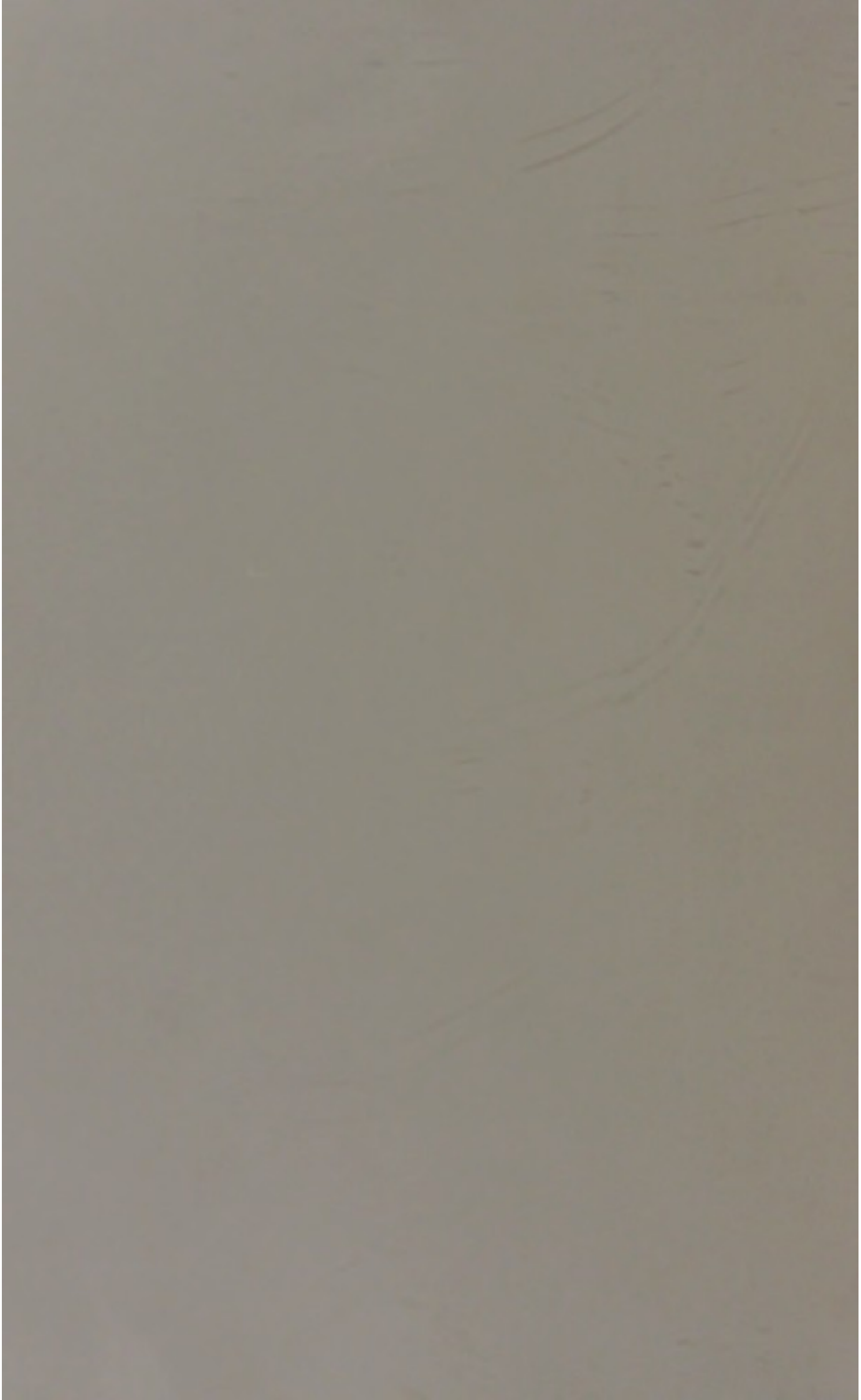
Ophthalmia : report on ophthalmia in the Metropolitan pauper schools / by Edward Nettleship.



REPORT

ON

OPHTHALMIA

IN THE

METROPOLITAN PAUPER SCHOOLS,

BY

Edward Nettleship, F.R.C.S.,
Surgeon to the South London Ophthalmic Hospital,
&c. &c.

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REPORT

ON

OPHTHALMIA in the METROPOLITAN PAUPER SCHOOLS.

By EDWARD NETTLESHIP, F.R.C.S.,
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late Curator and Clinical Assistant at Moorfields Ophthalmic Hospital.

4, *Wimpole Street, Cavendish Square,*
26th December 1874.

My Lords and Gentlemen,

HAVING been informed by Dr. Bridges of your desire that I should make an examination of the metropolitan pauper schools in respect to ophthalmia, I beg to present a Report of the results of my inspection.

The inspection was made between 12th August and 24th September 1874.

Such an examination was wanted for several reasons. Ophthalmia, with its complications and results, has for long (perhaps always) furnished by far the largest item in the average sick lists of the metropolitan pauper schools ; and that this continues to be true is shown by the fact that of all the children who were in the infirmaries* of these schools at the time of my inspection 61 per cent. were under care for ophthalmia, all other diseases together furnishing the remaining 39 per cent.

Proportion of Ophthalmia on Medical Relief Lists.

It was necessary that the examination if made should be made on a uniform method, the same standard being used for all the schools. Thus it was important that the whole inquiry should be made by a single observer, since medical men employ more or less different standards and terms in reference to this disease, as to some others, so that conclusions based on reports from the medical officers of the several schools would possibly have contained some fallacies from which it is hoped the present Report may be free.

I shall as far as possible avoid the use of medical words and purely medical facts, but of course shall not be able to dispense with them altogether. Some technical details which are necessary for confirming or illustrating my conclusions will be found in the Appendix.

The examination consisted of a brief inspection of the inside of the eyelids and front part of the eyeballs of every child in the schools, a record of the state of these parts being at once entered on a printed form prepared for the purpose. I also made incidentally such observations as circumstances allowed on the general state of each school as to structure, regime, and administration so far as they bear on ophthalmia. When the present tense is used it refers (unless otherwise stated) to the date at which the inspection was made, not to the date at the head of this Report.

I am much indebted to Dr. Bridges for his invaluable help and advice in the arrangement and execution of my inspections, and for much information on various matters embodied in this Report.

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* The word "infirmary" is used here and throughout this Report as equivalent to "Medical Relief Book." At several schools it is the custom to treat mild cases of ophthalmia without placing their names on this book, so that the number of children "*in the Infirmary*" is sometimes considerably less than the number who *are under treatment*.

The materials collected furnish data for ascertaining with more or less completeness the following chief points :—

A. The present condition of the schools *collectively* as to ophthalmia ; this I propose for convenience to call the "*ophthalmic state.*" It will be prefaced by a very short statement of the chief features of the disease, and by a definition of the word "ophthalmia" as used in this Report ; *pp.* 6 *to* 16.

B. The *ophthalmic state* of each of the schools ; *pp.* 16 *to* 43.

C. The connexion between the *ophthalmic state* and the mode of life in these schools ; *pp.* 43 *to* 48.

D. The relation of the *ophthalmic state* to age and sex in the schools ; *pp.* 48 *to* 55.

E. The influence which conditions independent of school-life have on the *ophthalmic state* of the children in the schools ; *pp.* 55 *to* 63.

F. Whether it is practicable to get rid of ophthalmia almost entirely from the metropolitan pauper children without abolishing the schools, and if so by what means ; *pp.* 63 *to* 81.

A.—*The Ophthalmic State of the Schools collectively.*

Prefatory description and definition.—Before passing to the details of this division it will be necessary to describe very shortly what I mean in this Report by ophthalmia and its consequences. It would be out of place to dwell on the distinctions between different kinds of ophthalmia further than to say that two distinct types of diseased action are generally found united in the cases which occur in the schools, and not unfrequently in those occurring outside the schools also. One of these is the *chronic* disease known as "granular lids" or "granular ophthalmia," a state which comes on in men and many lower animals under various unhealthy circumstances, and of which prolonged exposure to air made impure by organic matter and excess of moisture is probably the cause. The other includes all kinds and degrees of *acute* inflammation of the conjunctiva* from the slightest attack due to wind, dust, or various other causes to the severest forms of purulent ophthalmia. Cases are sometimes still further complicated by obstinate inflammation of the roots of the eyelashes. By far the most serious visible results of ophthalmia are found in the opacities and irregularities of the cornea which it not uncommonly causes, and to which various degrees of defective sight are due. I put aside for the present the very considerable interruption to which the disease always gives rise in the children's education.

Two chief types of disease.

Results of Ophthalmia.

The opacities and irregularities of the cornea above spoken of are broadly divisible into those produced by the friction of the rough ("granular") eyelids over the smooth, transparent and highly sensitive cornea ; and those due to ulceration of the cornea, varying from the production of small specks to the rapid mortification of the entire structure. Ulceration often comes on during acute ophthalmia, and is especially apt to occur, either with or without inflammation of the conjunctiva, in persons who are in low or bad health (or suffering, in

* "*Conjunctiva :*" this is the membrane which lines the whole of the inner surface of the eyelids, and passes from them to the front of the eyeball, the white opaque part of which it invests. The "*cornea,*" another technical word, which I cannot avoid using rather often, is the circular *transparent* part of the front of the eyeball ; its recognition is facilitated by comparing it to watch-glass ; the *conjunctiva* ceases at the margin of the *cornea.*

common phrase, from "poorness of blood"). In practice the opacities due to friction are often found to be mixed with those caused by ulceration. Indeed ulceration is often excited in feebly nourished persons by a rough state of the eyelids, and it is to a concurrence of either low health, or bad health, with granular lids in most of the children in these schools that the majority of the specks and opacities are due; neither low nor bad health nor granular lids singly would have such results in so many cases.

The granular state of the eyelids, when only slight or moderate in degree, is not *of itself* a matter of much importance in most cases. It gains great consequence, however, from the facts that eyelids so affected are far more susceptible to causes of acute inflammation than healthy eyelids, that the inflammation is apt to become more severe, is much more difficult to cure, is far more likely to occur again and again, and generally leaves behind it an increase of the granular condition. Acute inflammation of a previously healthy conjunctiva is generally, except when of the severest type, a comparatively trivial matter; inflammation relatively mild in degree often leads to serious consequences when it happens in an eyelid which was already more or less granular.

Definition of "Ophthalmia."

By "ophthalmia" I shall in this Report mean such combinations of the above states (granular lids, acute inflammation of the conjunctiva, and corneal damages due directly or indirectly to these conditions) as require medical treatment for their own sake, or isolation for the sake of others. The symptoms by which I have been guided are; 1st, the presence of discharge from the conjunctiva, its quantity, and more or less purulent character; 2nd, ulceration, when still active, of the cornea; 3rd, inability to bear the light; 4th, constant winking due to the roughened conjunctiva irritating the cornea; 5th, many cases of bad granular lids, without present symptoms, have been counted for administrative purposes as cases of ophthalmia.

Granular disease of the eyelids when uncomplicated gives rise to no discharge from the eye, or at most to only a little, and it is not caused by contagion or infection. Any discharge that does occur will transmit inflammation, but will not transmit the granular state, to the eyelids of another person.

On the other hand, the forms of disease here included under the title of acute inflammation of the conjunctiva, or acute conjunctivitis, are always accompanied by the formation of yellowish opaque discharge or "matter," varying much both in quantity and quality. Conjunctivitis may be set up by a great many causes, but in whatever way produced it can always propagate itself if the discharge is transplanted to another eyelid, either of the same or another person, and either of man or a lower animal. The discharge need not even be derived from an eyelid at all; matter from the urethra and vagina will cause conjunctivitis; indeed, the most violent form of purulent ophthalmia is that due to inoculation with gonorrhœal discharge; probably it may also be produced by matter from discharging sores on the skin. Discharge is most contagious when fresh and moist; when dried or freely diluted with water it is less powerful. When produced in very large quantities it may be transferred for a short distance through the air, but as this probably seldom occurs except when facilities for other modes of inoculation are very abundant, I attach no great importance to it. Contagion is by far the commonest cause of severe acute ophthalmia; it is also a very common cause of the milder cases, but a considerable number of the latter are due to other causes acting on already granular eyelids. Among the commonest of these are strong winds, dust, particles of coal, soap, &c., draughts of cold air blows on or near the eye, and

lastly certain constitutional febrile diseases, especially measles and influenza. It is nearly certain that a large proportion of first attacks are, under ordinary circumstances, due to contagion, while most of the relapses are caused by some of the other causes mentioned acting on granular eyelids whose irritability has been heightened by the first attack.

It will be evident, from the importance attached to the granular state in its various degrees, that some distinction is necessary between children whose eyelids are healthy and those in whom they are rendered liable to inflammatory action by this condition. Although no very sharp line can be drawn between eyelids which are absolutely healthy and others which are in the earliest stage of the granular disease, a separation of considerable practical value can be made without any great difficulty between children whose eyelids are healthy and those who are predisposed to ophthalmia, both these groups being again distinguished from children with badly granular lids or with active ophthalmia.

Definition of "Ophthalmic State."

The "ophthalmic state" (including evidences of present and past disease) consists of the following *factors; a.* discharge differing much in *quantity* and *quality*, the latter not being susceptible of precise measurement; *b.* certain opacities and irregularities of the cornea; *c.* the proportion of badly granular eyelids, predisposed eyelids, and healthy eyelids respectively; to these will be added in estimating the *past* state of a school, *d.* the proportion of children who have previously had ophthalmia.

The Ophthalmic State of the Schools.—The number of children in the schools at the time of my inspection was 8,798. This total includes 119 who were then at the Margate Infirmary for metropolitan children. These children will be counted in future as belonging to the schools of which they would have been inmates at the time of my inspection if they had not been at Margate.

Of the total 8,798, 12 per cent. had more or less conjunctival discharge when I saw them. A few others had intolerance of light and active corneal ulceration. The per-centage of children with discharge, as well as the quantity and character of the discharge itself, varied greatly in different schools. In the great majority its quantity was small and its quality mild.

Another group of the children amounting to about 30 per cent. of the whole number had granular lids of considerable severity, although without any discharge or other discomfort. A large proportion of these, it is impossible without seeing them repeatedly to say how many, will again require treatment sooner or later, and some of them will have several relapses.

Proportion with Ophthalmia.

If we say that 15 per cent. of all the children (or about 1,300) (12 per cent. with discharge and 3 per cent. for other symptoms) are suffering from active ophthalmia requiring isolation and more or less treatment we shall certainly not over-estimate the number.

The actual number of children who were in the infirmaries for ophthalmia at the time of my visits was 579, or about 6·5 per cent. of the whole number; so it appears that 8 or 9 per cent. more were still at large in the body of the schools. Of course the infirmaries always contained the worst cases.

With a few exceptions which will be mentioned as they occur, the cases, even those in the infirmaries, were mild in degree; the inflammatory symptoms not being severe, the amount of discharge small or moderate and the danger of severe corneal damage slight. The cases remaining in the body of the schools (and which of course make no

show in the medical relief books) were as a rule very mild indeed as regards actual symptoms. Almost all, however, both in and out of the infirmaries, had well marked granular lids and would be subject to relapses often of a tedious character.

There were great variations between different schools in the *quantity* and *character* of the discharge, and as these differences could seldom be recorded in detail the mere *number* of children with discharge in each school is not a fair test of the severity of the disease therein. The chief differences will be noticed as they occur.

I found still greater differences between the schools as to the minimum degree of ophthalmic affection for which isolation and treatment were thought necessary. A number of children with an amount of discharge which most doctors, and myself among them would consider to involve a serious risk of contagion, were found at large in some schools, while at others almost every child with even a trace of discharge was in the infirmary. Deficient infirmary accommodation sometimes accounted for this, but not always; it sometimes was the result of deliberate purpose, because cases of the degree here indicated are not by all medical officers believed to be contagious, or because it is supposed that by concentrating a number of mild cases together into the infirmary the *intensity* of the disease would thereby be increased.*

The number of children with healthy eyelids throughout the schools was equal to 15 per cent. of the whole number.

Lastly, I found 40 per cent. of the children whose eyelids were in a condition of slight disease, or were in general terms predisposed to obstinate and relapsing ophthalmia. Many of this group had already had one or more attacks, generally mild ones.

The two last per-centages, however, require some correction for practical purposes. A child whose eyelids are in the slightly granular state ceases after several years to have any special liability to ophthalmia if during that time he happens to escape a first attack, and this notwithstanding that some remains of the granular condition still exist. For this reason 40 per cent. is rather too high a figure, probably 35 per cent. would be about correct, the other 5 per cent. being reckoned as healthy. This correction will be made throughout unless otherwise specified.

We thus arrive at the following result:

TABLE I.—CONDITION of the EYELIDS in ALL the SCHOOLS (neglecting fractions).

State of Eyelids.

1. Healthy	20 per cent.
2. Predisposed to ophthalmia; many having already suffered from one or more attacks, but no serious changes yet produced	35 „
3. Active ophthalmia [Consisting of cases with discharge, 12 p. c. „ „ other symptoms, 3 p. c.]	15 „
4. Bad granular lids without present symptoms; many of them extremely subject to relapses and to corneal damage	30 „
	100

* There is no reason whatever to think that the collection of a large number of contagious ophthalmic cases into one ward or building will result in an increased severity of the symptoms in the patients, unless there be overcrowding or neglect of obvious precautions against contagion, defects which usually imply culpable neglect.

Proportion with damaged sight,

The amount of permanent damage to sight caused by this disease is the next important item in the actual state of the schools. A few words of explanation are here needed. The *degree* of damage to sight was measured only in the very worst cases; in all, excepting those headed "lost" and some of those headed "severe" the amount of damage represents only my *opinion* as formed from the extent, position, and character of the opacities. It is likely enough, therefore, that my estimate of the number of cases with "moderate," "slight," and "very slight" damage respectively may be either over or under the real amount of each. The total number of children with damages of all degrees is, however, certainly accurate. (Appendix, p. 86, reasons for classification of corneal damages here adopted, &c.)

I have divided the corneal damages found in the schools into two main groups. One includes all which have no connexion at all with the ophthalmia which forms the subject of this Report. In the other the damage was either caused directly by ophthalmia or the two were intimately connected; these I propose to call the *ophthalmic corneal damages.*

due to Ophthalmia;

The number of children with ophthalmic corneal damages in all the schools was 793 or 9 per cent. In 353 of these both eyes were damaged, while each of the remaining 440 had only one cornea so affected.

With regard to the *permanence* or otherwise of these opacities it is again impossible to do more than offer an opinion. In general terms those which were in progress at the time I saw them would most likely improve considerably and some of them would disappear altogether; of such cases I noted about 40. No doubt I omitted to note a few others, and even supposing as an extreme case that there may have been as many as 40 overlooked this would give only 80 or about 1 in every 10 in whom improvement was to be confidently expected. The great majority were evidently of at least several months, and many of several years' duration. I believe that the great majority of these will be permanent though a certain number will slowly improve and perhaps quite disappear. We must, however, set against the improvable opacities a not inconsiderable number which are at least as likely to get worse; this is especially apt to happen in many cases of bad granular lids. On the whole, therefore, I judge that a large majority of the opacities will remain permanently almost as they were when I saw them; that a few will quite disappear in a short time (a few weeks or months), and that a moderate proportion will improve more or less after several years, many having in the interval relapsed several times and become temporarily worse.

The ophthalmic corneal damages were classified in six divisions, as follows, according to their severity.

I. *Eyes lost* (*i.e.* either absolutely blind, or damaged so much as to be barely able to distinguish the outlines of very large objects such as doors and windows).

Total, 44 children { Both eyes lost - 2 ; 1 eye each - 42

6 of these (losing 1 eye each) occurred outside the schools.

11 of them can perhaps be partly remedied by operation.

1 of them (losing both eyes) is accompanied and much increased by disease of the cornea due to inherited syphilis, and may improve after several years.

