect	Remarks
45	Abscess	G. - I. 3	Equivocal	---
45	Ulcer	G.	Good	No relapse in 6 mths
59	Ulcer	G.	Nil	Worse on treatment
52	Hypopyon ulcer	G.	Good	Progressive despite standard therapy for 16 days. Rapid improvement with cortisone in 3 days, quiet in 6 days
71	Hypopyon ulcer	G.	Good	Hypopyon disappeared on day of commencement of treatment
29	Ulcer	G.	Good	Progressive for 15 days. Quiet after 6 days of treatment, no recurrences 6 mths
66	Hypopyon ulcer	G.	Good	Rapid clearance of hypopyon and iridocyclitis
70	Ulcer	G.	Good	Progressive for 12 days. Eye white and symptom-free after 1 wk treatment
66	Ulcer	G.	Good	Immediate response after 6 days progressive symptoms. Opacity remains
34	Ulcer with seborrhoeic dermatitis	G.	Good	Recurrence of keratitis 19 yrs previously. Symptoms progressive 12 days. Eye white after 8 days treatment
62	Hypopyon ulcer	G. and I.	Equivocal	Inflammation subsided with systemic and subconjunctival penicillin in addition to cortisone
60	Hypopyon ulcer	I. 2	Good	Complicated by hypertension. Iridectomy. Rapid healing. Hyphaema 6 days after operation
47	Hypopyon ulcer	I. 2	Good	Rapid improvement
29	Ulcer	I. 2	Good	Persistent corneal stain until carbolicization Immediate response to first injection Relapse Similar immediate response with second injection; further relapse again controlled

On the other hand, our results with *marginal corneal ulcers* (Table XV) were poor.

TABLE XV
MARGINAL CORNEAL ULCERS

Age	Cortisone	Effect	Remarks
42	G.	Nil	Improved atropine irritation
42	I.	Subjective improvement only	—

Keratitis due to *phlyctenular disease* (Table XVI), or *rosacea* (Table XVII), however, almost invariably responded well so far as acute exacerbations were concerned, although old opacities were unaffected.

TABLE XVI
PHLYCTENULAR DISEASE

Age	Duration (months)	Cortisone	Effect
7	4, corneal	G. 10 days	Cured
20	1, conjunctival	G. 14 days	Cured

TABLE XVII
ROSACEA KERATITIS

Age	Duration	Cortisone	Effect	Remarks
32	yrs	G.	Good	Eye quiet in 2 days; relapse 5 mths
53	yrs	G.	Good	Other eye scarred and almost blind Treated eye corneal infiltration of some wks standing disappeared in 3 days
66	2 yrs	G.	Improved rapidly	Relapsed while on G.
14	Some mths	G.+I. 3	Improved	Improvement maintained
53	7 yrs	G.+I. 2	Improved	Improvement maintained
62	yrs	G.	Good	Relapse on leaving off G.
68	2 yrs	G.	Good	Relapse 2 mths; responded well to further treatment
62	yrs	G.	Good	Relapse on leaving off G. Eye quiet after 3 mths treatment No further relapse in 2 mths
51	13 yrs	G.	Ulcer healed in 10 days	Similar ulcer 1 yr ago took 3 mths to heal. Relapse 2 mths controlled G. better effect than I.
36	4 yrs	G.+I. 2	Quiet in 3 wks	
60	2 yrs	G.+I. 2	Ulcer healed in 5 days	Old opacities unaffected
56	3 yrs	I. 3	Quiet in 8 days	Eye still quiet

Among viral infections, *herpes febrilis* (dendritic ulcers) showed little or no response (Table XVIII), but the deeper infections, *herpes zoster* (Table XIX) and *disciform keratitis* (Table XX), reacted more favourably.