II. *Severe damages* (patient unable with the damaged eye to distinguish small objects at all, or at best only with difficulty and when held close to the eyes; enough sight for various household or other unskilled employments).

Total, 66 children { Both eyes - 35 / 1 eye each - 31

6 of these (2 with both eyes damaged, 4 with one eye each) occurred outside the schools.

10 cases are likely to improve.

8 are accompanied and increased by inherited syphilitic disease.

III. *Moderate damage* (patient partially disabled for seeing small objects, *e.g.* needlework and reading, but able to do these with more or less difficulty).

Total, 229 children { Both eyes - 147 / 1 eye each - 82

6 of these (3 with both eyes damaged, 3 with one eye each) occurred outside the schools.

15 cases (9 both damaged, 6 with one eye each) will probably improve.

6 cases (4 both damaged, 2 with one each) are likely to get worse.

4 cases are accompanied and increased by heredito-syphilitic disease.

IV. *Slight damage* (sight a little impaired by small specks at or close to the centre of the cornea).

Total, 358 children { Both eyes - 144 / 1 eye each - 214

11 cases (4 with both damaged, 7 with one eye each) will improve.

6 cases (2 with both damaged, 4 with one eye each) are likely to get worse.

V. *Very slight damage* (cases like the former but slighter in degree).

Total, 78 children { Both eyes - 21 / 1 eye each - 57

VI. *No damage* (opacities and irregularities which from their position could not interfere at all with sight).

Total, 21 children { Both eyes - 4 / 1 eye each - 17

I made no attempt to ascertain how many of the damages headed "slight" and "very slight" had occurred before the children entered the schools. I shall, however, bring evidence to show that most of the slighter damages have occurred in the schools, while with regard to the great majority of the graver ones there is no doubt at all that this is the case. (See also Appendix, p. 59.)

The total number of corneal damages from all other causes (*non-ophthalmic damages*) was 59 or just ·66 per cent. of all the children. not due to Ophthalmia.

Ophthalmic State of the Schools separately.—I propose here to give the leading differences between the various schools, or groups of schools nearly resembling one another, in the proportions of healthy, predisposed, actively diseased, &c. (For tables giving full details for each school see Appendix, p. 71 *et seq.*)

A few words of caution are needed, however, as to the amount of mild ophthalmia (measured by the number of children with discharge from the eyes) in the several schools. The order of merit of the schools in this respect is liable to considerable variations from time to time. The order in which I have placed them must be taken to represent

Number of cases liable to frequent fluctuations.

simply the state of things which, in this particular, existed at the time of my visit. More or less extensive outbreaks of mild ophthalmia are far from uncommon in the schools, and it is tolerably certain that were I to inspect the schools again now I should not find them all in the same relative positions as given in this Report. The comparative freedom enjoyed by several of them at my visits does not in all cases indicate a permanently safe state. As to the *permanent* ophthalmic state of the schools the evidence afforded by the proportion of bad granular lids, of corneal damages, and of previous eye disease is much more reliable.

I. *Proportion of children with active ophthalmia, as shown by the presence of discharge.*

The smallest proportion (3 per cent.) was found at Mile End school; the largest (28 per cent.) at Mitcham.

Arranged in groups the schools stand as follows:—

a. Not more than 5 per cent. had discharge	Mile End	3 per cent.	
	Islington, Leavesden, "Goliath"	4 „ „	each.
	Anerley, Brentwood	5 „ „	each.
b. From 5 to 10 per cent. of the children had discharge	Battersea, Leytonstone	6 „ „	each.
	Forest Gate	7 „ „	
c. From 10 to 15 per cent.	Hanwell	11 „ „	
	Plashet	13 „ „	
	Sutton	14 „ „	
d. More than 15 per cent. of the children had discharge	Edmonton	16 „ „	
	Norwood	17 „ „	
	Ashford, Southall	19 „ „	each.
	Mitcham	28 „ „	

II. I have already mentioned that the *quality* of the discharge varies greatly in different cases of ophthalmia and that it was very different in the several schools. Although this is a subject on which an opinion can be formed only from the general character of the cases in each school I think it will be useful to attempt an approximate arrangement in order of merit, the best schools, as before, being placed first and those in each group being about equal.

Group *a.*	Mile End.	Group *d.*	Hanwell.
	Islington.		Edmonton.
	"Goliath."		Norwood.
„ *b.*	Leavesden.		Ashford.
	Anerley.		Southall.
	Brentwood.	„ *e.*	Mitcham.
	Battersea.		
„ *c.*	Leytonstone.	„ *f.*	Sutton.
	Forest Gate.		
	Plashet.		

It will therefore be seen that with a few exceptions the *quantity* and the *quality* of the discharge vary in the same direction; the most marked exception is Sutton, which was worst as regards quality of discharge and of which I shall have more to say.

III. The proportion of children with *bad granular lids* in each school.

a. Not more than 40 per cent. of the children with bad granular lids	Mile End	17 per cent.	
	Islington	17 „ „	
	Leavesden, Forest Gate	26 „ „	each.
	Southall	31 „ „	
	"Goliath", Sutton	35 „ „	each.
	Anerley	38 „ „	
b. From 40 to 50 per cent.	Leytonstone	41 „ „	
	Brentwood	43 „ „	
	Hanwell	45 „ „	
	Norwood, Ashford	49 „ „	each.
c. From 50 to 60 per cent.	Plashet	51 „ „	
	Mitcham	56 „ „	
d. From 60 to 70 per cent.	Battersea	63 „ „	
	Edmonton	66 „ „	

There is much less correspondence between the table last given and the two former than between Nos. I. and II. Still the agreement is on the whole well marked between the groups of schools which have the least discharge and those with the smallest proportion of bad granular lids. The want of correspondence between those with a high per-centage of discharging cases and a high per-centage of bad granular lids is due to several circumstances. Thus at SOUTHALL, which has a relatively low per-centage of bad granular lids, there was nevertheless at the time of my inspection a large proportion with discharge, owing, as I believe, at least in part, to the relaxation of stringent measures which were in force till the early part of the year. SUTTON again has lately had a severe outbreak of purulent ophthalmia. In both these schools a continuance of the existing prevalence of ophthalmia would result in a large increase of bad granular lids. The other most marked exception is BATTERSEA, which has 63 per cent. of bad granular eyelids, but only a small proportion of children with discharge; at this school there was, however, a short time ago a great deal of active ophthalmia though of no great severity; the large number of Irish children also no doubt helps to increase the proportion of bad granular lids (see p. 59). The same excess of Irish children no doubt partly accounts for EDMONTON holding the worst place of all as regards eyelids, while as to quantity and quality of discharge it was, when inspected, only moderately bad.

IV. The relative proportions of *ophthalmic corneal damages* in the schools.

Total ophthalmic corneal damages per cent. of all the children.

Group *a.* Schools where not more than 7 per cent. of the children had ophthalmic corneal damages.	"Goliath"	2·5 per cent.
	Islington	4·4 „ „
	Southall	5·3 „ „
	Leavesden	6·5 „ „
	Anerley	6·8 „ „
	Mile End	7· „ „

The following table gives the proportion of children in the same schools who have suffered from the *three graver degrees of ophthalmic*

corneal damages, viz., those which I have classed as "lost," "severe," and "moderate."

"Goliath"	1·25 per cent.
Islington	2·4 " "
Southall	3·5 " "
Leavesden	2·9 " "
Anerley	2·2 " "
Mile End	3·5 " "

In respect to these graver damages the order of merit is therefore considerably altered.

Group *b*. Schools where more than 7 per cent. of the children have ophthalmic corneal damages.

Mitcham	8·6 per cent.	Battersea	11·3 per cent.
Plashet	8·8 " "	Leytonstone	11·3 " "
Sutton	8·7 " "	Brentwood	12·1 " "
Norwood	8·7 " "	Hanwell	12·1 " "
Ashford	9· " "	Edmonton	14·3 " "
Forest Gate	9·1 " "		

The following are the proportions of the *three most serious degrees* of corneal damage for these schools (as given for group *a*.)

Mitcham	3·8 per cent.	Battersea	8· per cent.
Plashet	4·2 " "	Leytonstone	6·3 " "
Sutton	2·4 " "	Brentwood	2·8 " "
Norwood	5·6 " "	Hanwell	4·9 " "
Ashford	3·9 " "	Edmonton	6·2 " "
Forest Gate	3·7 " "		

Here as in group *a*. the order is a good deal changed if we regard only the worst damages. It will be particularly noticed that SUTTON, notwithstanding the severe and destructive outbreak which has just occurred there, has on the whole a small proportion of the graver damages though the number of "lost" eyes alone is very large. (Appendix, Table 14, p. 99.)

There is a general correspondence between the first group (*a*. Table IV.) and that containing the smallest per-centage of bad granular lids, and the one with the smallest proportion of discharge (Tables I. and III.). The agreement is, however, not accurate. The very small proportion of corneal damages in the "Goliath" is of course largely accounted for by the care taken in selecting boys with good sight to be trained there; it is also partly due to the absence of "girls" and "infants" from the ship, and partly to the excellent management. There is also a general agreement between the schools having the largest proportion of bad granular lids and of discharge (Tables I. and III.), and those with the highest per-centage of corneal damages (*b*. Table IV.), particularly in respect to the higher numbers. At FOREST GATE the corneal damages are disproportionately abundant in relation to the number of bad granular lids. I should account for this in part by the fact that ophthalmia was much more abundant at this school several years ago than it has been of late, some of the children having remained in the school longer than they otherwise would have done in consequence of injured sight; while it may be in part due to a low average state of health among the Whitechapel and Poplar children. There is a somewhat similar discrepancy at Leavesden; here I think the undue proportion of corneal damages (and especially of the graver ones which form nearly half of the entire

number) may be explained by the retention in the school of some old cases of damage from Plaistow and Hanwell where the children were kept before the present school was built.

V. The relative proportion of children in each school *who have ever had ophthalmia* requiring treatment (for explanation, see Appendix, p. 97).

a. Schools where not more than 40 per cent. of the children have had ophthalmia - - -
- Mile End - 26 per cent.
- Islington - 33 „ „

b. From 40 to 60 per cent. -
- Leavesden - 45 „ „
- Forest Gate - 48 „ „
- Anerley - 52 „ „
- Norwood - 53 „ „
- Southall - 54 „ „ each.
- Sutton - 54 „ „ each.
- Brentwood - 55 „ „
- Plashet - 60 „ „

As would be expected there is a very close agreement between this group and the group (*a.* Table III.) containing the smallest number of bad granular lids. Both are records chiefly of past disease.

It was to be anticipated, also, that the agreement between this group and the group (*a.* Table I.) having the smallest per-centage of discharge would be much less exact. The same schools appear at the head of each group, but there are several which at my visits showed a higher proportion of active ophthalmia than corresponded with their previous history. This is especially the case with Sutton, Southall, and Norwood, in all of which the disease has increased notably of late.

c. More than 60 per cent. -
- "Goliath" - 61 per cent.
- Leytonstone - 63 „ „
- Ashford - 65 „ „
- Battersea - 69 „ „
- Mitcham - 73 „ „
- Edmonton - 78 „ „
- Hanwell - 80 „ „

The very high proportion of previous ophthalmia at Hanwell is partly accounted for by the fact that treatment is begun at a very early stage in that school, so that many children are at Hanwell placed under treatment and therefore afterwards tell you they have had "bad eyes," who at most other schools would be left alone. With the exception of the "Goliath" (for which it is easy to find an explanation in the fact that many of the boys had ophthalmia at their schools before coming to the training ship) this group nearly corresponds to the groups (*d.* Table I., and *b.*, *c.*, and *d.* Table III.) containing the highest proportion of discharge and of bad granular lids respectively. Most of the schools in this group also show a high proportion of ophthalmic corneal damages.

VI. The relative proportion of *healthy eyelids* in the schools. As before the best schools are placed first.

a. Schools in which from 31 to 25 per cent. of the children have healthy eyelids - - -
- Mile End - 31 per cent.
- Islington - 29 „ „
- Southall - 26 „ „
- Leavesden - 25 „ „

b. From 25 to 20 per cent. - "Goliath" - } 23 per cent. each.
Leytonstone - }
Forest Gate - 22 „ „
Anerley - 21 „ „
Sutton - } 20 „ „ each.
Norwood - }

These schools are nearly the same as those containing the smallest per-centage of bad granular lids (*a.* Table III.). Most of them also have a small proportion of children with discharge, while in all the best of them the proportion of ophthalmic corneal damages is low.

c. From 20 to 15 per cent. - Brentwood - 18 per cent.
Mitcham - 16 „ „
Ashford - } 15 „ „ each.
Plashet - }

d. Less than 15 per cent. - Hanwell - 14 „ „
Battersea - } 12 „ „ each.
Edmonton - }

All of these schools have a high per-centage of bad granular lids, and nearly all of them a large proportion of discharge. Every one of them also shows a large proportion of ophthalmic corneal damages.

Conclusions.

The materials have now been given for forming a judgment of the relative ophthalmic condition of the schools. Such a judgment may include both the present and past state of each school, so far as the latter is recorded by the condition of the children's eyes, or it may refer to the actual state only.

Taking into account all the six conditions above given, which include the present and to some extent the past state of the schools, MILE END is at the head of the list in five out of the six, and ISLINGTON is second in every one. LEAVESDEN is partly third and partly fourth, and ANERLEY is nearly fifth.

It is difficult to say which school is worst as to ophthalmia if we include past and present conditions, but HANWELL, SUTTON, PLASHET, LEYTONSTONE, ASHFORD, EDMONTON, and MITCHAM are all bad.

For obvious reasons an estimate of the state of the schools, either past or present, cannot be safely formed only from tabulated facts, since there are many things of importance which cannot be so dealt with. The following estimate of the *present* relative condition of the schools in respect to this disease is therefore based partly on the foregoing tables and partly on other data. I shall here reverse the order hitherto adopted and take the worst schools first as they require for the present the most attention. When, as is the case at one or two schools, there is reason to think that the present state will be materially altered for the better in future, this will be noticed.

B.—*The Ophthalmic State of each School.*

SUTTON.

SUTTON was on the whole in decidedly the worst condition of any on account of a severe outbreak of purulent ophthalmia which had occurred during the previous ten months. This began at the end of September 1873, partially ceased in November, but again became more prevalent in December and the early months of the present year, and continued more or less till the middle of last August, since which date no severe cases have, I believe, taken place.* The total number of cases entered in

* At a visit to the school on November 20th, I learnt that several severe cases had occurred during the month following my inspection, but that they had ceased about the end of September.

the Medical Relief Book as "purulent ophthalmia" between the end of September 1873 and the middle of August 1874 was 101. A certain number of others, which it is impossible now to verify, being admitted and described in an early stage and becoming purulent afterwards, appear only as "ophthalmia," or "measles and ophthalmia." Although an eminent oculist was consulted as to the best measures of treatment, and notwithstanding every care and trouble on the part of the medical officer, 11 of the cases have lost one eye each and 1 has practically lost both; in several others less degrees of damage resulted. In several (8 at least) Dr. Wilton tells me that the malady took on the "diphtheritic" type, a form of disease in which the danger of severe corneal damage is much increased; this occurred principally between the middle and end of July last.

The early cases in this outbreak were chiefly among the boys, the first case recorded in the Medical Relief Book, under date September 28, 1873, being in a boy aged 11, who was admitted to the school on the 12th of June previous. The second and severer part of the outbreak beginning in February 1874, was first noticed in two infants while suffering from measles in the separate infirmary set apart for infectious diseases. It spread to other children in the same and the adjacent ward, all of whom were suffering with or recovering from measles. So long as many fresh cases of measles occurred no attempt was made to remove the ophthalmic cases from the infectious building, the measles being for the time the most urgent; but the measles having declined, and the ophthalmia in this building having been nearly got rid of, the remaining eye cases (*viz.*, 3 infants with purulent ophthalmia) were removed and placed *by themselves* in one of the small eye-wards of the general infirmary. They were here attended by a nurse who also had partial charge of other (mild) ophthalmic cases in a neighbouring ward. The doors of these two wards were near to one another on opposite sides of a narrow corridor; communication between them on the children's part appears to have been effectually prevented, but the nurse in charge had far too many cases under her care to enable her to ensure the strict observance of this and various other necessary regulations. The day after the 3 infants were imported from the infectious building a fresh case of purulent ophthalmia occurred in a young boy sleeping in the opposite ward referred to, and within a day or two another case in an elder girl under the care of the same nurse for mild ophthalmia. After this the disease spread rapidly. Two of the nurses have lost an eye each from the disease.

Dr. Wilton tells me that there had been an epidemic of measles in the school previous to the commencement of purulent ophthalmia in the autumn of 1873. It lasted from the middle of May to the middle of September, and affected chiefly girls and infants. The early cases of purulent ophthalmia were chiefly among the boys, and Dr. Wilton therefore was unable to connect the two occurrences. That the measles had caused an increase in the *number* of eye-cases is, however, nearly certain from the fact that while on 7th June 1873 there were 50 cases of ophthalmia in the infirmary this had risen to 100 on 26th July and to 108 on 20th September. It remained at or about the latter number for 2 months, then fell somewhat until 31st January 1874 when there were 90 cases under care. In the middle of February 1874 the number suddenly rose to 120, and from that date it continued on the whole to increase steadily till the date of my visit in the middle of August when there were 160 cases of ophthalmia in the infirmary. This does not necessarily mean that the number of *new* cases increased in the same proportion, for many of the cases had been in the infirmary several months and dis-

charges probably took place more slowly than admissions owing to the tedious nature of the disease.

Two other important facts are associated with this epidemic of ophthalmia. In June 1873, during the first outbreak of measles, two new blocks of buildings, quite separate from the old school and separated from each other, were opened. At the same time the minimum age of admission to the school was reduced from 4 to 3 years. The result was a sudden increase in the number of inmates from (in round numbers) 1,300 at the end of June to very nearly 1,500 in the middle of July, while it rose to over 1,600 during the months of December 1873, and January, February, and March 1874. The largest of the new blocks contains "infants" of both sexes from 5 to 7 and boys from 7 to 10 years old; its numbers were about 400 when I visited the school. The smaller new block is intended to accommodate the infants from 3 to 5 (the "nursery" children) of whom it contained about 35 when I was there; its remaining rooms were then in use as probation wards for newly admitted children, and were under separate management from the nursery department.

It is further to be noticed that notwithstanding the repeated and energetic recommendations of the medical officer, no adequate increase was made in the nursing staff to meet the great increase of work caused by the larger number of ophthalmic cases.

Most of the bad cases of ophthalmia were amongst the infants and younger boys, *i.e.*, in the inmates of the new building. This is a very instructive fact, since there was no overcrowding and the ventilation and general construction are good. It is to be observed, however, that the children washed, until quite recently, in wooden bowls, and that once a day they dry on round towels which are supplied at the rate (in the case of the boys 7 to 10 years old) of 1 towel to 15 children, the towels being changed after each washing. At the morning and evening washing each child in the new block has a separate towel which is hung over the bed-head when not in use and carried by its owner to and from the lavatories which are close to the sleeping rooms; these hand towels had hitherto been changed twice a week. The washing is under the superintendence of nurses and monitresses. The infants and young boys are bathed only once a week. Pocket-handkerchiefs had not hitherto been allowed.

I attribute the recent destructive ophthalmia at Sutton to measles, aided by the following circumstances: a sudden increase in the number of children; the lowering of the age of admission and the consequent influx, in all probability, of a number of sickly infants in whom any inflammation would be apt to take on a severe form; a considerable degree of general overcrowding, the total accommodation in the old and new buildings, exclusive of the infirmaries, being equal to only 1,470 children at 30 square feet of dormitory floor space each, while the numbers since November 1873 have ranged from 1,575 to 1,630; the defective washing arrangements, perhaps also the bad construction of the playsheds in the new buildings and the dust from the tar-paved play-yards, may have added to the naturally high susceptibility of young children, and helped to produce the much greater prevalence of the mild forms of ophthalmia in this department than in the older school.

I am not aware that any outbreak approaching this one in severity had before happened at Sutton. Dr. Bridges has given an account of a mild though extensive attack which occurred in the autumn of 1869 at a time when the school was a good deal overcrowded, the infirmary accommodation much too small and the washing arrangements very bad.

The lavatory arrangements are now better, and since the new building has been opened the classification of the children according to age and size has been much better carried out. The latter change is one whch from the ophthalmic point of view has both weak and strong points ; the separation of the younger from the older boys is good if, as appears to be the case here, they are fairly supervised. An extra man and woman have been appointed specially to supervise the young boys out of school hours, while a number of older boys (about two dozen) are employed in various capacities among them. I must add that both the superintendent and the medical officer are strongly of opinion that this classification has had an excellent effect. If, however, there were no more officers in proportion for the small than for the big boys the plan would be as likely to do harm as good, since the mere admixture of the little boys with the older ones tends to prevent the former from huddling together, crouching in dusty and dirty corners, or under walls, as they are so apt to do if left comparatively alone. There has, however, been as much overcrowding since the new building was opened as before, because the total numbers in the school have risen nearly in proportion to its increased accommodation.

The following table gives the *number of cases* and *per-centage of all the school in the Medical Relief Book* at stated intervals during several years. I must here call attention to the note, p. 5, on the incompleteness of the evidence afforded by the Medical Relief Books as to the real number of cases of mild ophthalmia in the schools, and to the note* at the foot of this page.

Table 2.—SUTTON.	1870.	1871.	1872.	1873.	1874.
Average number of Ophthalmic cases in Infirmary at end of *each 4th week*, 29th January to 13th August (average of 8 returns) - - - - - -	39	52	92	77	123
Average number of children in School at same dates (same returns) - -	1186	1239	1233	1378	1580
Average per-centage of the children in Infirmary for Ophthalmia at same dates (same returns) - - - -	3·28	4·23	7·5	5·5	7·8

So that there has been a steady rise in the per-centage of children under treatment in the infirmary for ophthalmia during the first eight months of each year since 1870 with the exception of 1873 when the proportion fell during this part of the year.

Mitcham is, next to Sutton, in the worst state ; indeed, it is in a much worse condition than Sutton in all respects except the severity of the disease. A much larger proportion of the Mitcham children had conjunctival discharge than was the case at Sutton, while 45 per cent. of the children were under treatment for their eyes as compared with 10–15 per cent. at Sutton, and this without any marked difference in the standard adopted by the respective medical officers. The proportion of bad granular lids is also very large. This state of things has certainly Mitcham.

* It will be well to mention that about November 1872 a Circular Letter was sent from the Local Government Board to the authorities of all the schools requiring a periodical inspection of the children to be made with regard to external diseases. It is highly probable that this may have resulted in the detection of cases of ophthalmia which had previously escaped notice, and if so we have here at least a partial explanation of the rise observed in the number of eye cases on the Medical Relief Books of several schools since about the date mentioned.

been going on for at least a year, for I visited the school in the summer of 1873 and then saw many cases much resembling the present ones and several of greater severity than any now there. On the whole, the eyes in this school are no doubt better than they were in 1873, but it is hopeless to expect any great improvement so long as the present administrative and structural defects are allowed to continue. The amelioration already effected has coincided with the following changes made at Dr. Bridges' advice; increased medical care, diminution of the school hours and increased out-door exercise, an improved dietary, better washing and towel arrangements, and the cessation of all admissions to the school during the first three months of the present year (1874).* That Mitcham has escaped without recently losing any eyes I look upon as due largely to the very considerable attention given by the medical officer and to the recent improvement in the dietary. The plan adopted by Dr. Marshall's advice about a year ago, of keeping all the young infants who on admission to the school have healthy eyelids permanently apart from the rest, has the effect of preventing them from catching the disease, while at the same time it necessitates the infants being spread over more ground and looked after by more officers. Mitcham, however, will be always in great danger of a destructive outbreak as long as its present radical defects continue. It appears always to have suffered a good deal from the disease and has a bad name among the other schools; thus the Mile-End children are said to have suffered severely from ophthalmia when, in 1857, they were sent to Mitcham during the erection of the Mile-End school; again 1 "lost" eye, 2 cases with "severe" damage of both eyes, and 3 cases of "moderate" corneal damage at present in other schools are attributed to former residence at Mitcham.

HANWELL. I think HANWELL must be placed next on the list to Mitcham. There is always a good deal of eye disease, moderate in type, at Hanwell; and this state of things will continue as long as the present system, which may be shortly described as an arrangement for favouring the production and spread of the disease and then keeping it in check by unceasing, laborious and expensive medical treatment.

Between 12 and 13 years ago (in the early months of 1862) a destructive outbreak occurred at this school very similar to the recent one at Sutton and in which about 7 eyes were lost, 2 children losing both eyes. The circumstances resembled those at Sutton, in so far that an epidemic of measles had prevailed in the school a short time before the bad ophthalmia began (some time in 1861), and that the number of children in the school had been increased just before the ophthalmic outbreak. The school not being filled at the then existing standard by the children from its own Union others had been received on farm from St. Pancras. The destructive disease is said to have been traced to one of these farmed children who had it on admission, but whether this was the real source of the outbreak or not is now a matter of little moment. Mr. Bowman was called in and found at least half the school suffering more or less; by his advice an increased medical and nursing staff was provided and by the end of May the worst of the disease was over, though as Mr. Bowman reported at the time it still "threatened to burst out afresh in its worst forms."

* There is no reason to doubt that the improvement would have continued and increased had it been possible for a longer time to exclude fresh admissions. The workhouse, however, becoming too full of the retained children, these were, at the end of three months, obliged to be sent down to the school, bringing measles with them. As a natural consequence the ophthalmic cases again increased in number.

Ever since that time the managers have maintained a resident medical officer whose whole time is given to the school. At Mr. Bowman's advice also the play-yards were paved with York flags to prevent dust. No radical structural improvements have, however, been made, and the infants' department especially is still very defective. I have no doubt whatever that had it not been for the unremitting attention and skill of the successive resident medical officers Hanwell would have had other serious outbreaks since 1862. As things are, however, the disease has always been very prevalent and serious in degree, as is shown by the high per-centage of corneal damages (12·11 per cent. as compared with 9 per cent., the average of all the schools), and of bad granular lids, and by the considerable proportion of children with discharge. In the winter of 1871–72 a large outbreak of measles occurred (160 cases), and this had the effect of increasing the eye cases a good deal both in number and severity; only one child, however, suffered any considerable damage to sight. From monthly returns supplied to me by Dr. Littlejohn it appears that since April 1869 (when he began office) there have never been less than between 30 and 40 cases in the infirmary for bad eyes; the number has once gone up to 100, and numbers between 60 and 90 are the rule. The ophthalmic wards in the infirmary are not, however, nearly large enough to hold all the children who are under treatment for their eyes at any one time, and I understood that from 100 to 150 of the slighter cases are treated daily as "out-patients" without being separated from the body of the school; so that at Hanwell out of a total of from 1,100 to 1,200 children from 150 to 250 are constantly under treatment for their eyes. It is fair to add, however, for purposes of comparison, that many of the slighter cases which are treated at Hanwell would not be thought to need treatment by the medical officers of many other schools. No doubt the maintenance of this high standard has made it possible to keep the disease at the moderately low degree now seen.

RETURN of Ophthalmic Cases *in the Infirmary* (*i.e.*, excluding cases treated as out-patients, and which do not appear on the Medical Relief Book).

TABLE 3.—HANWELL.	1869. April to December, 10 returns.	1870.	1871.	1872.	1873.	1874.
Average number of Ophthalmic cases in Infirmary at *end of each 4th week*, January to 31st July (average of 8 returns) -	44	53	76	51	76	77
Average number of children in School at same dates (same returns) - - -	1029	1184	1219	1146	1166	1147
Average per-centage of the children in Infirmary for Ophthalmia at same dates (same returns) - - -	4·3	4·4	6·2	4·4	6·5	6·7

I have taken corresponding periods in each year (excepting 1869, the year of Dr. Littlejohn's appointment) because there are notable differences between the several years in their later months, and they could not fairly have been compared with the first eight months of the present year.

I have placed ASHFORD, NORWOOD and SOUTHALL next in order, and name them together because their present ophthalmic state is in ASHFORD, NORWOOD, SOUTHALL.

general terms the same. There are differences of detail in their relative present condition, while as regards the signs of past ophthalmia Southall holds a far better position than the other two, Ashford being in this respect the worst. The causes of the present state of things are also different in the three schools.

ASHFORD. ASHFORD, the newest of the schools, has been open only just two years. Its construction is better than that of any other school and it contains just half its full number of children. One fifth of all its inmates had discharge, the vast majority of these being infants, of whom 50 per cent. showed this symptom. There were, however, no severe cases.

I attribute this bad state to the following circumstances. Although the whole school is but half filled, the infants' department is over-crowded and has been so all along. There is accommodation for 80 infants; when I visited the school there were 100 and I was told that this number was lower than it had ever been before; at one time there had been 120. Although two years is the youngest age of admission there is no "nursery" department for the smallest children. I noted at the time that the general health of the infants appeared bad; they were "pale, "and several were feeble, badly nourished, and evidently under two "years old." Only 12 children out of the whole school were in the Infirmary for ophthalmia, although the wards of this building were nearly empty, while there were more than 50 (nearly all of whom were infants) with considerable discharge in the body of the school. These, and also some others who had intolerance of light and wore shades, were considered to have "weak eyes" but not to require treatment in the Infirmary, the medical officer being of opinion that such cases are as a rule due to dust and causes other than contagion, and that there is less risk of the disease taking on a severe type if they are diluted by mixture with healthy children than if concentrated together into the Infirmary. These cases are treated with various mild remedies by the matron who appeared to me to be entrusted with too large a share of the medical charge of the children. All the infants sleep in double beds. When the school was first opened many cases of bad ophthalmia occurred, especially among the boys, and chiefly in the St. George's, Hanover Square, children who had previously been at the Plaistow school. Finally there is a high per-centage of Irish children at Ashford.

Previous importation of bad cases, perhaps aided by measles which broke out soon *after* the bad ophthalmia occurred, no doubt had some share in beginning the present bad state of things. The maintenance of this unsatisfactory condition is mainly due, I have no doubt, to the over-crowding of young unhealthy infants, and to their sleeping in double beds. Much also is in my judgment due to the theory which appears to me quite erroneous, that it is better to allow mild cases to remain in the school than to make them Infirmary patients.

SOUTHALL. There has been a large increase in the number of cases of eye disease at SOUTHALL during the present year (*i. e.*, up to the date of my inspection at the end of August). The cases have for the most part slight, and no bad results have occurred. Indeed, since the end of March many of the slighter cases have been treated as "out-patients," having their eyes treated daily or as required and being allowed to remain in the body of the school, although the infirmary has not been full. I understood from the able and energetic medical officer, Dr. McDonald, that he had introduced this plan of out-patient treatment for the first time at the end of March 1874, when he found the number of mild cases increasing, and that he prefers to treat such cases as out-

patients in order to check malingering* and allow their education to go on as usual; and he thinks this course of non-isolation justifiable because he does not believe that cases so mild in degree are often caused by contagion. With regard to the character of the cases above mentioned, they are no doubt mild enough and the disease often does not interfere much with the patients' comfort; but that the standard adopted at Southall does not compare favourably with what is thought necessary as regards isolation in most other schools the following note which I made directly after the inspection will show :—" I have as yet seen no " school in which children with so much discharge as many of these " boys and infants show, are allowed freely to mix with the healthy " children in the school, or in which children with decided conjunctivitis " are allowed to do so. Ashford is nearly as bad in this respect among " the infants, but not quite." I quite agree with Dr. McDonald that many cases of ophthalmia, especially the milder degrees of it, own other causes than contagion, and that therefore a certain number would arise if no contagion were possible; the general evidence, however, both at Southall and elsewhere is strongly in favour of the belief that contagion plays a very important part in the spread even of these mild cases when precautions against it are not taken. I do not believe that under ordinary circumstances† discharging ophthalmia can become *and remain for months* prevalent among a body of persons unless facilities for contagion exist.

The following are the facts as to the relative number of children under treatment for ophthalmia in this school for corresponding periods in each year from 1871 to 1874:

Table 4.—SOUTHALL.	1871.	1872.	1873.	1874.
Average number of cases in Infirmary for Ophthalmia *at end of each week* between 1st January and 31st August (average of 35 weekly returns) - -	10	4·0	6	10
Average number of children in School at corresponding dates - - -	460	365	420	400
Average per-centage of children in Infirmary for Ophthalmia at same dates -	2·1	1·1	1·3	2·6

This table does not include those treated as out-patients. This plan has been in action since the week ending 28th March 1874. The average number of out-patient ophthalmic cases on the last day in each week from March to the end of August was 19, or 4·7 per cent. of all the children in the school at the same dates, in addition to the infirmary cases.

Further examination shows that the adoption of the out-patient system had not, up to the date of my visit, when it had been in practice for 5 months, had the effect of diminishing the proportion of cases which it was thought necessary to admit into the infirmary; the latter

* The belief in malingering I find is almost universal among the medical and other officers of the schools. The idleness and better food of the Infirmary are supposed to offer strong attractions to the children, especially I believe to the little boys. There is probably some truth in an opinion expressed by so many independent witnesses and if so there is all the more reason for adopting the plan of separate schools for ophthalmic children.

† Wind and dust will sometimes cause an outbreak simultaneously among a large number of persons exposed to these influences, and in countries where there is much dust for months together, as in Egypt, this cause may contribute to maintain a large average number of cases throughout the year.

class of cases indeed increased instead of diminishing, as is shown in the following table:—

TABLE 5.—SOUTHALL.

	1874.
Average *per-centage of the School,* in Infirmary for Ophthalmia *at end of each week* from 3rd January to 29th August 1874 -	2·6
Same average for 12 weeks, 3rd January to 21st March, before the out-patient plan was begun - - - - -	2·1
Same average for 23 weeks, 28th March to 29th August, while out-patient plan was in action - - - -	2·9

So that the average per-centage of the children under treatment for eye-disease *in the infirmary* was nearly 1 per cent. greater during the whole of the 5 months following the commencement of the out-patient system than during the 3 months immediately before. It is just possible that season may have had a share in this increase.

The *total* number of the children under treatment at the end of each week since the adoption of the out-patient plan (*i.e.*, the sum of infirmary cases and out-patients) amounts to 7·7 per cent. of all the children in the school at the same dates.

The difference between 1·3, the per-centage in 1873, and 7·7, the proportion in 1874, is so large that it is mostly likely in part *apparent* only, caused that is by treatment having been begun at a somewhat earlier stage of the disease this year than formerly. But as the medical officer said nothing of having purposely done this it is impossible to assume that more than a small part of the increase is due to this cause.

Southall takes a very high place if we look only at the signs of past disease; thus it has a comparatively low per-centage of bad granular lids and of corneal damages and a high proportion of healthy eyelids.

The features which I think worst at Southall, in respect to this disease, are the facilities for contagion allowed by the washing arrangements and by the want of day rooms. The latter applies especially to the infants from 2 to 7. The boys and girls have very long round towels which are changed once a day and supplied at the rate of 1 towel for each 11 children or thereabouts. The infants from 2 to 7 use chiefly hand towels at the rate of 3 children to a towel, with a few round towels in addition. The washing is done in earthenware basins which are filled from taps. There are no day-rooms and only very small play-sheds. The play-grounds are small and bad, but this defect is to a great extent remedied by a small grass field which since 1869 has been set apart for a play-ground and is constantly used by one class or another of the children in fine weather. The want of day-rooms is felt most by the infants 2–7. The babies, aged 9 months to 2 years, which form the peculiar feature of this school, are admirably provided for both as to day and sleeping accommodation, and are well tended; their small number make it easily possible for them to receive a good deal of personal attention; scarcely any of them have ophthalmia. The infants from 2 to 7 have no room to play in except their school-room. This room affords about 19 *square feet* of floor space per child (for the number present at my visit); it is fairly ventilated and warmed, but I was told that it gets close on winter days when the children are in it almost all day long. There was no over-crowding of the infants' dormitories.

The difference between the amount of ophthalmia among the boys and girls was very markedly in favour of the girls.

In general health the Southall children contrasted very favourably with several other schools, a result which is largely attributable to the

care and attention bestowed by Dr. McDonald on everything connected with them and especially on his dietary system. Most likely the small per-centage of corneal damages is partly due to the fact that the children are, as a rule, in good health.

All the infants sleep in single beds.

There is no reason why the present state of this school as to ophthalmia should continue if more precautions against contagion were adopted. It is likely to become permanent, however, if the present system is persevered in.

NORWOOD.

At NORWOOD there were 28 children in the infirmary for ophthalmia, but this included nearly all in the school in whom the disease showed any severity. There were about 15 others in the body of the school with a little discharge, but in most of these it was very slight and chiefly mucous.

The isolation of the ophthalmic cases was therefore much better carried out here than at the two preceding schools.

Several of the infirmary cases were of a rather severe type with profuse discharge, though none showed any risk of severe corneal damage.

On more than one occasion there has been a larger amount of ophthalmia at Norwood than there is now. Many years ago a severe outbreak occurred in which one of the boys (who is now a master in the school) lost an eye. In 1870 a rather extensive outbreak of mild ophthalmia began ; it lasted more than a year, and affected about 80 children ; this was at a time when the numbers were about 420, slightly higher than at present, but unfortunately the medical return of ophthalmic cases during this period has been mislaid. From returns of the number of eye cases under treatment in the infirmary at the end of each 4th week (excepting 1870 and 1871) it appears that there has been a steady increase in the number of cases since 1872 as compared with 1868 and 1869, and this notwithstanding a fall in the number of children, and without, as the medical officer informs me, any changes in structure or administration to account for it. The following table gives the same particulars as shown above for Southall ; excepting for 1870 and 1871, during both of which years the number of ophthalmic cases was probably a good deal higher than in either 1869 or 1872.

TABLE 6.—NORWOOD.	1868.	1869.	1872.	1873.	1874.
Average number of Ophthalmic cases in Infirmary at end of each 4th week, 25th January to 8th August (average of 8 monthly returns) - - - -	6	5	9	19	24
Average number of children in School at corresponding dates (same returns) -	460	410	350	345	340
Average per-centage of the entire School in Infirmary for Ophthalmia at corresponding dates (same returns) - -	1·37	1·28	2·74	5·4	7·23

I cannot ascertain any special reason, other than the general one already mentioned (note, p. 19,) for the very marked increase of ophthalmic cases.

Norwood is under great disadvantages in several respects. Some parts of the building are 50 years old and their construction defective from a sanitary point of view. The infirmary consists at present of

three departments; the infirmary proper, an old and ill-constructed building containing 36 beds which are partly set apart for eye cases; the probation ward, built in 1868–69, but now used for ophthalmic cases, and containing 10 beds; lastly, the cases of eruption on the scalp and some others of skin disease (numbering 30 in all at the date of my visit) are placed in one of the school dormitories which is set apart for that purpose. The number of nurses was enough (1 to 14 patients at the date of my visit), but the efficiency of some of them struck me as doubtful.

The infants' school-room is miserably small and badly ventilated; but on the day of my visit only 27 infants out of a total of 57 were attending school. Their day-room accommodation is fair.

The girls, although rather more numerous than the boys, have a smaller school-room, a smaller play-yard, no day-room except a small class-room which is used for this purpose out of school-hours and a dormitory now and then in bad weather, and no needle-room, the needle-work being done partly in the school-room and partly in the dormitories.

The boys have a day-room, but it is dark, cold, and half underground.

The playgrounds are pleasant and partly shaded by trees, but are almost enclosed by buildings. There is also about 1 acre of grass field set apart for play and used on several afternoons a week in fine weather by one or other class of the children.