TABLE XVIII
HERPETIC KERATITIS

Age	Duration	Cortisone	Effect	Remarks
39	Some wks	G.	Good	Relief of symptoms
				Relapse on cessation of treatment
39	3 wks	G. -I. 2	Nil	—
22	3 wks	G. -I. 3	Nil	Temporary relief
				Relapsed while under treatment
23	Some wks	I.	Nil	—
23	Many attacks	I. 5	Nil	—
75	2 wks	I. 2	Nil	Resolved within usual time
67	8 wks	I. 1	Nil	? Delayed healing

TABLE XIX
HERPES ZOSTER

Age	Complication	Duration	Cortisone	Effect
49	Kerato-iritis	3 wks	G.	Improved rapidly with some clearing of nebula
46	Iritis	3½ mths	I.	Improved
33	Kerato-iritis	4 mths	I. 8	Rapid improvement
53	Iritis	8 days	I. 1	Rapid improvement (early case)

TABLE XX
DISCIFORM KERATITIS

Age	Duration Present Attack	Cortisone	Effect
59	6 wks	G.	Nil
38	5 wks	G.	Nil
56	6 mths	G.	Cured, 6/24 to 6/9 14 days
36	5 wks	G.	Improved, 6/36 to 6/9 3 wks
40	6 wks	I. 3	One previous attack
			Cured, old scars remain
59	19 mths	I. 14	Vision improved, hand movements to 6/60
25	5 wks	I. 2	Nil
			Initial subjective relief
52	6 wks	I. 3	Four previous attacks
			Resolution, old scars persist
			Relapse 2 wks after cessation of treatment

The improvement in *syphilitic interstitial keratitis* (Table XXI) is marked, particularly in early cases. In these, not only the subjective symptoms but also the objective signs may be brought under control so effectively that no corneal scarring may result. Within the 6 months under review, however, relapses are common and it would appear that they are to be expected, although they are relatively

TABLE XXI
SYPHILITIC INTERSTITIAL KERATITIS

Age	Eye Affected and Duration		Cortisone	Effect
20	Left	7 days	G. + I. 6	Rapid improvement Relapse after 2 wks controlled by G
39	Left	3 wks	G.	Rapid improvement; relapse controlled
16	Right	10 wks	G.	Improved 6/24 to 6/9 in 20 days
34	Right	5 wks	G.	Vision: counting fingers to 6/12 in 6 wks
17	Right	2nd attack	G.	Improved, three relapses also controlled by G.
12	{ Right	3 wks	G.	Vision: hand movements to 6/18 in 13 wks
	{ Left	3 wks	G.	Vision: hand movements to 6/9 in 6 wks
27	Left	3 wks	G.	Mild relapse 2 mths after cessation of treatment Improved, hand movements to 6/60 in 4 wks.
				Eye white. Right eye not treated by cortisone, took 3 mths to become quiet but eventually had vision 6/9
18	{ Right	7 wks	I.	Improved, counting fingers to 6/24 in 12 days.
	{ Left	1 day	G.	Much corneal scarring
				White in 7 days. No corneal scars. Relapse 24 days later equally controlled by G.
48	Right	1 wk	G. + I. 2	Further relapse also controlled by I.
				Improved rapidly
29	Left (3rd attack)	few days	I. 2	Seven relapses on stopping treatment, controlled by further G; last 2 mths symptom-free
16	Both	6 wks	I. 3 Both	Rapid improvement
				Right vision from hand movements to 6/18; Left from counting fingers to 6/12 in 4 wks
17	{ Right	8 wks	I. 5 Both	Improvement in vision from hand movements to 6/24 in 6 wks (both eyes)
	{ Left	3 wks		
44	Right	7 mths	I.	Residual inflammation improved
				No effect on old corneal scars
27	Right	6 wks	I.	Vision: hand movements to 6/9 in 4 wks.
				Mild relapse 2 wks after cessation of treatment controlled by G., then quiet for 1 mth
				Further recurrences also controlled by further cortisone; finally quiet with G daily
31	Right	4 mths	I.	Eye quiet in 4 wks
				Much residual scarring
28	Left	2 days	I. 2	Condition progressed in spite of cortisone
42	Both	7 wks	G.	Right treated—vision improved, hand movements to 6/12 in 17 days
				Left untreated—no improvement in same period
48	Right	7 days	G.	Marked reduction of pannus
15	Right	5 mths	I. 1	Nil (old corneal changes only; eye quiet)

easily controlled by further treatment. In established cases, if necrosis and fibrosis have supervened, there is no effect on the residual lesion except perhaps some emptying of the blood vessels invading the cornea.

Cortisone treatment is also indicated in *non-specific deep keratitis* (Table XXII), particularly in its early stages. The subjective symptoms improve rapidly, the vision in a number of cases improving from hand movements to a useful standard in a period of weeks, in cases in which, without treatment, it would have been expected that the inflammation and visual incapacity would have lasted for as many months. In this condition, however, relapses are common.

TABLE XXII
NON-SPECIFIC DEEP KERATITIS AND KERATO-IRITIS

Age	Duration	Cortisone	Effect	Remarks
67	4 wks	G. + I. 3	Moderate	Vision: counting fingers to 6/24
71	2 yrs	G.	Nil	Advanced case
43	6 mths	G.	Nil	Corneal infiltration with developing calcification
23	19 yrs	G.	Nil	Progressive corneal infiltration in rheumatoid case
				Advanced, ? tuberculous condition
80	4½ mths	G.	? Slight improvement	Temporary improvement only
36	2 wks	G. 8 days	Cured	Corneal infiltration of indeterminate aetiology
56	4 mths	G.	Cured	Recent case, no scar
57	5 wks	G.	Improved	Cured in 7 days leaving corneal nebula
44	4th attack 9 wks	G. + I.	Improved slowly on G., rapidly on I.	Recurrent attacks for 20 yrs. Resolution of relapse within 16 days
54	7 yrs	G. + I. 1	Improved rapidly	Vision: hand movements to 4/60 in 2 wks on G.
30	4 wks	G. + I. 4	Temporary improvement	Relapse 6 days after treatment—controlled by further injections. 4/60 to 6/12 in 2 wks on I.
50	3 wks	G. + I. 3	Nil	Further relapses 6 wks, 9 wks, and 10 wks controlled by G
26	6 wks	G. + I. 2	Improved	Eye quiet 6 mths
56	3 mths	I. 8	Improved rapidly	Relapsed as cortisone absorbed
48	4 wks	I. 6	Improved rapidly	Several relapses after treatment
46	3rd attack 4 mths	I. 1	Improved rapidly	? Tuberculous keratitis and iridocyclitis recurrent since childhood
72	3 wks	I. 3	No effect	General corneal haze with peripheral vascularization controlled in 48 hrs, eye white and quiet
22	Many attacks 15 yrs	I. 4	Improved	Vision: hand movements to 6/9 in 3 mths (? virogenic)
35	Present 7 days Many attacks 10 yrs	I. 4	Improved slowly	Vision: hand movements to 6/18 in 3 wks
74	2 mths	I. 4	Nil	Eye white 7 days
28	8 wks	I. 4	Improved gradually	Secondary glaucoma
36	3 wks	I. 2	Cured	Eye white in 3 wks as against usual duration of attack of 2 mths
28	4 wks	I. 8	Cured	Relapse 10 wks not affected by cortisone.
46	3 mths	I. 4	Cured	Iridectomy
42	Several mths	G. + I. 8	Improved	—
24	2 mths	I. 3	Good	Central corneal scar left
				Recent case, no scar in 7 days
				Vision: hand movements to 6/24 in 4 wks.
				Residual scar left
				Vision: hand movements to 6/9 in 4 wks. Slight relapse 7 days after treatment stopped, controlled by cortisone. Severe relapse 7 wks—again controlled
				Emptying of vessels, some clearing of nebulae
				Perception of light to 3/60
				Corneal abscess following abrasion
				Dense central quiet scar remains

A similar effect is seen in *sclerosing keratitis* (Table XXIII).

TABLE XXIII
SCLEROSING KERATITIS

Age	Duration	Cortisone	Effect	Remarks
34	Recurrent Present attack (4th) 6 wks	G.	Improved	Quiet 2 wks. No effect on old scars
42	Recurrent Present attack 5 mths	G.	Improved	Quiet 2 wks. No effect on old scars
53	Recurrent Present attack 7 yrs	G.+I. 4	Improved	Relapse on cessation of treatment
46	Recurrent Present attack (2nd) 3 mths	G.	Improved	Quiet 8 days. No effect on scars. 3 relapses controlled
54	Recurrent Present attack 6 wks	I. 2	Improved	Relapse 6 wks later
68	Present attack 2 yrs	I. 2	Improved	Clearing of recent haze (6/60 to 6/24 in 8 days). No effect on old scars
35	Recurrent Present attack (2nd) 8 days	I. 2	Improved	Relapse after 9 days later controlled by G
46	Right eye 20 yrs Left eye 2 yrs	I. 10 Left	Improved	No extension but no clearing

In *Mooren's ulcer* (Table XXIV), so far as this small series of cases is concerned, the results of treatment must be said to be equivocal. In two cases there was undoubtedly some subjective improvement with a reduction in vascularization, although no dramatic response nor any cessation of the active ulceration was observed. Further observations of this type of case are necessary.