The school is, however, notwithstanding its serious defects, much better now than formerly, many improvements and additions having been gradually made. The Guardians have been most anxious to enlarge and improve the infirmary, but have hitherto found great legal difficulty in obtaining a site for the purpose. The last addition was the probation ward which, however, has not been used as such for the last year since quarantine has been carried out at the workhouse. The washing and towel system is tolerably good, but the towels are not changed often enough. There was no *general* over-crowding in the dormitories, but I did not obtain the details of this subject. The number of inmates has been as high as 520 (in the beginning of 1868) and the school was considered to be quite full then. The proportion of corneal damages is a little below the average, but the "lost" and "severe" cases together form a much larger proportion of the whole than in most other schools.

The defects of the Norwood school are, I have no doubt, in part mitigated by the very considerable degree of care and personal attention bestowed by the officers generally on the children; there was a more homely air about the place, and (so far as I could judge by a single visit) a better tone among the children than is commonly found in these schools.

EDMONTON.

At EDMONTON I was told that between three and five years ago there had been a good deal of eye-disease soon after the school had been increased by the addition of children, from two fresh parishes, who had till then been maintained partly at Hanwell and partly at a small separate school at Isleworth, but that since then the disease had not been abundant. The medical officer told me that he knew of only one eye having been lost in the school.

I found 28 cases of ophthalmia in the infirmary; they were almost all quite mild, not one was at all serious. Besides these, 11 mild cases of "weak eyes" among the boys were provided with a class-room, dormitory and yard separate from the rest of the school; they were

receiving some medical treatment but were not entered on the Medical Relief Book. There were in addition at least a dozen others, chiefly boys, with more or less discharge, in the body of the school. Several of the "weak eye" cases were quite as bad or worse than some of those in the infirmary.

The proportion of children with healthy eyelids was smaller at Edmonton than at any other school, while this school also holds the worst place of any in its per-centage of bad granular lids and of corneal damages. The *degree* of the corneal damages was, however, on the whole very mild as compared with several other schools, the total of the "lost" and "severe" together forming only a small proportion of the entire number.

It thus seems pretty clear that ophthalmia, though of a mild type, has been prevalent at Edmonton for several years, and that in this respect its past condition has not differed widely from its present state. Since the beginning of the present year the medical officer has kept a record of the state of the eyes of every child admitted to the school, and from this it appears that out of a total of 214 admissions (new admissions and fluctuating children) during the first $8\frac{1}{2}$ months of the present year, 76 or about 30 per cent. were at the time suffering from evident ophthalmia (*i.e.* discharge). I shall refer to this statement afterwards.

The causes of the very great prevalence of severe granular lids and mild ophthalmia at Edmonton, and its relative freedom from severe acute disease and bad corneal damage, are partly internal and partly external. Of the external causes the importation of children from Isleworth and Hanwell played an important part, for many of these showed signs of severe past disease. The very high per-centage of Irish children is another cause to which I shall allude again.

The internal causes are, I think, to be found largely in the following facts. The *boys'* eyes were in a far worse state than the girls', and were worse in degree than the infants'. The ventilation of the boys' school-rooms is very defective; the same applies to their dormitories, and this although many of them were little more than half full. They have no day-room and only a very low and ill-ventilated shed in the yard; their play-yard is enclosed by high walls on all sides; their bathing arrangements are defective. The most important particular in which the *girls* are better off than the boys, is in the much better ventilation (owing to superior architectural design) of their dormitories. Their school-room and playground are also rather better than the boys'. The washing arrangements are worse for the girls than the boys, the bathing details somewhat better. Many of the smaller boys and girls sleep in double beds. Among the boys and girls round towels are used exclusively. These are supplied at the rate (on the boy's side) of one towel to about six boys, and this quantity changed twice a day.

The *infants* below five form almost a separate department, except for school purposes. They have a good day-room on the first floor, and appear to be well tended by two nurses and some elder girls. Their dormitories are good, but they all sleep in double beds. There is a large well-shaded lawn in front of the house, which is much used by the infants in summer and the abundant out-door exercise they enjoy doubtless accounts in great part for their generally healthy aspect, notwithstanding the considerable amount of ophthalmia among them. Their bathing arrangements were defective and the supply of clean towels (one to about three infants changed once daily) is not large enough for safety.

The arrangements for ensuring a good state of health among the infants appeared to be satisfactory and with the addition of precautions against contagion ought to produce a better state of their eyes.

The nursing at the infirmary struck me as very good and the eye cases there well cared for. One of the two nurses in charge of the infants in the *school* had lately had a bad attack of ophthalmia in her right eye; she had been in the school only three months, and had had nothing to do with the infirmary.

This school is under disadvantages as to construction, which depend partly on the present premises having been gradually formed out of and around an old mansion and partly from the newer parts not having been planned so well as, considering their date, ought to have been the case.

PLASHET. LEYTONSTONE. I have placed PLASHET and LEYTONSTONE on an equality, because there is no wide difference between their present degree of contagiousness and there are important points of resemblance in their recently past history.

PLASHET. At PLASHET there were 15 very mild ophthalmic cases in the infirmary and about as many more children with very slight chronic discharge in the school.

About five years ago there was an outbreak of short duration among the infants, causing no bad results. In 1871 a severe and destructive outbreak occurred, chiefly among the girls, in which several eyes were lost and others much injured; three "lost" eyes and two or three others a good deal damaged which were in the school at my visit were due to this outbreak. The severe disease occurred in June and July, measles having visited the school in the preceding May. The ophthalmia was not attributed to importation. Mr. James E. Adams was consulted by the Guardians and made a Report to them, but I have not succeeded in obtaining a copy of it.

There has been no destructive ophthalmia at this school since the summer of 1871, but the present medical officer assured me that the school was not free from cases of moderate severity when he took office about a year and a half ago. He has hitherto carried out a large part of the treatment personally and he believes strongly in the necessity of inspecting the children very often and beginning treatment at an early stage.

The number of children in the school when I visited it was less than three quarters of the maximum, but in the infants' dormitories there was nevertheless very considerable crowding each infant having only 20 *square feet* of floor space. The boys had very nearly twice as large a sleeping area and the girls had 27 superficial feet each.

The infants' day-room gave about 18 square feet of floor space; it is used also as their dining-room and as a nursery for about 12 of the youngest. It is warmed by hot water. The windows have been darkened with the view of preventing ophthalmia. The young infants did not look vigorous or well. All the infants and some of the little girls sleep in double beds.

The play-yards are of tolerable size and paved with slabs. The washing and towel systems are excellent on the *boys'* and *girls'* sides, and seemed well carried out; each child has a separate *numbered* towel, so that the same towel returns at each washing to the same child. This arrangement, together with the much greater crowding and the double beds on the infants' side, may be noticed in connexion with the very much larger proportion of children with discharge among the

infants than among either the boys or girls. The following is the usual ophthalmic table for Plashet :

Table 7.—PLASHET.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
Average number of Ophthalmic cases in Infirmary at *end of each 4th week* throughout the week (average of 13 returns; for 1874, 10 returns, January to 14th September)	12	11	8	8	8	12	10
Average number of children in School at same dates (same returns)	502	491	482	311	249	251	262
Average per-centage of children in Infirmary for Ophthalmia (same returns)	2·5	2·17	1·78	4·0	3·1	4·8	3·8

Leytonstone.—This school dates from 1868. The buildings consist partly of an old mansion in large grounds, partly of permanent brick additions, but chiefly of temporary iron and wood erections. Before 1868 the children now maintained here lived chiefly at Hanwell and Mitcham ; their experience as to ophthalmia had therefore not been a good one. The school had not (so I was informed) been certified for any special number, but was believed to be rather over full with 450 children a number which had once been reached ; when I was there it contained 390. Leytonstone.

There were 11 slight cases in the infirmary for ophthalmia, and about as many others of a mild, but not the mildest, degree in the school. No cases gave evidence of having been severe, nor were there any which seemed likely to become so. The boys, girls, and infants were in very nearly the same state as to present ophthalmia. The actual state is therefore moderately good.

A severe outbreak took place between October and December 1869, and there are now five children in the school who lost one eye each at that time. This was only a little more than a year after the school was opened. I could not learn that any special cause was assigned for the outbreak, it certainly had no relation to measles in the school for no cases of this disease had at that time occurred. No doubt many of the children who came from Mitcham and Hanwell had previously had ophthalmia and would be likely to have it again ; and it is possible that in a new school, some of whose officials had probably not had much experience of the disease, insufficient precautions may have been taken at first and its propagation in this way have been allowed. This, however, would not obviously account for the severe type which the disease assumed. Ophthalmia again became very prevalent in the latter half of 1872, but though the number of cases was larger than at the former outbreak, their severity was much less and no serious damage was done. Measles had occurred rather extensively three or four months before this attack began, and was followed by some cases of whooping-cough which coincided with the ophthalmia. The measles had nearly died out when the increase in the number of ophthalmic cases began. Mr. Critchett was asked by the Guardians, early in October 1872, to advise on the matter and recommended, as he had previously done at Anerley, that the slight cases should be dealt with in a separate convalescent ward or wards where their schooling

might go on as usual but the chances of contagion to healthy children prevented. Mr. Critchett found only one case of severe purulent ophthalmia. I do not learn that the advice was adopted. The disease continued till the beginning of 1873, since which time it has steadily declined. Dr. Mouat made an examination of every child in the school on 13th December 1872 when the disease was about at its height. The number of cases under treatment rapidly increased for a few weeks after this visit, probably, in part at least, from the admission to the infirmary of a number of slight cases found by Dr. Mouat in the school, perhaps also in part from the medical charge having at the same time changed hands. The high number of ophthalmic cases quickly diminished from 122 on 4th January 1873 to 30 on 1st February, and since then it has only once been as high as 36.

The defects which seemed to me worst at Leytonstone were the total want of day-rooms, the deficiency of top ventilation in the schoolrooms, the use of double beds for all the infants and many of the smaller boys and girls, and an insufficient towel supply (round towels at the rate of one to eight children). The children, however, had, I thought, a less restrained and more natural tone and seemed more comfortable than at some other schools. Their playgrounds, although too small, are open on two sides and a good sized grass field is used often in fine weather for play. I was particularly struck by finding that the infants, though forming more than a quarter of the whole school, showed altogether a little less ophthalmia than either the boys or girls ; and it may be noticed in connexion with this fact that three nurses are set apart entirely for them, two for the elder ones (about 90), and one for about 20 of the smallest who live in a "nursery." This nursery, though very badly constructed, is on the ground floor and opens directly into the yard, so that the "babies" can easily run in and out. The infirmary nursing struck me as good.

The following table gives the usual facts as to the number of ophthalmic cases on the Medical Relief Book.

Table 8.—LEYTONSTONE.	1869.	1870.	1871.	1872.	1873.	1874.
Average number of Ophthalmic cases in Infirmary at *end of each 4th week* throughout the year (average of 13 returns ; in 1874 average of 10 returns, 3rd January to 14th September) - -	23	22	15	26	30	13
Average number of children in School at same dates (same returns) - - - -	211	342	349	375	415	390
Average per-centage of all the children in Infirmary for Ophthalmia at same dates (same returns) - - - -	11·	6·3	4·4	6·8	7·3	3·4

Battersea. Brentwood. Battersea and Brentwood are at now in about the same state, and they do not differ widely from Leytonstone and Plashet in present condition.

Battersea. Battersea, although suffering very slightly from ophthalmia when I was there, shows an excessively high per-centage of bad granular lids and of previous eye disease, and as large a proportion of corneal damages as Leytonstone ; and, although without any "lost" eyes, it has a high relative number of "severe" damages. I heard of no destructive

ophthalmia having occurred there, but recent changes in the staff prevented my getting much information about its previous history. A large outbreak of ophthalmia occurred at the end of 1872 and beginning of 1873, although the number of children in the school was lower then than it had been as shown by the annexed table.

Table 9.—BATTERSEA.	1869.	1870.	1871.	1872.	Sept. 1872 to July 1873, 11 returns.	1873.	1874.
Average number of Ophthalmic cases in Infirmary at *end of each month* (average of 12 returns; but for 1874 9 returns, January to September) - -	1·6	5	3	8	17	9	1·3
Average number of children in School at same dates (same returns) -	235	244	220	215	215	200	165
Average per-centage of all the children in Infirmary for Ophthalmia at same dates (same returns) - - -	·68	2·1	1·3	3·5	8·	4·8	·78

It thus appears that the per-centage of ophthalmic cases in the infirmary during the first nine months of the present year was lower than during any complete year since 1869, and as the numbers for each month of 1869, 1870 and 1871 did not vary much, the proportions for the period of each year corresponding to the return for 1874 would remain about the same. I am unable to explain the sudden and great increase which began in September 1872 and lasted till July 1873. (See, however, note to p. 19.)

The great fall in the per-centage of ophthalmic cases during the present year is perhaps in part due to the small number of inmates, the numbers since January 1874 never having been higher than 190 or scarcely two thirds of the full number, while at the same time the children have to a great extent been spread through the dormitories only one or two rooms having been kept empty. The dormitories compared very favourably as to ventilation with the school-rooms; the latter were very close. Considerable improvements have also been made during the last year or year and a half in the administrative and structural details of the washing and bathing, and in the supply of clean towels; these apply especially to the boys' and infants' departments. There are still, however, many serious defects of structure in many parts of the school, especially in the laundry, lavatories, play-sheds and school-rooms. This school, although for the present nearly free from active ophthalmia, is in a very unsafe state and would be likely to suffer severely again if the numbers became excessive.

Brentwood.

At Brentwood I was told that there had "always been some ophthalmia" but that no severe outbreak had ever occurred. In November 1866 Mr. Jonathan Hutchinson was consulted with reference to the prevalence of the usual mild form of the disease. He was informed that "a very severe epidemic" had prevailed six years before, that the disease had then declined for four years, but had again begun to increase about the middle of May. Mr. Hutchinson found "about a third" of the 310 children in the school with "inflamed eyes," the disease being of the "chronic catarrhal form;" there were no

severe purulent cases; no eyes had been lost "nor did there appear to be any danger of material damage in any under treatment." The infirmary accommodation was insufficient and Mr. Hutchinson strongly advised that more should be obtained so as to admit of complete isolation.

This, however, belongs chiefly to the past history of the school, for in 1869 it was much enlarged and to a great extent rebuilt, and in most respects it is now in a relatively excellent condition. It has also the advantages of a higher site than many of the other schools. and of being quite in the country. Since the alterations the school has scarcely ever been more than three quarters full, even for a short time, and has often contained only about two thirds of the maximum number that could be accommodated at 30 square feet of dormitory floor space per child.

As to the present ophthalmic state, the most striking fact is the very excellent state of the infants as regards active disease and the less satisfactory condition of the boys and girls. Notwithstanding the small amount of active ophthalmia in the school, the total number of ophthalmic corneal damages is very large (12 per cent.), but more than three quarters of these are "slight." This feature is probably related to the unhealthy source (Shoreditch) from which most of the children come. It will be seen from the tables (Appendix, Table 23, p. 104) that the per-centage of children with discharge in each class (boys, girls, and infants) varies directly with the total *number* in each, and the relative freedom of the infants from ophthalmia is in all probability due considerably to their very small number (scarcely 15 per cent. of the school), aided by their further sub-division into a "nursery" and an elder department, both of which seem well administered. The infants are bathed twice a week, and the water is changed often enough.

The day-rooms are good and the play-grounds fair though much enclosed by high walls; there is also a large grass field which is in daily use by the children for about three hours.

The towel supply seems adequate.

The difficulties of keeping this school in a relatively good ophthalmic state would be very much greater if it were full, for there are still some considerable defects in the structure of the older dormitories and school-rooms, and these, which at present do not signify much, might become important if the numbers again rose to the maximum. The infirmary proper, containing only 22 beds, is very deficient in size and antiquated in structure. Several of the school dormitories, furnishing altogether 120 beds more, have been permanently appropriated as infirmary wards.

The following table gives the ophthalmic returns as usual:

TABLE 10.—BRENTWOOD.	1868 (last 8 months of the year).	1869.	1870.	1871.	1872.	1873.	1874.
Average number of Ophthalmic cases in Infirmary at *end of each 4th week* from beginning of February to September (average of 8 returns) - - -	12	12	No return.	8	11	16	10
Average number of children in School at same dates (same returns) - -	395	420		355	370	400	370
Average per-centage of all the children in Infirmary for Ophthalmia at same dates (same returns) -	3·16	2·8		2·6	2·9	4·1	2·6

There was, therefore, a rise of about 1 per cent. in average number of ophthalmic cases under treatment in the first eight months of 1873 as compared with 1872, and these proportions remained nearly constant during the remaining months of these years. There is no other striking fluctuation except in 1868, but as that return is for the *last* eight months instead of the *first* eight months of the year it is not fairly comparable with the other returns. It will be noticed that since 1871 the per-centage of ophthalmic cases under treatment has varied directly as the total number of children in the school. Very likely the return for 1869 may be less accurate than the later ones, owing to the children being moved about during that year while the building, &c. was in progress.

FOREST GATE.

FOREST GATE.—This school has a high reputation for comparative freedom from eye-disease. At the time of my visit there was a temporary increase in the number of cases which for the time placed the school lower than any of the preceding ones. There were 30 eye cases in the infirmary at the time of my visit but this was higher than at any time for several years, and it diminished a few weeks later. None of the acute cases were severe; there were several chronic and rebellious cases of very long standing. The total proportion of ophthalmic corneal damages is a very little above the average, but the "lost" and "severe" cases formed a very small part of the whole number. This result agrees in general with the small proportion of bad granular lids and the comparative freedom of the children from previous ophthalmic attacks of sufficient severity to come under the medical officer's notice; while the comparative abundance of the slighter damages perhaps depends, as at Brentwood, partly on the unhealthy source from which many of the children are drawn (Whitechapel, Poplar and Hackney). The boys furnished nearly twice as large a per-centage of ophthalmia as either the girls or infants and Dr. Vallance told me that the disease always had been much more abundant among them, especially among the younger ones (from 7 to 10). The comparative freedom of the infants at this school is important, especially as they are admitted down to the age of 2 years and form nearly 25 per cent. of the whole school; I shall afterwards revert to this fact.

The good ophthalmic state which had obtained up to the time of my visit is largely accounted for by the following circumstances:—*First*, the school has possessed for several years a very large probation house in which every child stays for at least one month before reaching the school, and where, moreover, many of the weakly children, who are especially likely to get ophthalmia and other local contagious diseases, are often kept for many months. This probation house acts as a filter which retains all children who are positively diseased or appear likely to become so, the former being thrown off into the infirmary, the latter remaining for an indefinite time where they are, while only those who are relatively healthy and vigorous pass through to the body of the school. The practical result of this is that; 1st, a large number of the youngest infants remain for a year or more in this quarantine building, the structural and administrative details of which are better in almost all respects than those of either the school or the infirmary; 2ndly, a great many of the children who fluctuate *frequently* never pass beyond this building at all. It is a combined quarantine house, nursery, and convalescent house. *Second*, I have been informed that the tradition of good government was bequeathed by the late superintendent and matron (who left about Midsummer 1873); if this be kept up it will go far to procure the uniform and thorough execution of duty by

each officer on which the practical efficiency of such a school so much depends. *Third*, the washing and roller-towel system, though not theoretically the best, has, I believe, for several years been made practically as good as a well managed system of separate towels. The latter plan was about to be introduced when I was at the school.

This comparatively good result has been attained at Forest Gate under several great disadvantages. Thus the school as a whole has for years been almost constantly much over-crowded. At the time of my visit the numbers were about 200 in excess of the maximum calculated number if each child had 30 square feet of dormitory floor space. In one dormitory (in the *school*) occupied by infants, each child had only 19 square feet. The infants' school-room is used also as a day-room, and although a large well ventilated room, it gives only 15 square feet of floor space to each infant on the average (120 infants). The boys' and girls' day-rooms are used also as school class-rooms. The needle-rooms are excessively small and crowded, the principal one giving a floor space of from 6 to 8 square feet to each child on the average; it is in daily use by 50 or 60 girls for 3 hours in the afternoon and at least an hour and a half in the evening. There are no playgrounds except the paved yards. The laundry is too small; and the entire school struck me as being under-officered in comparison with several others. With these sources of weakness great and unremitting vigilance must always be needed to maintain the comparatively good position which, in reference to ophthalmia, the school has so far held.