TABLE XXIV
MOOREN'S ULCER

Age	Duration	Cortisone	Effect	Remarks
47	3 mths	G.+I. 4	? Symptomatic improvement	Several relapses with further response to G
48	14 mths	G.	? Symptomatic improvement	Further relapse during I. controlled by G
59	10 days	I. 2	Nil	Very early case Other eye excised for Mooren's ulcer

The following case reports demonstrate some typical conditions:

EPIDEMIC KERATO-CONJUNCTIVITIS in a male aged 37. The right eye became inflamed in November, 1950, with typical lesions of acute epidemic kerato-conjunctivitis including numerous corneal lesions and regional adenopathy. Several local applications, including penicillin, aureomycin, and chloramphenicol, were given; after the exhibition of the last two antibiotics there was a slight initial improvement but on each occasion the condition of the eye rapidly relapsed despite their continuation. In February, 1951, the condition, despite treatment, was progressive, with intense irritation and photophobia, considerable ciliary injection, diffuse roughening and irregularity of the epithelium, and scattered punctate areas of corneal staining interspersed between the nummular areas of scarring. Frank iridocyclitis had developed, with an aqueous flare and keratic precipitates. Two injections of cortisone were given and within 3 days

there was marked improvement in the appearance of the eye. Within 6 days the eye was quiet and the iridocyclitis had resolved. The corneal lesions had become reduced to faint localized nebulae and all subjective symptoms had disappeared. Cortisone drops were given for a further 7 days and since that time (6 months) the eye has remained quiet.

The next case illustrates the complete failure of the accepted methods of treatment to control an eye which threatened to run a progressive course and probably would have been lost, and its immediate improvement with relatively small doses of cortisone. The apparent retardation of epithelialization may be of significance.

KERATITIS WITH HYPOPYON ULCER.—An old corneal opacity was a sequel of ulceration 7 years before. The patient appeared in hospital after one week's history of pain in the eye, and showed a large central ulcer with a hypopyon and a violent iridocyclitis. He was treated for one month with the accepted methods of treatment, including penicillin and protein-shock by TAB injections, but no material improvement resulted. After a subconjunctival injection of cortisone, marked improvement was evident in 24 hours. A central corneal stain remained and the eye was still irritable, but the peripheral infiltration around the ulcerated area and the vascularization were diminished. Six days after the injection a relapse occurred which again was controlled immediately by a second injection. The condition of the eye six days later showed a loss of all congestion but a retention of the corneal staining and a slightly ectatic scar; carbolicization of the central area resulted in a disappearance of the staining and a white eye with a residual corneal nebula.

An example of the response of syphilitic interstitial keratitis to cortisone is illustrated in the following case wherein the keratitis was established in one eye before treatment was begun and in the other immediately after it was begun, so that the response in each provides some degree of experimental control.

INTERSTITIAL KERATITIS.—Wassermann reaction positive. On admission, a male, aged 18, showed an active and acute interstitial keratitis of the right eye of 7 weeks' duration with dense corneal infiltration and vascularization. This eye was treated by subconjunctival injections and was clinically quiet within 3 weeks, the vision improving from the ability to count fingers at 2 ft. to 6/24 within 12 days. Thereafter the condition of the eye has remained static; the deep corneal scarring persists but irritation has ceased. This in itself is an immense curtailment of the expected period of active disease.

The left eye was normal on admission, but on the fourth day an area of intense limbal injection and swelling appeared, with a corresponding zone of infiltration in the periphery of the cornea; the appearances were typical of commencing interstitial keratitis. Treatment by hourly drops was instituted and a progressive improvement resulted, so that within 7 days the eye was quiet and the cornea clear. A relapse occurred after 24 days, when the same area became much injected with marked localized corneal infiltration; again treatment by cortisone drops aborted the attack and the eye was white within 7 days without the development of vascularization. Two further relapses in this eye were controlled in the same effective manner by subconjunctival injections. One month later a severe relapse occurred which at present is responding to treatment. Despite this ordeal there is no evidence of corneal vascularization, and it may be that, if effective supervision is maintained, the eye will eventually retain good vision.