Many years ago, before the appointment of the present medical officer, when the numbers were much smaller, there was some severe ophthalmia at Forest Gate, but it is now impossible to get at the details. Dr. Vallance told me that since his appointment in 1864 only one eye had been lost and that this happened in a very weakly child. He assured me that the cases of ophthalmia had for many years been very few in number and generally mild though sometimes very obstinate. The following returns correspond with those given for other schools:—

Table 11.—Forest Gate.	1869. (9 monthly returns, April to Decem^{r}).	1870.	1871.	1872.	1873.	1874.
Average number of Ophthalmic cases in Infirmary at *end of each 4th week*, January to 31st October (average of 11 returns) - - - -	11	12	9	10	8	12
Average number of children in School at same dates (same returns) - - - -	880	823	687	760	770	855
Average per-centage of all the children in Infirmary for Ophthalmia at same dates (same returns) - - - -	1·2	1·4	1·3	1·2	1·	1·4

The small increase of half a per cent. in the present year is due entirely to the larger number of cases which have occurred since August, and it is to be noted that this rapid increase followed very closely on an equally sudden rise in the number of children in the school. Thus on 11th July there were 12 cases of ophthalmia on the Medical Relief Book among 772 children, on 8th August 12 cases among 840 children, and on 24th August 30 cases out of 846 children; ophthalmia had declined on 31st October to 16, though the number of children had remained about the same. There have been two other

temporary rises since 1869; in 1869 it rose from 9 in the middle of August, to 23 in September and fell gradually afterwards; again in 1872 the number went up from 11 in the middle of June to 24 in the middle of July, and then quickly declined. These fluctuations occurred while the school numbers were nearly stationary, and I have no suggestion to offer as to their causes; they were not caused by special exposure to dust or wind at the annual holiday in the forest, for in neither year was there any near relation in time between the holiday and the increase of ophthalmia.

ANERLEY. ANERLEY is now in a very good state as to ophthalmia. The children actually at Anerley showed a smaller per-centage of active ophthalmia than those of any other school, so that for administrative purposes the North Surrey school is now the very best of all the schools in regard to this disease. For statistical purposes, however, it is necessary to include 43 North Surrey children who are now at Margate and most of whom were sent there by the advice of the managers, when the Bow Branch ophthalmic school was closed. These 43 children include all the most intractable of the ophthalmic cases which were at Bow, and when they are added to the main bulk of the children the total per-centage of cases with symptoms of active disease is raised, and the position of the school as a whole depressed to a corresponding degree. The per-centage of corneal damages (including those at Margate) is below the average, and the other records of past disease, though sufficiently abundant, are far less than at several other schools.

It is well known that Anerley has earned an unenviable notoriety for ophthalmia. In 1862–63 a severe epidemic occurred. It began in August 1862 and after it had lasted about a year the late Mr. Poland was called in and made a special Report. He found the disease then declining in virulence, but it had within the year caused the loss of 4 eyes and severe damage of 6 or 8 others. Its origin was attributed to the importation of a severe case of purulent ophthalmia from St. Pancras, although mild cases had been well known in the school before.

In 1867 there was a great deal of ophthalmia, and it was chiefly on account of a continuance of the disease that the spacious new infirmary was built in 1868. The disease, however, continued very troublesome, and in October 1870 Mr. Critchett was asked to visit the school, the result being a Report containing suggestions which it is much to be regretted were not carried out at once. Mr. Critchett found a large proportion of mild ophthalmia which in most cases did not render the patients incapable of following the usual educational course, and he advised the establishment of a ward or separate school where all such cases might be kept for an indefinite time until it was quite certain that they would not relapse, where they might be under such special hygienic and medical treatment as seemed necessary, where their instruction and education should go on as if they were in the body of the school, and where by prolonged isolation they might be prevented from acting as sources of contagion to the healthy children in the school.

No action was taken on this advice and the same state of things continued and was intensified by "great administrative neglect, neces-
"sitating considerable changes in the staff of the establishment." (Dr. Bridges.) By the spring of 1873 the disease had been to some extent got under by the perseverance of the medical officer at Anerley, and by such reforms of administration as circumstances made possible at the time; but a good deal still remained to be done when practical

effect was given to Mr. Critchett's advice by the formation of a temporary combined infirmary and school at the new and unoccupied Whitechapel Workhouse in the Mile End Road.

All the children (numbering from first to last 390–400) who showed any, even the slightest, signs of active ophthalmia, and a good many in whom, though not actually present, the history of former attacks or the existence of granular lids made the occurrence of attacks probable, were drafted off from Anerley to this combined infirmary and school, where they were placed under special medical charge and were also supplied with a liberal and efficient staff of teachers, nurses, and other officers.

As resident medical superintendent of the Bow School Infirmary during the twelve months of its existence I had every facility for giving all necessary attention to the treatment of these cases, while through the liberality of the Board of Management, and the co-operation of Dr. Allen Duke the medical officer of the school at Anerley, I enjoyed perfect freedom in the selection of cases to be sent from Anerley, and in the return thither of children whom I considered as cured. It was originally hoped that this separate establishment would be necessary for only six months; I thought it requisite, however, to advise its continuance, and Dr. Bridges agreeing with me recommended, partly from the ophthalmic point of view and partly because certain structural alterations at Anerley which ought to have been finished were as yet far from completed, a second term of three, or if necessary, six months, and the school was therefore carried on in all for a year. With regard to the result while the plan was still in progress, Dr. Bridges wrote in his Report (February 1874), "So far as it has gone, however, the "success has been very marked. A certain proportion of cases, many "of them children who have had repeated attacks of ophthalmia for "years, yield very slowly to treatment. But there can be no question "that the school" (*i.e.* Anerley) "is fairly on its way to a radical "extirpation of the disease."

Now that the work has been finished, I entirely agree with Dr. Bridges in the above estimate, and am quite satisfied that, although the result was not so rapid or so brilliant as was at first hoped for, under the circumstances in which the school was placed with regard to alterations and building at Anerley no plan which included the maintenance of the ophthalmic children at Anerley would have been so successful as the one which was adopted by the managers at the recommendation of the Local Government Board. If my advice were asked under similar circumstances, I should recommend the repetition of a similar though not necessarily identical plan. Any scheme of this kind in future would, for instance, require a term of three or four years for its completion instead of only six or twelve months. Treatment similar in principle to what was carried out at Bow, but for a much longer time, is required in many cases. A very long time *and* a great deal of treatment are essential.

With regard to the effects of treatment at Bow the following figures, although of course furnishing very incomplete evidence, are reliable so far as they go. It must be borne in mind that the total numbers varied both from the discharge of cases considered to be cured, and from the admission of fresh cases or of relapsed cases which had been discharged too soon. I have taken as data for comparison the proportion of children at different dates who were quite free from discharge in their eyes, and the proportion who had the largest quantity of discharge, these being headed the "worst" cases. The first uniform and complete record of these particulars was made on 4th August 1873, the establishment

having then been in working order about eleven weeks; the last was made on 20th April 1874. I quote only a part of them.

TABLE 12.—BOW BRANCH OPHTHALMIC SCHOOL.

Date.	Total Number of Children under care.	Quite free from discharge.		Worst Cases. (Cases with most discharge.)	
		Number.	Per cent. of Total.	Number.	Per cent. of Total.
1873. August 4 -	260	75	28	40	15
1874. January 5 -	230	83	36	36	15
All treatment (excepting in a few bad cases) was now discontinued experimentally for three weeks. A large number of relapses took place, of which the following numbers give an imperfect record :					
January 24 -	218	51	23	61	28
The per-centage of "worst" cases was therefore doubled, and the proportion of mildest cases decreased by one third. Treatment was now resumed and kept up till the end.					
February 19	177	72	40	6	4
March 23 -	171	61	35	14	8
April 20 -	173	72	40	11	6
The slight falling off in March and April as compared with the very rapid improvement between January and February was due to the east winds and rapid changes of weather at about that time. It should be added that the character of the cases marked "worst" was as a whole milder towards the end of the term than at the earlier dates in 1873. Almost all the "worst" cases on 20th April were extremely chronic and rebellious to treatment.					

A good deal has been said and written in various quarters about the amount of success which has attended the Bow scheme. I shall perhaps not be passing beyond the limits of my subject in giving a short additional statement of my view of the matter, with the intention of reconciling certain apparently conflicting facts.

The Bow Branch School was eminently successful in proving that Mr. Critchett's suggestion was a practicable one, and that a large number of children suffering from such a degree of ophthalmia as to need isolation and in most cases local medical treatment, can by such treatment, combined with dietetic and other hygienic improvements, be kept as a rule practically well and able to go through very nearly the same amount and kind of education as healthy children. It also had the positive result of keeping up to a large extent the normal educational course of a number of children, who but for this plan would have been subject to the usual infirmary life of these schools with its many evils.

In a good many cases, however, I did not succeed in *permanently* curing the disease. With regard to the *effects to be expected from local treatment*, I may perhaps be allowed to copy a statement of my own, which has lately appeared, as follows:—"One of the most "important rules to be remembered here is that . . . . . there is no "uniform state of improvement to which all cases of granular "disease of the same severity can be brought by treatment. In this

" respect every case has its own standard beyond which it cannot be " carried, and this can be found with safety and certainty only by ex- " perience in each instance." A great many patients can be kept perfectly well for an indefinite time by treatment. " Below this point " of excellence are all degrees of variation down to the point at which " the most powerful treatment that seems safe has no effect at all " beyond causing transient irritation," while in a very few instances where the symptoms point to the necessity of treatment, the disease is positively increased by treatment. This incomplete result I anticipated several months before the school was given up, and accordingly advised that when the time came for the Bow children to return to Anerley, such means should be taken there as might ensure a continuance of the full amount of good already effected. I suggested a still further time of isolation and of general hygienic measures, coupled with a continuance by some means of more personal local treatment of the cases than could fairly be considered to fall within the duty of the medical officer at Anerley, appointed as, with one exception, all these officers are, from men whose time is largely taken up by private practice. The isolation has been carried out, and to an incomplete extent the educational and medical measures also, the nett result being that the improvement of the ophthalmic cases since they left Bow, although very marked in many of the children both at Anerley and also in the most intractable ones who were sent to Margate, has in a certain number not progressed (I speak of the state of things early in September last) quite so much as I hoped it would if my recommendations had been more fully carried out. I attach great importance to means which admit of the children's education being carried on, and a good deal of very tedious and some- what skilled medical treatment is one of the essential conditions of this. To explain more fully ; a large majority of cases of relapsing ophthalmia with granular lids can be kept well or very nearly well for an indefinite time by suitable treatment ; the same cases if not treated with sufficient vigour, will suffer for months or years from various degrees of ophthalmia, enough in most instances to interfere seriously with education, besides causing considerable risk of damage to sight. By a very long course (with or without intermissions according to circumstances) of this " pounding " treatment, the natural course of the disease towards spontaneous cure is much hastened, its severity as a whole greatly diminished, the accompanying risks to the cornea reduced to a very low degree, and a large amount of the children's time saved. It is of great importance not to omit treatment altogether until at least from four to eight weeks after each case has reached the greatest amount of improve- ment of which it is capable.

In most respects the conditions are far more favourable to general health and to recovery from this special disease at Anerley, with its high site and large grass field, than they were at Bow with its low foggy site and no open ground nearer than Victoria Park.

It has thus come to pass that though the Bow plan is said to have succeeded, there were still (at the date of my inspection) a large number (about 100) isolated, because their eyes were considered more or less unsafe, and 48 others under medical treatment for ophthalmia, so that the school appeared to compare unfavourably in this respect with many others.

The apparent anomaly is explained by the fact that a much higher standard as to ophthalmia has been practically carried out at Anerley than at any other school. Cases are isolated there, which in every other metropolitan school would be left among the healthy children, and cases are kept on the Medical Relief Book at Anerley which at

most other schools would not be returned as infirmary patients at all, but would either receive no treatment, or at the most be only "out-patients." I must explain that these extreme precautions are the fruit, chiefly, of a similarly high standard which I took when I first became acquainted with Anerley school. I took it then because the expressed opinion of some eminent oculists is in favour of the chronic granular disease of the conjunctiva (what I have here called the predisposing condition) being contagious, and I thought it prudent to act on that opinion, as far as circumstances allowed, so as to avoid all possible risk. Further experience has convinced me that this chronic condition, so long as it is unaccompanied by discharge, is not contagious, and I should therefore now draw the line at which isolation is necessary somewhat lower than I formerly did. I believe, however, that the medical officer at Anerley has thought it necessary to maintain almost unaltered the very high (and as I now think, rather unnecessarily high) standard which I set up, and thus the number of cases which were still isolated at the time of my inspection was somewhat in excess of what I thought needful; while at the same time there were a few among them (and I may add a few also among those cases which were at Margate) who were not in my opinion receiving enough local treatment. The error as to isolation, if it be an error, is of course on the right side.

It has, I think, now been made clear that the number of cases which are isolated, added to those which are under treatment at Anerley, do not fairly represent the ophthalmic state of that school *as compared with other schools*, nor even as compared with the same number of poor children living in their own homes. If the standard in use at Anerley, or even the slightly lower one which I should now adopt, were applied to other schools, the result would show that almost all the schools are in a less satisfactory state, while several are in a far worse state, than Anerley is now; indeed a few of the schools were in a worse state as to eye disease when I inspected them than Anerley was before the curative measures of the last two years were undertaken.

I believe that the number of isolated children at Anerley has been gradually reduced since my last visit two months ago, and I have every reason to believe, from information quite recently sent to me by the superintendent, that the school as a whole is even freer from the disease now than it was early in September.

The infants at Anerley were not in quite such a satisfactory state as the boys and girls, but this defect was found chiefly in those had been long in the school, this number including many who were at Bow. Those recently admitted, and those who have never been to Bow, were in a very excellent state, both as to general health and as to the state of their eyes. In both respects the entire infant department has improved very much since I first knew the school. The boys and girls were also in excellent health in all respects.

The most important changes which have been made at Anerley consist of—1st, a great improvement in the ventilation both of the dormitories and of all other rooms used by the children; 2nd, the provision of improved and enlarged school-room, day-room, and play-ground accommodation, especially for the infants and younger boys; 3rd, the appropriation of a large grass field for play-ground purposes; 4th, the universal adoption of the jet system of washing, with a supply of hot and cold water; 5th, an increased number and better kind of small baths, and the addition of a swimming bath.

From what has been already said, it is evident that no fair comparison could be drawn between Anerley and other schools in the matter of

ophthalmia by comparing the relative numbers on the Medical Relief Book; I therefore omit the usual table of ophthalmic cases.

"GOLIATH" SHIP.

The GOLIATH Training Ship is on the whole rather better as to actual condition than Anerley and about equal to Leavesden. Out of 404 boys only one was in the infirmary for ophthalmia while 9 others with "weak" eyes were under treatment on the ship without isolation. In those who showed discharge the amount was as a rule extremely small and was chiefly chronic and mucous in character. There is every reason to believe that the present high state of health and freedom from ophthalmia will be maintained, but of course there will for years to come be a certain proportion of boys with signs of bad former ophthalmia, and no doubt a few relapses will from time to time occur.

Soon after this training ship was instituted a rather extensive outbreak of eye disease took place. It was of a troublesome but not a virulent form. The ship at the time referred to possessed no separate infirmary, the boys were much more crowded in their hammocks at night than they are now, and the lavatory system was less perfect than it has since been made. Most of the cases in this outbreak were sent to the Seamen's Hospital at Greenwich until they were considered cured, when they rejoined the ship.

Since that time a far larger supply of clean towels has been issued and they are disinfected at short intervals; a separate infirmary has been provided (on land); and by spreading the hammocks over three decks instead of confining them to two, a great addition has been made to the sleeping space allotted to each boy. When I visited the ship every boy was getting 401 cubic feet of space at night, and as the height between decks is only 7 feet this gives an area of 57 *square feet each;* even if the ship were full (500), each boy would have 324 cubic feet under the present arrangement.

The special feature which makes the prevention of ophthalmia in this school difficult is the congregation of so large a number into so small a space, and the apparent overcrowding and facilities for contagion depending on such an arrangement.

This weak point is of course less important in a school composed entirely of children above 9 years than in the others where from 15 to 30 per cent. of the whole school consist of children between 2 or 3 and 7 years old. The bad effect of the apparent crowding is also, as I have said above, much diminished by spreading the boys at night so that each one has really more space than the great majority of the children in the land schools; by keeping every part of the ship constantly and freely ventilated so that no single part of it smelt in the least disagreeably; and by keeping the boys very largely in the open air or between decks with abundant currents of air blowing. To this must be added the advantages of a very liberal diet and of a training calculated to increase bodily vigour to the utmost; the apparently excellent effect of the strict yet wholesome discipline maintained on the ship, and which appears to attain the desired end of obedience and order without destroying the independence of each boy's character. In all these respects the highest credit is due to the energy and enthusiasm of the Captain Superintendent.

The fact that boys are not admitted to the GOLIATH unless their health and vigour are such as to give them a good prospect of turning into tolerable sailors must also be taken into consideration in comparing this school with the others which have not this privilege.

It may be added that the air is constantly damp and saline and that high winds are common, yet none of these peculiarities seem detrimental to the eyelids.

LEAVESDEN. LEAVESDEN is the newest of the schools next to Ashford. Like Ashford it was all built at the same date and with the lights of modern knowledge. It is calculated to hold 700 children but has in fact never contained much more than two-thirds of that number.

There were 11 cases of mild and chronic ophthalmia in the infirmary and about as many more with a little discharge in the school. The character of the discharge was in most of them quite chronic and chiefly mucous. In this respect as well as in the presence of some children with remains of severe past ophthalmia the Leavesden children resembled those at Anerley, the GOLIATH, Leytonstone, and Ashford. Many of these cases had been at Plaistow or Hanwell until the Leavesden school was built, and had had ophthalmia at one of those schools.

The structural details of the school are good for the most part, the least satisfactory parts being the needle-room, girls' day room, and the infants' school-room which is decidedly too small and is used also as a day-room. All the infants and the girls under 10 sleep in double beds.

The division of the infants into a "nursery" and an elder class is carried out, and the nursery department seemed well organized. The separate towel system is in force, each child having a clean towel once daily, those for the boys and girls being numbered. The washing and bathing of the infants appear very satisfactory.

There is no marked difference as to present ophthalmia between boys, girls, and infants. The infants form about 20 per cent. of the school.

There has never been much ophthalmia nor any severe cases of it at Leavesden, nor did the medical officer admit any increase of it after the occurrence last winter of 40 cases of measles, though it will be observed that the average per-centage of cases has risen since 1872. There appears to be a tendency to a slightly increased per-centage during the present year as compared with 1873, and this coincides with a higher average number of inmates than has occurred before.

TABLE 13.—LEAVESDEN.	1871.	1872.	1873.	1874.
Average number of Ophthalmic cases in Infirmary at *end of each 4th week*, January to August (average of 9 returns) - - - - -	7	7	9	11
Average number of children in School at same dates (same returns) - -	390	404	395	440
Average per-centage of all the children in the Infirmary for Ophthalmia at same dates (same returns) - - -	1·8	1·7	2·2	2·4

ISLINGTON. ISLINGTON.—This small school will accommodate a maximum of 150 children at 30 square feet of dormitory floor-space each; there were 235 children in the school (or 157 where there should be only 100, giving an *average* dormitory floor-space of 19 square feet to each child) when I inspected it; there were also 9 children at Margate.

I found 6 mild cases of ophthalmia in the infirmary. I was told that there had never been any severe ophthalmia and that the only outbreak of any extent took place about 12 or 14 years ago when something like 20 cases of mild ophthalmia occurred in 3 or 4 months.

The overcrowding (which, if I mistake not, exceeds *on the average* that of any other school at present) is most felt in the infants' dormitories, a few infants being obliged to sleep with the girls in order to lessen it. Some of the boys dormitories were also much too full. The infants formed just 25 per cent. of the school, and they furnished 6 out of 8 children with discharge in the body of the school.

The administration of this school is, I believe, very good, and the children seemed happy and comfortable. The washing, bathing, and towel arrangements are good and are carefully carried out. The dormitories for the infants and smaller boys are warmed by hot-water pipes.

The presence of some very mild ophthalmia among the infants at Islington is doubtless related to their being much crowded; whilst the general freedom of the school from this disease and the slightness of such cases as do occur are attributable in great measure to the careful administration and in part probably to the fact that the children are derived from a relatively healthy source (Islington parish only). The very small proportion of corneal damages and of bad granular lids corroborate the history of the school as to ophthalmia which was given me by the Superintendent.

This school certainly appears to me a striking instance of what may be done by careful administration and good management of the children under several very disadvantageous conditions.

MILE END. MILE END SCHOOL is, considering all things, in a better present state as to ophthalmia than any of the others, the single point in which it sinks several degrees being that of corneal damages, these, although below the average, being more abundant in proportion than at either Islington, Southall, Leavesden, or Anerley. Probably this fact, as at Forest Gate and Brentwood (?), is partly explained by the source (Mile End Old Town) from which its inmates come.

And yet this comparative freedom from present eye-disease exists along with defective structure, low site, a by no means high standard of general health, a large per-centage of excessively strumous children, a far from first-rate administration, and a custom of receiving children on farm from other Unions.

There was some severe and destructive ophthalmia here about the year 1858. The children are said to have brought it from Mitcham, where they had lived during the building of the Mile End School; one or two eyes appear to have been lost since then, but none within the last 6—10 years.

I believe this freedom is to be ascribed to the large relative size of the infirmary (46 beds, or nearly one-sixth of the school accommodation), to the infant department being partly sub-divided into a "nursery" and an elder class, to the generally good construction of the boys' and girls' dormitories, to the fact that the school is often partly empty (its own parish not supplying enough children to fill it), and to the very small proportion of Irish children.

The school with which Mile End has most points of resemblance as to structure, size, source of the children, administration, and general tone, is Battersea. As regards active ophthalmia there was not, at the time of my inspections, any great difference between them. The amount of bad granular lids and of previous ophthalmia is, however, extremely different in the two, and there is a similar though not equal discrepancy between the corneal damages; they also stand at opposite extremes as regards the per-centage of children with healthy eyelids. Together with these facts, we note that while Mile End has only ·5 per cent. of Irish children, Battersea has 14 per cent.

There is a depressing tone about both these schools, both as regards the buildings, the regime, and the *morale* of the children. They are both far less safe from future ophthalmia than such schools as Islington with its crowding but good management, Anerley, Leavesden, or the "Goliath."

It is further to be noted that both Mile End and Battersea schools contain at present much less than their maximum number of children.

C.—*The relation between the Ophthalmic State and Life in the Metropolitan Pauper Schools.*

It would be very useful, if it were possible, to ascertain the ophthalmic state, using the words as they have been employed in this Report, of a large number of poor children living at home in London and various other parts of the country. Such an inquiry is for obvious reasons impracticable, except on a small scale. But in the absence of such a complete term of comparison, the share taken by life within the metropolitan schools in producing the various items of the ophthalmic state (predisposed eyelids, active ophthalmia, bad granular lids, corneal damages) may be to a great extent inferred from a comparison between the ophthalmic state of those who have been in the schools only a short time and those who have had a long experience of it. Some help may also be given by the results of such examinations as I have had the opportunity of making elsewhere, and by other general evidence.

It must be mentioned here that the condition of the lining membrane of the eyelids which predisposes to ophthalmia and is the chief cause of its being so troublesome, is the result of the *prolonged* action of the causes which give rise to it; a life of *several months*, probably of *about a year* in unhealthy conditions, including over-crowding and damp, being necessary for the production of the great majority of cases of the so-called "sago-grain" or "vesicular" granulation which constitutes the special mark of the predisposed eyelid. It is probable that deficient or defective diet aids the direct causes by lowering the general health. Low diet, however, will not cause this condition of the eyelids; nor on the other hand will good diet alone prevent it, for it is quite common in persons whose general health is at least very fair if not quite robust.

The first comparison that I propose to make will be as to the proportion of healthy, predisposed, and badly granular eyelids among the children who have had more than one year and less than one year of school life respectively, excluding from the latter all who are stated to be fluctuating. Another comparison may be made between these two terms and a third consisting of all the children recently admitted to the schools (*i.e.*, who have had one month of school-life or less, excluding, as before, the fluctuating children). 1.

Relation between State of Eyelids and Time in School.

Table 14.	Total Numbers, omitting Units.	Per Cent.		
		Eyelids Healthy.	Eyelids Predisposed.	Eyelids badly granular.
Children in Schools—				
More than 1 year -	(6200)	16	40	44
1 *year or less* -	(2120)	32	44	23
1 *month or less* -	(370)	46	49	5

Effect of prolonged stay in the schools.

This table shows—1st, that of every three children who have healthy eyelids on their first admission to the schools (*i.e.*, of those who have been one month or less therein) one will have become unhealthy before the end of the first year, while one more of the three will become unhealthy some time during his (or her) stay in the schools after the first year; 2nd, that the per-centage of bad granular lids (which on admission amounts to about 5 per cent. at the most, and this probably includes accidentally a few fluctuating children) is multiplied by 4½ within the first year, while in the children who have had more than one year of school-life it is eight or nine times larger than in the new admissions.

We see further that rather less than half the children have healthy eyelids when first admitted, while just one-half of them (49 per cent.) show a slightly unhealthy condition, generally consisting in the presence of well-defined sago-grains.

Life in the schools, therefore, has the effect of transferring to the badly granular state a large number of children whose eyes were on admission either quite healthy or only predisposed to ophthalmia.

The table does not show what proportion of the children with healthy eyelids pass through the predisposed state before reaching the more advanced condition, but this for my present purpose is of no consequence.

Observations on children elsewhere.

With reference to the whole question of ophthalmia among the poorer classes it becomes important, as already remarked, to ascertain the proportion of healthy eyelids among different sections of people in various parts of the country. I know of no recorded observations on the subject, but as a small contribution towards it I may here mention that in 1873 I found nearly 50 per cent. of 100 children in the London Orphan Asylum at Watford with well-marked sago-grain eyelids. There had never been any ophthalmia there, and this school would, therefore, seem to show that in a well-managed institution, where the children are admitted only at long intervals, where none are ever taken in suffering from contagious ophthalmia, and where all the inmates are above seven years old, the existence of the chronic or predisposing granular condition is a matter of very little, if any, importance. Again, among 256 national school children (boys, girls, and infants), examined at a small town and a village in Oxfordshire last summer I found the same predisposing condition, more or less marked, in at least 35 per cent., the remaining 60 or 65 per cent. being healthy. Lastly, among a third group, consisting of 86 children in two workhouse schools, also in Oxfordshire, I found sago-grains in 52 per cent. I simply record these facts; the numbers are scarcely large enough to allow of final conclusions being drawn from them.

2. My next point will be to compare the ophthalmic corneal damages in the children who have been more than one year, less than one year, and less than one month in the schools (excluding as before the fluctuating children).

Relation between Ophthalmic Corneal Damages and Time in School.

Table 15. Ophthalmic Corneal Damages.	Per Cent. of all the Children in the Schools (except Ashford, for which no return of those under 1 year was made).
In children more than 1 year in School (6200) -	10·86
1 *year or less* in School (2120) -	3·57
1 *month or less* in School (370) -	2·16

Effect of school-life on corneal damage.

So that the corneal damages which in my judgment are caused by or associated with ophthalmia are just three times as numerous in the children who have lived more than one year in the schools as in those who have spent less than that time therein. While the per-centage among the new admissions is still smaller and the degree of damage much milder than in the first group; thus, out of the 8 new admissions with ophthalmic corneal damage this was "moderate" in 2, "slight" in 4, and "very slight" in the remaining 2.

It will perhaps be suggested that the increase of these corneal damages in the children who have been a long time (more than 1 year) in the schools is due simply to their being on the average older than those newly admitted, and having therefore, *cæt. par.*, been subject to the causes of these damages for a longer time. I have no doubt that a small proportion of the observed increase is due to this cause. That the proportion thus due to increased age is, however, insignificant as compared with the total, is placed beyond doubt by the two following facts, besides being quite contrary to general experience. 1. The per-centage of ophthalmic corneal damages in the children who have been more than 1 year in the schools is exactly 5 times higher than in the children just admitted. If the liability to these corneal damages increased in the same proportion as the children's age we ought therefore to find the *average age* of all who have been more than 1 year in school 5 times as great as the *average age* of the children on admission. This, it is almost needless to say, is very far indeed from the truth. 2. The only other way of accounting for the increase of these damages by increase of age would be to suppose that the liability to them increased at a much greater rate than the age. But if this were true we should of course find a far smaller proportion of them among the infants than among the children over 7 years old; this, however, is not the case, for, as will be seen further on (section D.), these corneal damages occur very nearly as often among the "infants" as among the "boys" and "girls."

3. A similar comparison between the ophthalmic corneal damages and those which I have grouped together in another division as having no relation with this ophthalmia shows that that the corresponding difference in this class is very slight. The increase that is observed (see table below), in the proportion of 75 to about 55, after the first year's residence is probably accounted for by the fact that syphilitic disease of the cornea, which forms an important item of the non-ophthalmic damages, is much commoner after the age of 8 than before it (Hutchinson), and would therefore be expected to occur in larger proportion among the children who have been longest in the school, for while 46 per cent. of all the *new admissions* are "infants" only 22 per cent. of "infants" occur in the total number of school children.

Relation between Non-ophthalmic Corneal Damages and Time in School.

Table 16.

Non-ophthalmic Corneal Damages.	Per Cent. of all the Children in the Schools (except Ashford).
In children *more than* 1 *year* in School (6200) -	·75
„ 1 *year or less* in School (2120) -	·56

I have thus shown that the ophthalmic corneal damages and the bad granular lids both increase very greatly during the children's stay in school.

4. The next point for inquiry is as to the state of the eyelids in the children with ophthalmic corneal damages, it being of importance to determine whether most of these occur in children with healthy lids or otherwise. I will, as before, make this inquiry both for the ophthalmic and the non-ophthalmic corneal damages.

TABLE 17.

Relation between Ophthalmic Corneal Damages and the State of the Eyelids.

(Sutton cases excluded, as in about half of them this point was not noted.)

Ophthalmic Corneal Damages occur in			2·56 per cent. of all the children with *healthy* eyelids.
"	"	"	3·63 per cent. of all the children with *predisposed* eyelids.
"	"	"	16·35 per cent. of all the children with *badly granular* eyelids.

So that these damages are nearly seven times as numerous in every 100 children with badly granular lids as in every 100 in whom the eyelids are healthy.

The relation between the non-ophthalmic corneal damages and the state of the eyelids is very different, for they are only twice as abundant in every 100 children with badly granular as in every 100 with healthy eyelids, and this increase is due chiefly no doubt, as already explained, to the fact that the liability to heredito-syphilitic disease of the cornea, no less than to the worst forms of granular lid, is greater above than below the age of 8 years; it is due in some degree also to imperfect classification of the cases on my part, no doubt.

CONCLUSIONS. We may conclude from the above figures therefore that,—

1st. The number of bad granular lids varies directly as the length of time during which the children have lived in these schools;

2d. The number of ophthalmic corneal damages varies directly as the same time;

3d. The number of ophthalmic corneal damages varies directly as the number of badly granular lids.

This evidence of course merely proves the *coincidence* of the two diseased conditions; it establishes no relation of cause and effect between them. Many corneal damages are, however, well known to be caused directly by this state of the eyelids, and it is equally admitted that many others are at least much increased, if not actually caused, by the same condition. With respect to the remainder which consist chiefly of small isolated ulcerations, the coincidence above shown to exist is enough for my present purpose, proving as it does that both results are especially apt to occur under the conditions of life at present found in the metropolitan pauper schools.

5. I next propose to examine the actual state, as tested by the presence of discharge, in the children under 1 month and under 1 year in the schools respectively.

This was determined for only 10 of the schools in the case of the children under 1 *year*, but for all of them in the case of those under 1 month.

Relation of Time in School to presence of Discharge from the Eyes.

Table 18.	Children showing Discharge.	Per cent.
All the children in the Schools - - - - - - -		12
„	in 10 of the Schools - - - - - -	12
„	in same 10 Schools who have had *more than one year* of school life - - - - -	11
„	in same 10 Schools who have had *one year or less* of school life (fluctuating children excluded) -	13
„	in same 10 Schools who have had *one month or less* of school life (excluding as above) -	2·9
(Same per-centage for all the Schools) - - - - -		(2·7)

The return of children under 1 month in school was incomplete for Sutton and Southall; if complete the proportion with discharge among the new admissions would probably have come out a little higher.

From this table we seem to learn that, 1st. The largest proportion of the cases of ophthalmia begin within the first 12 months of residence in the schools (a conclusion which will later on be confirmed by facts supplied by Dr. Littlejohn in the case of Hanwell), and that the liability to attacks accompanied by discharge becomes if anything a little less after that period; 2nd. The proportion of children who are suffering from ophthalmia (discharge) when admitted for the first time to the schools is far smaller than the per-centage with this disease among those who have been some time in the schools; 3rd. Nearly 3 per cent. of all the new admissions (those who have been 1 month or less in school) have ophthalmia, a fact which expressed in this way may mean either that they catch the disease within a few days of admission, or that they have it when they come to the schools. I shall afterwards show that the latter is the more probable solution.

Most cases begin between 1 month and 1 year after admission.

If these conclusions are true we should expect to find the highest per-centage of children with discharge among those who have been *more than* 1 *month but not more than* 1 *year* in school; for this number would exclude the new admissions while including all who are most liable to early ophthalmia. And this is in fact the case, for out of 753 children in 9 schools (9 of the same 10 as before) who have had between 1 month and 12 months of school life 121, or 16 per cent., showed discharge, thus strongly confirming the conclusion that the majority of first attacks of ophthalmia occur within a year after entry into these schools, but not within 1 month.

The proportion of new admissions (under 1 month in school) who give a history of previous ophthalmia, also throws some light on the influences of school life in reference to this disease. I purposely exclude the infants, as unable to tell their own story.

In all the schools there were 119 *boys* and 81 *girls* (just 200 in all) who had been in the schools one month or less (as usual fluctuating ones excluded), and of these 38 (or 19 per cent.) gave a history of having had "bad eyes" at some previous time. The corresponding proportion for all the *boys* (3,923) and *girls* (2,736) who have had more than one month of life in the schools is 58·5 per cent.

Conclusions.

These figures tell exactly the same tale in general terms, viz., that the risk of getting ophthalmia is very far greater in the metropolitan pauper schools than outside them. The disproportion is, however, probably not quite so great as it appears to be from a mere study of

these figures ; for the children sometimes judge of whether or not they have had ophthalmia by remembering whether or not they have ever been under treatment for their eyes, and as slight cases are often put under treatment in the schools which at home would be left to themselves, the proportion of cases arising in the schools, as compared with that occurring before admission is somewhat raised. This fallacy, however, if perfectly corrected, would do little to equalize quantities differing so much as 19 and 64.

That a large number of the cases of primary ophthalmia occur within the first year of school life is shown, though from the nature of the case less completely, by some facts supplied by Dr. Littlejohn. He found that of all the children admitted at Hanwell for the first time in 1873 (362 in number) 30 per cent. found their way to the infirmary for bad eyes before the end of that year. Since only a few of these had been in the school as much as twelve months by the end of 1873, this figure of course much understates the real proportion who suffer at Hanwell within twelve months of admission. The return is also incomplete, from including only cases *admitted to the infirmary*, whereas at Hanwell many slight cases are treated as out-patients, and not entered on the Medical Relief Book.

D.—I now pass to consider the *relation between ophthalmia* in these schools *and the age and sex of the children* forming them.

Ophthalmia is not confined to children.

It may be well to say here that ophthalmia is not a disease peculiar to childhood, although, *cæt. par.*, children are probably more likely to suffer from it than adults. Ophthalmia of all the degrees and varieties met with in the schools has proved a great scourge to many European armies ; it is extremely common in Egypt, India, and Malta, and many other warm countries, and is so abundant in Ireland, and in the Irish who live in England, that certain forms of it have even been called "Irish ophthalmia." In all these instances it attacks people of all ages and both sexes, and its severest and mildest forms may occur alike at any age and in either sex.

These general facts, however, do not lessen the importance of ascertaining whether under any given conditions it is likely to affect one body of persons more than another of different age or sex.

The following are the principal facts which I have made out with regard to these schools.

Relation of age to ophthalmia in the schools.

I. As to *age*. I have attempted no more detailed division than that into which the children are divided for administrative and educational purposes, viz., those below seven years old ("infants"), and those above seven (boys and girls). The lowest age of the infants varies from nine months to four years, but in the great majority of the schools it is either two or three years. It may be taken for granted that at most of the schools children are now and then admitted below the youngest specified age. The maximum age is 15–16, but there are not many children older than 14 ; a very few are sometimes for special reasons kept in the schools beyond the age of 16 years.

Relation of age to the presence of discharge.—It has been stated before that 12 per cent. of all the children in the schools showed discharge when I inspected them. This was distributed as follows :

(Over seven years)	boys 8·5 per cent. girls 6·5 „	average = 7·5 per cent.
(Under seven years)	infants - - -	20·9 „

So that while one *infant* in every five had discharge from the eyelids, this symptom was present in only one among every 11½ *boys*, and one among every 15½ *girls*.

This preponderance of discharge among the infants is still greater, if we take the children who have been in the schools only one year or less (excluding fluctuating children); for of this group, discharge was present in 1 *infant* in every 4, in 1 *boy* in every 11, and 1 *girl* in only every 25.

Again, as a general rule the quantity of discharge was much larger, and its quality more dangerous in the infants than either in the boys or girls.

Young children sources of great risk.

I have no hesitation whatever in saying therefore that the children below seven or eight years old in these schools are practically far more dangerous as sources of contagion than either boys or girls.

This opinion with regard to the infants of these schools *en masse* is also borne out in general terms by my own experience of the Anerley children at Bow, and by the cases which come under my notice in hospital practice; it is also strongly supported by the careful and prolonged observations made at the Hanwell school by Dr. Littlejohn. He has told me repeatedly that he believes it would be possible to get rid of the disease from Hanwell if there were no "infants" in the establishment. In illustration of the far greater liability to ophthalmia displayed by the children in the infant school at Hanwell than by those in the boys' and girls' schools, Dr. Littlejohn has furnished me with the following:

TABLE 19, *showing what proportion of all the "infants," "boys," and "girls" respectively, admitted at Hanwell school* for the first time *in* 1873, *were sent to the infirmary for ophthalmia before the end of that year.*

1873. Total primary admissions.	Consisting of	Sent to Infirmary for Ophthalmia during 1873.	
		Number.	Per cent.
362	Boys - } 161 Girls - }	13	8
	Infants - 201	99	49

So that the risk of primary ophthalmia at Hanwell would appear to be six times greater in the infants' school than in either the boys' or girls' schools; and this result is confirmed in general terms by the proportion of children with discharge at my inspection of this school, the per-centage being 3·2 for the boys, 8·6 for the girls, and 21·5 for the infants.

This excess of discharge among the infants is not found in all the schools, nor to an equal degree in those which are so affected; a few schools show a larger per-centage of discharge among the boys or girls than among the infants as shown below.