RECURRENT NON-SPECIFIC KERATO-UEVITIS.—Three attacks of kerato-uveitis occurred in 1940, 1941, and 1943, each lasting approximately 6 weeks. The present attack was more severe and had lasted 9 weeks before cortisone treatment was begun. At this stage the eye was much injected with a diffuse corneal haze and a thick exudate adhering to the posterior corneal surface which reduced the vision to hand movements. Cortisone drops were given 2-hourly, and during 2 weeks' treatment by this method steady improvement took place until the vision became 4/60. Three subconjunctival injections of cortisone were then given, and within 2 weeks the ocular inflammation had completely subsided, leaving a residual faint corneal interstitial scar. Six days after the last injection, however, there was a severe relapse which was again controlled within 12 days by two further subconjunctival injections. Two weeks later a further

relapse occurred which was controlled by cortisone drops in 17 days. A further mild relapse occurred 7 days after the withdrawal of cortisone and this subsided after one subconjunctival injection. Two weeks later there was yet another relapse, which was controlled within 2 weeks by 4-hourly cortisone drops. Since this time cortisone drops have been given continuously for 3 months without relapse, the condition being apparently controlled by the instillation of 1 drop daily. The further evolution of a case of this type will be of unusual interest.

Examples of the response of other corneal conditions are given in Table XXV.

TABLE XXV
CORNEA (UNCLASSIFIED)

Age	Disease	Duration	Cortisone	Effect	Remarks
39	Filamentary keratitis	2 mths	G.	Dramatic temporary improvement	Relapse on stopping treatment
58	Band-shaped corneal opacity (secondary)	4 yrs	G.	Improved	Subjective symptoms relieved
20	Suppurative vascular keratitis	3 wks	G.	Good	Some clearing of opacity Vessels shrank on treatment
69	Suppurative vascular keratitis	4 mths	G. + I. 1	Subjective improvement	Vascularization not affected Relapsed

SCLERITIS AND EPISCLERITIS (Table XXVI)

In general terms these conditions show considerable improvement with cortisone treatment. In the more superficial types of episcleritis a clinical cure may be rapidly obtained, but it is already evident, particularly in cases associated with rheumatic disease, that relapses tend to occur.

TABLE XXVI
SCLERITIS AND EPISCLERITIS

Age	Duration	Type	Cortisone	Effect
64	3 days	Episcleritis	G.	Rapid resolution
30	2 wks	Episcleritis	G.	Improved
62	4th attack	Episcleritis	G.	Quiet in 18 days
	3 mths			Relapsed in 9 days
27	5 wks	Episcleritis	G.	Cured in 7 days
41	4 mths	Episcleritis	I. 3	Improvement which was maintained
62	12 mths	Rheumatoid episcleritis	Syst. 75 mg. twice daily for 8 days	Nil
55	2nd attack			
	5 wks	Scleritis	G. + I. 6	Subjective improvement only
30	years	Scleritis	I. 2	Marked improvement
50	2 mths	Rheumatoid scleritis	G.	Quiet in 2 wks; relapsed, again controlled
50	2 mths	Rheumatoid scleritis	G.	Nil
17	3½ mths	Nodular scleritis	G. + I. 2	Quiet in 3 wks; relapses in 10 wks and 14 wks, again controlled
50	1 day	Zoster scleritis	G.	Slight improvement in 3 wks
50	2nd attack	? Tuberculous scleritis	G.	Marked improvement; 2 relapses, controlled
	2 wks			
63	12 mths	? Tuberculous scleritis	G. + I. 1	Nil
47	5 mths	? Tuberculous scleritis	I. 6	Quiet in 6 wks
70	6 mths	Brawny scleritis	G.	Slight improvement in 3 wks; relapsed; no further response

CONJUNCTIVITIS (Table XXVII)

The following case is of interest as showing the effect of treatment in a case which stubbornly recurred over a period of two years:

BILATERAL CHRONIC CONJUNCTIVITIS.—Swabs and cultures were negative as was also a full series of allergic tests, and the aetiology must therefore be classified as unknown. Local treatment of all kinds, including the application of silver, alum, albugid, antistine, adrenaline, argyrol, and a number of antibiotics, had been without effect. Initially, cortisone was given 2-hourly by drops, and on the third day both eyes were white and free of symptoms while clinically the conjunctivae appeared normal. For a further 3 days the drops were given 4-hourly, for a further 14 days 6-hourly, and then for 3 days 12-hourly. The apparent and dramatic cure was maintained, and the patient has remained symptom-free (6 months). It is obviously too early to express an opinion as to the final outcome of this case but the immediate effects are without doubt.

Unfortunately, similar cases can be quoted in which, although some subjective temporary relief was experienced, no appreciable effect from cortisone could be seen.

TABLE XXVII
CONJUNCTIVA (VARIOUS CONDITIONS)

Age	Disease	Duration	Cortisone	Effect	Remarks
28	Allergic conjunctivitis	1 yr	G.	Good	Relapse 3 wks after stopping treatment No response to antibiotics Responded to cortisone
39	Allergic conjunctivitis	1 yr	G.	Good	Quiet in 3 days; 2 relapses controlled
48	Spring catarrh	2 yrs	G.	Good	Subjective symptoms disappeared. Two gelatinous bulbar nodules disappeared in 2 wks. Marked cobble-stone appearances in upper tarsal conjunctiva entirely disappeared in 3 wks. Severe relapse 3 mths, controlled
38	Chronic conjunctivitis	3 yrs	G.	Good	Tarsal conjunctiva stubbornly resisted all forms of treatment for 2 yrs An apparent clinical cure after 20 days' treatment
64	Chronic conjunctivitis	1 yr	G.	Nil	—
45	Pannus trachoma	10 days	G.	Improved	Marked reduction of pannus in 24 hrs Relapsed in 3 wks
39	Post-operative chemosis (strabismus)	7 days	G.	Cured	Had persisted for 7 days Considerable relief after 24 hrs' cortisone Cured in 5 days
60	Post X-ray ophthalmia Conjunctivitis iritis	6 mths	G.	Improved	Rapid improvement in conjunctivitis and iritis; mild relapse 2 months Corneal vascularization unaffected
59	Post-radium kerato-iritis	18 mths	G.	Marked improvement	Radiation for ethmoid carcinoma Corneal staining, severe iridocyclitis Rapid resolution, corneal vascularization unaffected
37	Epidemic kerato-conjunctivitis	4 mths	I. 2	Good	Resistant to penicillin, aureomycin, and chloramphenicol Faint localized nebulae left after 10 days

DRUG ALLERGIES (Table XXVIII)

The effect of cortisone in these conditions is illustrated in 25 cases; all were treated topically by drops, with injections in five cases in addition. The results are seen to be very irregular.

In approximately one-third of the cases in which the irritation was due to atropine, the condition was controlled. In an approximately equal number no improvement was evident. In the remainder, the control of symptoms was only temporary while in

some cases irritation occurred for the first time during a course of treatment by cortisone.

Our experience with hyoscine was similar and in the small number of cases wherein irritation to albucid or penicillin was observed, equally inconsistent results were obtained.

TABLE XXVIII
DRUG ALLERGIES

Age	Agent	Cortisone	Effect
42	Atropine	G.	Good
58	Atropine	G.+I.	Occurred during cortisone treatment
72	Atropine	G.+I.	Occurred during cortisone treatment
34	Atropine	G.	No effect
22	Atropine	I.	Occurred during cortisone treatment
35	Atropine	I.	Nil
70	Atropine	G.	Good
			Cured in 3 days
52	Atropine, mild	G.	Tolerated atropine with cortisone, later without
48	Atropine, mild	G.	Tolerated atropine with cortisone
58	Atropine, mild	G.	Tolerated atropine with cortisone, later without
37	Atropine	G.	Cured in 4 days
46	Atropine	G.	Occurred during cortisone treatment
53	Atropine	G.	Controlled
24	Atropine, hyoscine	G.+I.	Occurred during cortisone treatment
40	Atropine, hyoscine mild	G.	No effect
31	Atropine, hyoscine mild	G.	Tolerated atropine with cortisone, later without
54	Hyoscine	G.+I.	Good
41	All mydriatics	G.	Occurred during cortisone treatment
44	All mydriatics, severe	G.	Tolerated all with cortisone
60	All mydriatics, severe	G.	Tolerated E 3 with cortisone
54	All mydriatics, severe	G.	Tolerated E 3, but not atropine
50	All mydriatics, severe	G.	Tolerated E 3
39	Albucid	G.	Improved
63	Penicillin	G.	Improved
			Antistine-Privine G. and Benadryl also given
55	Penicillin	G.+I.	No effect