Schools in which the per-centage of discharge is highest among the *infants*.

Ashford,
Plashet,
Southall,
Battersea.
} Preponderance of discharge among the infants very great.

Norwood, Hanwell, Mitcham, Islington. } Less disproportion in this respect between infants and elder children.

Sutton, Edmonton, Anerley, Mile End. } Per-centage of children with discharge nearly equal in infants, boys, and girls.

Schools in which the per-centage of discharge among the *infants* is equal to or less than that among the boys or girls.

Leavesden, Leytonstone. } Discharge equal in boys, girls, and infants.

Forest Gate. { Proportion of children with discharge less among infants than among boys, and equal to that among girls.

Brentwood. { Per-centage of discharge among infants smaller than among either boys or girls.

I shall discuss the causes of the above differences, so far as they have a practical bearing, in a later part of this Report.

The above are the leading facts as to that part of the "ophthalmic state," which is the chief feature of its early period. I pass now to some of the factors of the ophthalmic state which bear on its later stages or sequelæ.

Relation between Age and the state of the Eyelids.

Table 20. State of Eyelids.	Per cent.		
	Healthy.	Predisposed to Ophthalmia.	Badly Granular.
Infants - - - -	23	32	45
Boys - } Average - - Girls - }	19	40	41

Relation of age to proportion of healthy eyes, in children long in the schools;

Thus the infants show the highest per-centage of bad granular lids; there are, however, many degrees of difference included among the cases classed collectively in this column, and it is here needful to remark that the degree of badness is on the whole much less among the infants placed in this column than among the elder children.

It will also be noticed that there are more healthy eyelids among the infants than among the boys and girls, and this I suppose depends on their having as a rule not lived so long in the schools as either the boys or girls.

The above table, therefore, confirms the supposition that the infants are more liable to become diseased under suitable conditions than the older children, and that when diseased a large proportion of them get moderately bad granular lids. This conclusion must be supplemented, however, by the statement that the granular condition often gets worse as the children grow older, and that a large proportion of the very bad lids among the boys and girls owe the commencement of this state to a residence in the infant school, where the causes both of the predisposing or "sago grain" condition and of contagious ophthalmia existed in abundance side by side.

The infants are also found to maintain a slight preponderance of healthy lids among the children who have been less than one year in the schools and a similar though greater excess of bad granular lids.

Relation between age and the state of the eyelids in the children who have not had more than one year of school-life (*excluding fluctuating children*).

Table 21. State of Eyelids.	Per cent.		
	Healthy.	Predisposed to Ophthalmia.	Badly Granular.
Infants - - - - -	33	39	28
Boys - } Average - - Girls - }	31	49	20

The relative condition of the same groups of children on admission (*i.e.*, of all who have not been more than a month in the schools) shows no difference whatever between them as to healthy eyelids, though the infants still appear to retain the largest proportion of badly granular lids. This excess is, however, so small in *absolute* number, that it may probably be accounted for by the greater difficulty of ascertaining with certainty that all "fluctuating" children have been excluded from among the infants in this return than from among the corresponding boys and girls. and in those just admitted.

Relation between age and the state of the eyelids in the children newly admitted (*i.e.*, who have had not more than one month of school-life,) (*excluding "fluctuating" children*).

Table 22. State of Eyelids.	Per cent.		
	Healthy.	Predisposed to Ophthalmia.	Badly Granular.
Infants - - - -	46	47	7
Boys - } Average - - Girls - }	46	50	4

Relation of Age to Ophthalmic Corneal Damages.

These damages occur in 9 per cent. of all the children in the schools. I find that the proportion among the infants is about equal to the average and therefore very nearly the same as the average for the boys and girls together. There is a slight preponderance of corneal damages among the *girl* infants as compared with the *boys* of the same class, but this difference is far less marked than that between the boys and girls as will be presently seen (Table 28).

The infants contribute a much smaller proportion of the total "lost" and "severe" damages than either boys or girls and the same is true of the other degrees of damage. (See Table 27, p. 54.)

Differences between the Boys and Girls.

Sex.

As to discharge. — The per-centage of boys and girls with this symptom as already mentioned was

Boys	- -	8·5 per cent.
Girls	- -	6·5 „ „

The girls, besides furnishing a smaller proportion of cases with discharge, produce it also, as a rule, in smaller quantity and of a less purulent character than the boys, and are therefore in this respect the best of the three classes. The youngest boys (from about 8 to 11) are generally worse than the older ones and worse than the girls of the same age. There are, of course, as in the case of the infants, differences between the various schools; thus *the girls were better than the boys at the following schools:—*

Edmonton - }
Sutton - - } Per-centage with discharge much smaller among girls than boys.
Southall - - }

Mitcham -

Forest Gate - } Relative state of boys and girls as to dis-
Brentwood - } charge not widely different.

Islington - } Per-centage of children with discharge but
Battersea - } little smaller among girls than among boys.

At Ashford and Plashet the proportion of boys and girls with discharge was equal, the infants being much worse than either.

At Leytonstone and Leavesden the proportion with discharge was practically equal in boys, girls, and infants.

In the schools named below there was larger per-centage of children with discharge among the girls than among the boys; the difference was, however, never very great and in none were the girls so bad in this respect as the infants.

Norwood - }
Hanwell - } Per-centage of children with discharge *larger*
Mile End - } among girls than boys.
Anerley - }

Relative proportion of Boys and Girls who have previously had Ophthalmia.

There is no material difference in this respect, judging by the children's statements, either for those newly admitted for the first time (in whom the previous eye-disease must generally have happened outside the schools) or for the whole schools.

History of previous Ophthalmia in Boys and Girls.

Table 23. Class.	Previous Ophthalmia. Per cent.	
	Of the whole number.	Of children who have had not more than one month of School-life (excluding fluctuating).
Boys - - -	58	15
Girls - - -	59	24·5

It is very likely that the larger per-centage among the girls is only apparent and depends on their being, as a rule, more ready at answering questions than the boys. It may, however, be the case that girls living at home are more liable to catch the disease from their younger brothers and sisters than the boys; the girl often nurses the baby while the boy runs in the street.

The relative state of the Eyelids in the Boys and Girls.

Table 24. State of Eyelids.	Per cent.		
	Healthy.	Predisposed to Ophthalmia.	Badly Granular.
Boys - - -	21	38	41
Girls - - -	18	41	41

Here there is a slight difference, as regards healthy eyelids, in favour of the boys, while the proportion of each with badly granular lids is identical in the two classes. There is no marked difference in the *degree* of disease of those classed as "badly granular" in the two sexes.

The same relations hold good in regard to the boys and girls who have been not more than one year in the schools (*excluding fluctuating children*).

Table 25. State of Eyelids.	Per cent.		
	Healthy.	Predisposed to Ophthalmia.	Badly Granular.
Boys - - -	35	43	22
Girls - - -	28	52	20

But in the newly admitted boys and girls (*i.e.*, those who, excluding fluctuating ones, have had not more than one month of school-life) *the relative proportions are altered*, the proportion of healthy eyes being the same for both sexes while there is a slight excess of bad granular lids among the girls.

Table 26. State of Eyelids.	Per cent.		
	Healthy.	Predisposed to Ophthalmia.	Badly Granular.
Boys - - -	46	51	3
Girls - - -	46	48	6

It will be remembered the proportions are also nearly the same for the newly admitted infants (Table 22).

Relative proportion of Boys and Girls who have Ophthalmic Corneal Damages.

Here there is a considerable difference between the sexes. [It will be remembered that 9 per cent. of all the children show some damage

Corneal damages most abundant and severe in the *Girls*.

of cornea due to ophthalmia ; the per-centage among the infants is nearly the same (9·5 per cent)].

Ophthalmic corneal damages occur

in 7·1 per cent. of all the boys,
„ 11·3 „ „ „ girls.

The above figures apply to these damages *en masse*. The difference between the boys and girls is, however, much more striking in the case of the "lost" eyes than in any of the other degrees. The following Table shows the number of eyes "lost," "severely" damaged, &c. in every 100 boys, girls, and infants respectively, and also the number of boys, girls and infants who contribute to make up every 100 cases of each degree of corneal damage.

Ophthalmic Corneal Damages in Boys, Girls and Infants; number and proportion of

Table 27.	"Lost."			"Severe."			"Moderate."			"Slight."		
	Number.	Per-centage		Number.	Per-centage		Number.	Per-centage		Number.	Per-centage	
		Of all the "Lost."	Of all the children with "Lost."		Of all the "Severe."	Of all the children with "Severe."		Of all the "Moderate."	Of all the children with "Moderate."		Of all the "Slight."	Of all the children with "Slight."
Total -	44	100	·5	66	100	·76	229	100	2·6	358	100	4·
Boys -	9	22	·22	29	44	·71	78	34	2·	129	36	3·2
Girls -	22	53·6	·78	29	44	1·02	93	40·6	3·29	148	41·3	5·25
Infants-	13	24·3	·67	8	12	·41	58	25·3	2·98	81	22·6	4·17

It is thus seen that the girls contribute more than half of all the eyes in the schools lost by this ophthalmia ; while in relation to their numbers they are even more disproportionately liable to this the gravest result of the disease, in the proportion of 78 to 22 boys (or nearly 4 to 1) and 78 to 67 infants. The girls also furnish a higher per-centage of each of the other degrees of damage than either boys or infants.

Slight difference between Male and Female *Infants.*

There is not nearly so much difference in this respect between the male and female infants as there is between the boys and girls. The difference in fact is so small that it may easily have been accidental.

Ophthalmic Corneal Damages in male and female Infants (omitting 22 cases at Sutton in which sex was not noted).

Table 28. Infants.	Total Ophthalmic Corneal Damages.		"Lost" + "Severe" + "Moderate" Ophthalmic Corneal Damages.	
	Number.	Per-centage of the Children.	Number.	Per-centage of the Children.
Male - -	84	8·	39	3·72
Female - -	80	9·1	33	3·75

From these tables it would, therefore, seem probable that the greatly increased liability to injury of sight observed among the "girls" as compared with the "boys" is due to differences in the conditions under which the two classes of children generally live in these schools rather than to any special liability depending on sex. It may, however, be the case that, apart from external conditions of life, the *elder* girls are more liable to ulcerations of the cornea than the *elder* boys; I refer to children above the age of 12 or 13. I have, however, no facts to bring forward which bear on this subject.

Conclusions as to Age and Sex.

Discharge from the eyes is commonest and most profuse among the infants, and next among the boys, especially the younger boys.

The infants have the highest per-centage of healthy eyes and also the highest per-centage of moderately bad granular eyelids, but the average *degree* of badness in this respect is less than that of the boys and girls.

The boys are much less and the infants somewhat less liable to lose their sight by violent ophthalmia than the girls; the boys are also less subject to all the lesser degrees of damaged sight from ophthalmia than either infants or girls. There is, however, scarcely any difference in this respect between the male and female infants.

The girls have fewer healthy eyes than either boys or infants, but they exhibit no preponderance of badly granular eyelids. They have a larger proportion of ophthalmic corneal damages than either of the other classes of children and contribute an especially disproportionate share of the "lost" eyes. They furnish, notwithstanding, a smaller relative number of mild ophthalmic cases than either boys or infants; a fact which probably depends partly on their spending less time out of doors and thus escaping exposure to a good deal of dust and wind, but chiefly on their being, as a rule, more cleanly and less mischievous in habit than the boys and infants, and thus less likely to use their fingers as accidental vehicles of contagion.

E.—The fourth head of my inquiry will be as to any connexion that it may be possible to make out between the ophthalmic state of the schools and conditions either wholly or partly independent of school-life.

A complete investigation of this point would be possible only with great labour and special arrangements and I doubt whether the whole question is of sufficient importance to make such an undertaking worth while. The information contained in my ophthalmia tables, however, throws some light on certain aspects of the matter, and I think it likely that without any great additional expense sufficiently full and precise information might be gathered for a practical settlement of the question —how far the schools themselves are answerable for their ophthalmia.

At present I can only attempt a very incomplete answer to this question. It has been already shown that some children have the disease when first brought to the schools, but that a vastly greater number acquire it after their admission and acquire it generally in a more serious form. It has also been seen that there are very great differences among the schools as to the quantity and severity of their ophthalmic cases. I will next put together what facts I have bearing on the proportion of children admitted with ophthalmia, and as to the relative

healthiness, &c. of the various districts from which the inmates of each school are derived.

State of Eyelids in children from different *Unions* in each school.

Taking the latter point first for convenience, we may inquire whether in schools consisting of children from more than one union or parish there are any marked differences as to ophthalmia between the respective groups of inmates. For the purposes of my argument I shall take the proportion of children with healthy eyelids from each union or parish, noticing the proportion of badly granular lids only when necessary. When a parish or union contributes less than about 30 or 40 children but little reliance can be placed on the numbers with healthy and diseased eyelids, since it is likely that considerable variations would be liable to occur at short intervals ; I shall therefore not generally include such small numbers.

At SUTTON the Woolwich and Bermondsey children have a considerably smaller proportion of healthy eyelids than those from Stepney and Greenwich, the last named being the best of all in this respect. Stepney is, however, worst as regards bad granular lids, perhaps from the presence of a good many children who were formerly at the Limehouse school.

HANWELL shows no difference of any importance between the two unions (City of London and St. Saviour's, Southwark) which send their children there, either as to healthy or badly granular lids.

At FOREST GATE Poplar is better than either Whitechapel or Hackney in both respects ; the two last-named unions are equal.

In the case of ASHFORD, Paddington is better in the proportion of 15 to 10, both as to healthy and badly diseased eyelids, than Fulham, while St. George's, Hanover-square is between the two.

Among the unions contributing children to ANERLEY, Wandsworth and Lewisham, which are the best, exceed Croydon (the worst) in the proportion of 16 to 10 as to healthy eyelids. Croydon is also nearly the worst as regards the proportion of bad granular lids.

MITCHAM, containing children from six workhouses (? or parishes) in the Holborn Union, shows a difference of 100 per cent. (2 to 1) between St. Andrew's (the best) and Clerkenwell (the worst) in the matter of healthy eyelids.

There is no important difference between the Strand and St. Giles Unions from which the EDMONTON children are drawn.

BRENTWOOD receives most of its children from Shoreditch (about 260), and a few (about 35) from Kingston. The Kingston children have a larger proportion both of healthy and of badly granular lids than those from Shoreditch, results which are perhaps connected with the fact that scarcely any of the Kingston children are "infants."

The parishes of St. James and St. Anne, which form the Westminster school at BATTERSEA, present no important differences ; both are very bad.

The remaining seven schools (Islington, Mile End, Southall, Leavesden, Norwood, Plashet, Leytonstone) receive from single Unions, most of them indeed from single parishes.

In the case of the "Goliath" ship, I have, for the above purpose, counted all the boys who came there from metropolitan schools as belonging to their respective schools. A useful comparison may, however, be here made between the boys from the various country workhouses and those from the schools and workhouses of the metropolitan district. This comparison shows that the country boys have a larger proportion of healthy eyelids and a very much smaller proportion badly granular than the London boys.

Country boys best at the "Goliath."

"Goliath" Ship.—Relative state of Eyelids in Country Boys and Metropolitan Boys.

Table 29. State of Eyelids.	Per cent.		
	Healthy.	Pre-disposed.	Badly Granular.
Boys from *Metropolitan* Schools or Workhouses (Total = 343)	23	37	40
Boys from *Country* Workhouses (Total = 60)	29	60	11

There were great differences between some of the country Unions but the numbers are too small to give reliable conclusions.

It is obvious that the above proportions and figures can give but a very imperfect record of whatever differences there may *originally* have been between the children from the various metropolitan Unions; for I have based the calculations on *all* the children in the schools, on a large majority of whom the school influences have been in operation for a considerable time and have probably effaced to a great extent the differences which would have been observable on admission. The attempt to ascertain the desired facts by a comparison between the *newly admitted* children from each Union would give no reliable facts owing to the small numbers.

However it is clear that, taking the schools as they stand, the state of the eyelids varies notably in some of the different Unions. The following list gives *the order of merit in which the Unions stand in relation to the proportion of healthy eyelids in the workhouse school children derived from each.* From an inspection of this list we are at once struck with the fact that the children with the smallest proportion of healthy eyelids are those who came from some of the oldest and most crowded parts of London (several in Groups IV. and III.); and secondly, that the existing composition of the district and compound schools is not such as to ensure the children with the largest proportion of healthy eyes being associated together. In fact if the schools were re-arranged approximately in the order of merit here indicated (a plan which might have advantages in respect to health and vigour quite apart from the present subject, though indirectly connected with it) considerable changes would be necessary in most of the district and compound schools.

Approximate order of merit of the metropolitan Unions in respect to the proportion of healthy eyes among the pauper school children from each of them. In each group the first named is the best, the last is the worst.

Group I.—Proportion of healthy eyelids, 25–31 per cent.

Mile End.
Islington.
Greenwich.
Stepney, Kingston } equal.
Marylebone, St. Pancras } equal.
St. Olave's.

Group II.—Proportion of healthy eyelids, 20–24 per cent.

Poplar.
Woolwich } equal.
Bethnal Green }
Wandsworth and Clapham } equal.
Lewisham }
St. Andrew's, Holborn }
Camberwell } equal.
Lambeth }
Richmond }
Kensington }
Paddington } equal.
Whitechapel }

Group III.—Proportion of healthy eyelids, 15–19 per cent.

Chelsea }
St. George's, Hanover-square } equal.
Hackney }
Croydon }
St. Luke's, Holborn } equal.
Shoreditch }
Fulham }
St. George-in-the-East } equal.
St. Saviour's, Southwark }

Group IV.—Proportion of healthy eyelids, 11–14 per cent.

City of London.
Westminster }
Clerkenwell } equal.
Strand }
St. Giles.

State of eyelids and density of population.

The following facts are of importance relating to the *density of population* in the various Unions or in certain parts of them. In nearly all the Unions which are worst as regards the proportion of their children with healthy eyelids the *average* density of population is very high, (*persons to the acre*, St. Giles 211, Westminster 235, Clerkenwell 172, St. George's East 198, St. Saviour's Southwark 151, St. Luke's 229, Shoreditch 206). In several other Unions, which are also in a bad state in this respect, though the *average* density is low or moderate there are parts which are extremely crowded (Strand 98, one parish has a density of 250, another of 185); City of London 108, population very unequally distributed; Fulham 16, but population appears to be distributed with extreme inequality; Hackney 32, southern part probably much more thickly populated by poor people; Chelsea 82, one parish has 150; St. George's Hanover Square 75, but one parish has 200, another 138, and several considerably more than 100.

Several of the Unions which are best in this matter have an average density which is either very low or moderate (Islington 68, Kingston 7, Poplar 39, Wandsworth and Clapham 11, Lewisham 6). But there are several marked exceptions to this; thus Mile End has 137 persons to each acre; Marylebone 106; Bethnal Green 172; St. Andrew's Holborn 280, one of its parishes having as many as 386 to the acre (perhaps there is a mistake in my copy of the return for St. Andrew's). The per-centage of healthy lids in the children from each of these parishes is either relatively large or at least moderate; in the case of Bethnal Green (Leytonstone) however, the corneal damages are very

high, while even at Mile End they are by no means so low as might be expected from the number of healthy eyelids ; these facts are probably related in part with the crowding in the corresponding districts. It is probable that in the case of Mile End and Leytonstone the large proportion of healthy eyelids may depend partly on the small proportion of Irish children found in them. The case of Marylebone, standing fifth in merit as to healthy eyelids, with a considerable per-centage of Irish (7 per cent.) and children drawn from a population *averaging* 106 to the acre (with of course far greater crowding in some parts, for a quarter of the parish consists of Regent's Park, and much of the remainder is gentlemen's houses and shops), must I think be explained by the generally good management of the school, the careful attention of the medical officer, and the good dietary. St. Pancras again, with an *average* density of 89, (reaching 381 in one parish, 207 in another and 197 in a third,) has a *very small* proportion of *Irish* and stands (like Marylebone) fifth on the present list; here, however, as at Southall, the fact may be accounted for by the school itself being in many respects a good one.