CHEMICAL INJURIES TO THE CORNEA (Table XXIX)

In our series no response was obtained to cortisone therapy apart from temporary suppression of the irritative symptoms in a case of late mustard-gas keratitis.

TABLE XXIX
CHEMICAL AND OTHER BURNS

Age	Agent	Cortisone	Effect on		Remarks
			Congestion	Vascularization	
19	Lime	G.	Nil	Nil	No value
45	Nitric acid	G.	Good	?	Subjective symptoms relieved; opacity remained No inhibition of epithelial healing
27	Cotton seed oil	G.	Nil	Nil	No value
51	Mustard gas 13 yrs' duration	G. 14 days	—	—	Rapid initial improvement with healing of the ulcers, but relapse after 10 days on treatment

CORNEAL GRAFTS (Table XXX)

Six cases of post-operative iritis, with clouding of the graft and neo-vascularization, showed good results on the whole, and vascularization which appeared to be progressive was checked.

The two following cases demonstrate that the initial opacification and vascularization of a graft may be inhibited and that some improvement can be obtained even when such changes are well established:

The first case had a LAMELLAR KERATOPLASTY for old interstitial keratitis. After 14 days, numerous interstitial vessels were present, both entering and passing deep to it. On the 21st day a single subconjunctival injection of cortisone was given followed by the instillation of drops; one week later the graft had cleared and no vessels were seen, a condition which has persisted after 6 months.

In the second case, a PENETRATING KERATOPLASTY was done for a 10-year-old lime burn. Two months after the operation, opacification and vascularization of the graft began; three months later the graft and cornea were uniformly opaque and both were extensively vascularized, vision being reduced to the perception of hand movements. After three injections of cortisone together with drops thrice daily for 14 days, many of the smaller vessels had emptied and cauterization of a large feeding vessel produced some further temporary reduction. Vision was unaffected. During the succeeding 3 weeks cortisone was continued (three injections, and drops thrice daily), with the result that some further depletion of the circulation in the smaller vessels was seen, accompanied by marked reduction of the opacification in both cornea and graft. At this time vision had improved to finger counting. After six more injections, increased clearing of cornea and graft became noticeable and the vision eventually reached 6/60.

TABLE XXX
CORNEAL GRAFTS

Age	Complication	Onset of Complication after Operation	Duration of Complication before Treatment	Cortisone	Effect
53	Iritis with keratic precipitates	4 wks	3 days	G.	Improved
34	Iritis with keratic precipitates	10 wks	2 wks	G.	Improved
65	Opacity + vessels	2 mths	2 mths	G.	Nil
44	Vascularization	10 days	10 days	I. 2	Vascularization checked
68	Vascularization	5 days	2 days	G. + I. 4	Vascularization checked
25	Opacity + vessels	2 mths	3 mths	G. + I. 11	Old lime burn 10 yrs ago. Vessels reduced. Graft and remainder of cornea partially cleared

OTHER PATHOLOGICAL CONDITIONS.—The following showed no clinical response to cortisone.

Ocular pemphigus	Cases: 5	Cortisone : G. (one also treated parenterally)
Stevens-Johnson's disease...	1	G.
Recurrent conjunctival granuloma after insertion of plastic tube in canaliculus	1	G.
Superficial punctate keratitis	3	G. + I.
Retinal thrombophlebitis	1	I.
Periphlebitis retinae (Eales's disease) ...	6	I.
Coats's disease	2	I.
Macular degeneration	5	I.
Traumatic vitreous haemorrhage*	1	I.
Retrolental fibroplasia	2	I.
Devic's disease	1	I.
Sjögren's syndrome	1	I.

Summary

A summary and assessment of these results will be found in the preceding paper in this Journal (p. 667).