It seems likely that the state of the eyelids in the *infants* might furnish safer evidence of extra-school influences than that of the boys or girls, since the infants have as a rule had much less of school-life than the older children. No conclusions however, could be drawn as to the effect of *home* life on the infants from the relative state of those belonging to the different Unions, since workhouse life, of which many of them have had a large share, is sure to affect the result. We must therefore assume that any strongly marked differences between the infants of different Unions in the same school are due to the mixture of home and workhouse influences.

As a rule I find a general agreement between the proportion of healthy eyelids among the infants of a given Union or parish and the children of the same as a whole, so that most schools in which there is much discrepancy between the total children of any given Unions show a corresponding difference between the infants of the same Unions. Some exceptions to this rule occur however. Thus the Croydon children have, as a whole, a smaller proportion of healthy eyelids than those of any other of the North Surrey Unions, but the Croydon *infants* show a larger per-centage healthy than any of the other Unions of this district. Again, the general average of healthy eyes is lower for the Fulham than the Paddington children, but the relative positions are reversed if we count only the infants of these Unions. At Edmonton there is not much difference between the two Unions (Strand and St. Giles'), if all the children are included, but the infants of St. Giles' show a much higher relative number of healthy eyes than the Strand infants.

The relative proportions of the boys, girls and infants in each school no doubt also influence the ophthalmic state to some extent. The proportion borne by the infants to the whole number varies considerably in the different schools, partly in accordance with the minimum age of admission and partly with other circumstances of which I know nothing.

Irish children more liable to ophthalmia than English.

Another circumstance which I have no doubt influences the probability of ophthalmia being prevalent and troublesome in a school is the proportion of Irish children which it contains. I am not sure that the Irish children in the schools are more liable to the violent forms of ophthalmia than those of English or Scotch race, but shall bring some facts apparently showing that they are more liable to the chronic granular disease and to the milder forms of ophthalmia which are commonly associated with it.

Granular ophthalmia, with its accompaniments and consequences, is I believe, much commoner in Ireland than in England and has been so

for a very long time. It was in Irish or mainly Irish regiments that ophthalmia first became very troublesome at the beginning of the present century after the Egyptian campaign. There was also a vast deal of ophthalmia, much of it very destructive, in Ireland during and just after the famine of 1846, &c. The Irish poor of London suffer more from granular lids than the English and the same is stated on good authority with respect to the Irish in the United States. Not only are the Irish born in Ireland specially subject to it, but persons of Irish or even half Irish parentage born in London are more likely to suffer than if their parents had been English.

Effect of Irish children on ophthalmia in the schools.

In order to gain some idea as to whether or not the Irish children in the metropolitan schools had any appreciable effect on the general ophthalmic state I have taken out from each school all the surnames which appeared to be Irish from each school together with the notes made against each at my inspection, and have ascertained the condition of the eyelids in them and the proportion which they bear to the total number in each school. I do not pretend to have recognized nearly all he Irish surnames, nor has any notice been taken of Christian names; the result for this and other reasons can be taken only as a slight approximation to the truth. So far as it goes, however, this return bears out the statements I have made above as to the special liability to chronic ophthalmia of this kind exhibited by persons of Irish race. The return does not include the children at Margate, a possible source of fallacy which, however, would be more likely to tell for than against the conclusion here arrived at.

Relative State of Eyelids in Children with Irish Surnames and those whose Names are not considered Irish.

Table 30.	Total Number.	Per cent.		
		Healthy.	Pre-disposed.	Badly Granular.
Irish Children - - -	483	18	34	48
Other Children - - -	8196	21	41	38

The children selected as Irish amounted altogether to 5·5 per cent. of all the school children, but the per-centage in each school varied extremely. The smallest proportion (just ·5 per cent.) was at Mile End, which it will be remembered is at present the best of the schools as to active ophthalmia. Islington, Leavesden and Anerley, all schools in a good state, also have a very small proportion of Irish. The two schools which contain the smallest per-centage of healthy and the largest per-centage of badly granular eyelids are also the two which far outstrip all the others in their proportion of Irish children; they are Battersea (Westminster) with 15 per cent. of all its children Irish, and Edmonton (Strand and St. Giles') with 24 per cent. of Irish. There are several exceptions to the rule in the intermediate schools, but of course such are to be expected and are accounted for by other circumstances.

I have little doubt that more copious evidence would bear out the conclusion to which these facts point, viz., that the risk of troublesome ophthalmia in a school will, *cæt. par.*, vary to a great extent with the per-centage of Irish children it contains; while I have no doubt it will be found that greater precautions must be taken against the causes both of the predisposing granular condition and against contagious ophthalmia

in a school with a large per-centage of Irish than in one where these form only a small proportion.

In all probability the differences already recorded between some of the Unions and parishes in the district and compound schools are partly accounted for by differences in the quantity of the Irish element in each; this I have not had time to ascertain and for present purposes it is of secondary importance.

Differences between casual and permanent children.

We have next to see whether the casual or fluctuating children differ much as to the state of their eyelids from the rest. My return of fluctuating children refers only to those who have been in the schools one year or less, and even for these it is I feel sure, imperfect, since no special provision was made to obtain it accurately. I have marked only 144 children (49 boys, 49 girls, 46 infants) under this heading in all the schools, all of them among those who had been one year or less in school at the date of the inspections. Comparing these 144 casual children with the permanent children who have been *one year or less* in the schools we find, as would be expected, that the proportion of healthy eyes is considerably smaller, and that of badly granular eyelids a good deal larger in the casuals than in the permanent children.

Ophthalmia in children on admission to the school.

Akin to this part of the subject is that which relates to the frequency of active ophthalmia (accompanied by discharge), or of bad granular lids giving a great proclivity to relapses, among the children when they are brought to the schools.

On this subject Dr. M'Donald gives me the following information relating to children at Southall School between 1st January and 31st October of the present year (1874).

Southall School.

Total admissions between 1st January and 31st October 1874 - 318

Consisting of new admissions - - 164
Children who have been in this or some other pauper school before - 154

Condition of Eyes.

I. New admissions - - - (164)
Eyelids perfectly healthy - 58 (35 per cent.)
Suffering from active ophthalmia, or from granular lids - - 3 (1·8 per cent.)

N.B.—Two of the three with ophthalmia had been reared in the workhouse and were sent thence to the "nursery" of the school.

II. The casual children - - (154)
Eyelids perfectly healthy - 18 (11·6 per cent.)
Suffering from active ophthalmia, or from granular lids - - 37 (24 per cent.)

N.B.—Eight of those marked "healthy" had been less than two months in the school at their previous admission.

Dr. M'Donald goes on to say that since January 1870, 62 children have been admitted with eye symptoms of some severity, 25 of these being classed by him as cases of "purulent" and 6 of "catarrhal" ophthalmia.* Of the 25 "purulent" cases 22 were in children who

* "Purulent" and "catarrhal" may safely be taken to mean "severe" and "mild" for non-professional purposes. Both are contagious.

had been in the school before, only 3 being new admissions; the 6 "catarrhal" cases were all new admissions. Dr. M'Donald's experience, therefore, shows that at Southall School a certain small proportion of the children who have never been in a pauper school before are admitted with some degree of active ophthalmia, this number amounting probably to not more than one per cent. of the *new* admissions; but that the *casual* children much more commonly return to the school with active disease.

At Edmonton the medical officer has kept records of the number of children admitted with ophthalmia since the beginning of the present year.

EDMONTON SCHOOL.

Total admissions between 1st January and 12th September 1874 -	214
Consisting of new admissions - -	140
Suffering from ophthalmia (discharge from eyelids) - - -	40 (28·5 per cent.)
Casual children - - -	74
Suffering from ophthalmia - -	36 (48·6 per cent.)

From the above it appears that a much larger proportion of the children have ophthalmia when admitted at Edmonton than is the case at Southall and that the per-centage among the new admissions is also very high. It is likely that a part of the difference is due to some variation of standard or of nomenclature on the part of the respective medical officers, and perhaps to a difficulty in ascertaining all the casual children. But any explanation of this kind apart, the fact is one for which I should be quite prepared on account of the large proportion of Irish children admitted at Edmonton.

From Hanwell Dr. Littlejohn has sent me the following information on this subject, with regard to the strict accuracy of which there can be no doubt.

HANWELL SCHOOL.

Total admissions between 1st January and 31st December 1873 -	576
Consisting of new admissions - -	362
Of whom there were sent direct to infirmary for ophthalmia - -	14 (3·8 per cent.)
Casual children - - -	214
Of whom there were sent direct to infirmary for ophthalmia - -	13 (6 per cent.)

From which it appears that at Hanwell, as at the two former schools, ophthalmia is less frequent on admission among the new comers than in the fluctuating children.

From Sutton Dr. Wilton has sent me the following numbers for the period from 1st January to 31st October of this year, but as he could not ascertain the relative numbers of casuals and new admissions their value is less for my present purpose than that of those already given.

SUTTON SCHOOL.

Total admissions (new children and casuals) between 1st January and 31st October 1874 - - -	674
Affected with ophthalmia in various degrees	105 (15 per cent.)

Dr. Wilton thinks there were many other slight cases of ophthalmia, of which no note was made in the admission book.

The State of the Eyelids in the Orphan and Deserted Children, as compared with those who have Parents.

This information was obtained for every school except two. There are, however, a certain number of children whose place in these divisions is doubtful from their having one parent or being deserted by the mother. I believe these are counted as orphans or deserted in most of the schools, but at Brentwood they are reckoned with those who have parents.

The total number for whom this information is recorded is 7,292. Of these 3,384 (46 *per cent.*) are classed as either *orphans or deserted* (no distinction being needed for my purpose), and the remaining 3,908 (54 *per cent.*) as *having parents.*

As regards ophthalmia, judged by the state of the eyelids, *the orphan and deserted* children *are worse* than those who have parents, the difference being least in the infants, and on the whole, greatest among the girls; as shown in the following Table.

Eyelids worse in orphan and deserted than in children with parents.

Relative state of Eyelids in the Children who have Parents, and those who are either Orphans or Deserted, i.e., whose Residence in the Schools either has been or is likely to be of long duration.

Table 31.	State of Eyelids. Per cent.								
	Healthy.			Predisposed.			Badly Granular.		
Children with Parents. 3908	22			40·5			37·5		
	Boys.	Girls.	Infants.	Boys.	Girls.	Infants.	Boys.	Girls.	Infants.
	23	19	24	39	47	35	38	34	41
Orphan or Deserted Children. 3384	19			38			43		
	Boys.	Girls.	Infants.	Boys.	Girls.	Infants.	Boys.	Girls.	Infants.
	18	18	21	38	39·5	36	44	42·5	43

F.—I now come to that part of the inquiry for which the facts already stated form the chief ground-work; viz., whether it is practicable, without unbearable expense, to get rid or very nearly rid of ophthalmia from among the metropolitan pauper children without introducing any changes which would require the abandonment of the present buildings.

Relative importance of ophthalmia in the schools.

I fully recognize that the whole ophthalmic question is only one of many questions by a just estimate of which we may hope to arrive at the best practical solution of this part of the pauper difficulty, and I have no wish to give this or any other matter of bodily health an undue importance. At the most moderate estimate, however, no one who knows the chief facts can, I think, avoid the conclusion that ophthalmia holds, both directly and indirectly, a position of very considerable importance in these schools. In one way and another the disease does an amount of harm that of course would not be tolerated for a moment in the case of any larger schools for the upper, middle, or lower-middle classes, unless it could be shown conclusively that the evil was due to unalterable extra-school influences. No one, so far as I know, has ever

tried to show that the pauper schools are free from the responsibility of a very large share of this disease as it is found in their inmates; it has indeed been very commonly asserted, and often tacitly taken for granted, that the schools are answerable for the whole of it. This is an injustice; but the most effectual way of checking random assertions of the kind referred to will be by taking measures to reduce the amount of the disease *in* the schools to a lower degree than *outside* them.

Direct harm done by it.

It is impossible to form a precise estimate of the extent to which this disease as it occurs in the metropolitan schools injures the prospects of those who suffer from it; nothing more than a wide judgment can be given. The following facts are, however, certain. Ophthalmia *constantly invalides* (and probably has always invalided) a not inconsiderable proportion of the children and it interferes to a serious extent with the immediate education of those affected. It injures some seriously and permanently, for the prospect of making a good living is more or less impaired for those children (numbering about 280 or 3·2 per cent. of the schools) in whom either one eye has been lost, or one or both eyes either "severely" or "moderately" damaged in the schools, to say nothing of the remaining 500 with various degrees of slight corneal opacity, &c. Although a large majority of attacks of ophthalmia pass off without causing either at the time or afterwards any permanent injury to sight, and although many of them last only a few days, yet many others last so long and recur so frequently as to be a fruitful source of idleness and bad habits. No less than 55 per cent. of all the children in the schools have had at least one attack of eye disease requiring treatment, the vast majority having taken place within the schools; relapses are the rule and not the exception in this malady, so that if it were practicable (which it is not) to ascertain the total number of attacks which have occurred, this would doubtless considerably exceed the total number of children in the schools. Children with ophthalmia are, in almost all cases, a source of more or less risk to others who are not suffering from it. A certain number (a number at present I believe quite unascertained and liable to be both very much under-rated and very much over-rated) continue to suffer from relapses of the disease for several years after leaving the schools, a fact with which all surgeons to ophthalmic hospitals are quite familiar. It is equally certain that every form and degree of disease here included under the word "ophthalmia" is very common among the poor of London and other large towns, and of country districts also. This depends in the first place on the prevalence among the poor of habits which are favourable both to contagion and to the previous development of a predisposed condition of the eyelids; and secondly, on the fact that certain complications and results of ophthalmia (I allude chiefly to corneal ulcerations) are much more likely to occur in persons who are either strumous or habitually underfed than in those whose health and state of nourishment are good. It is further certain, however, that the proportion of children who suffer from invaliding ophthalmia is far larger in these schools than it would be among the same children if living at their own homes, and certain almost beyond a doubt that the amount of permanent injury to sight caused by the disease in the schools is also similarly much in excess of what it would be outside them.

So much for the *direct* importance of the disease.

Collateral evils.

The presence of ophthalmia, and especially of the predisposing or early granular state of the eyelids, is also closely connected with the general conditions as to health under which the body of persons live among whom it occurs, and this again hangs to a large extent on the structural and administrative arrangements of the school or home.

Although, as already stated in more detail, the predisposing condition is common enough in its slighter degrees among persons raised socially several degrees above the poorest, whether living in their own homes or in a school, I believe that it does as a rule, both in them and in persons living under much worse conditions, form (as was long ago pointed out by Dr. J. A. Marston) a very delicate test of the hygienic state of the body of persons so affected; not a test of the state of health of each person, but rather of the external conditions, especially as regards purity of air, in which they habitually live. Thus I believe that whenever we get rid of ophthalmia from a given institution we must incidentally bring about a number of other changes, some of which are of much greater importance than the majority of cases of this disease. I do not doubt that the conditions which will free a school permanently from ophthalmia will necessarily include such details of structure, regime and administration as will, in the long run, very much raise the physical, moral and intellectual status of the children.

The question of abolishing ophthalmia has two main aspects, the first bearing on the introduction of the disease from without, the second relating to its extension and sponstaneous origin within the schools. A consideration of the first will to a great extent clear the ground for an examination of the second.

Ophthalmia identical as regards contagiousness and degree of severity with the disease as found in the schools, is common enough among poor people living at their own homes, especially among their children; and I have shown, by the quotation of facts from several schools, that children are often admitted whilst suffering from it. A large number, probably the larger proportion, of the children who are brought to the schools in this state have been in them before and got the eye disease while there, but this for present purposes is unimportant.

Necessity of excluding children admitted with ophthalmia.

The conditions under which the children live in the schools are often favourable to relapses of ophthalmia in those who had the disease on admission, and to its spread by contagion to others. If those who are brought to the schools while suffering from ophthalmia, or with bad granular lids making them extremely susceptible to the action of slight exciting causes of the disease, could be permanently provided for in a separate establishment one serious difficulty would be removed. Many of the children who have the disease on admission are also below par in general health and if separately provided for would be placed in better conditions than when mixed with a number of more vigorous children.

The good effect of rigorously excluding all children with ophthalmia and other contagious diseases is seen at Anerley, at the "Goliath" and to a less extent at Forest Gate. The standard taken has been highest at Anerley where all admissions were stopped for nearly a year, and where since their re-commencement about May 1874 the medical officer has refused to admit any children about whom he had the slightest misgiving. This course of action has very materially aided in the maintenance of a good state of health at Anerley. It, however, causes a strain on some of the workhouse infirmaries, even where these are large and well provided as is the case in several of the Unions of the North Surrey District; and it requires also no little courage on the part of the medical officer at the school. It is evident that in Unions where the workhouse infirmary accommodation is only just sufficient for ordinary wants this plan could not be carried out for long, because owing to the very chronic course of many eye cases (and of some contagious skin diseases also) the children would in many places be admitted much faster than they could be cured, and the workhouse infirmary would

thus sooner or later get over-filled. This actually happened at one of the Holborn workhouses when last spring it was determined to exclude *all* admissions for a time; the workhouse infirmary became so full of diseased children that no alternative was open but to send them to Mitcham again, this being under the circumstances the less evil of the two; the result was an immediate increase of ophthalmia at the school. If this plan were carried out without separate accommodation for the rejected children many of the workhouse infirmaries would thus soon become filled by a collection of all the ophthalmic children, many of whom would be suffering from other diseases as well; and the measure might in this way easily become much worse than the evil for which it was at first intended as a remedy. For this reason it is practically impossible for long together to carry out the above policy in an uncompromising way at schools where the admissions are numerous and the workhouse infirmary accommodation scanty, *i.e.*, just at those schools where it is most likely that children will be sent from the workhouse in a diseased state.

Separate probation wards.

The difficulty might be met by the provision of very large probation wards at every school similar to the one at Forest Gate, these being used, as at that school, for the double purpose of quarantine and of a sort of convalescent house for sickly children, only those requiring much active treatment being sent to the infirmary. The children in such a building ought, however, to be provided with some means of education. Theoretically such an additional building would, as I have said, meet the difficulty in each school. As a matter of fact however, the plan would amount to the establishment of a third department in the school and I doubt whether in practice this would be found to work well under the present management. From the medical point of view too, although it would be a great improvement on the present plan of either a short quarantine or no quarantine at all, I do not think this scheme would be the best possible. The medical officer is often tempted to discharge ophthalmic and other local contagious cases from the infirmary before they are really fit to rejoin the school, and it is well known that this has aided to a serious extent in preventing the extinction of these maladies. The same temptation would, though in a somewhat less degree, exist in the case of large isolation buildings unless these were provided with a full and complete staff of teachers and other officers, a provision which it is most unlikely would be made. It is useless also to ignore the fact that the views of the various medical officers of the schools would continue to differ in some degree, as they have hitherto differed, and that the standard of health adopted would thus vary enough among the different schools to make the plan unsafe.

Quarantine establishment common to all the schools.

Another plan which I have heard suggested would, in my opinion, be a far better one if it were practicable. This would consist in the formation of one or two large establishments which should serve as probation wards to all the schools, and where children admitted in a diseased state should be retained for as long as necessary. Such establishments would therefore be also partly infirmaries where sickly children and children admitted in a state of actual disease should be kept for an indefinite time. They should be provided with a full staff of officers both for nursing, school and discipline, and there would then be no temptation to pass on to the schools any children who were not really fit. It is at once evident that such establishments must be large, and that they must contain ample provisions for classifying the children *while undergoing quarantine* into healthy, weak or sickly, and actively diseased; and for again subdividing these into eye cases and skin cases, &c., besides the usual separation into boys, girls, and infants. Whether

one, two, or more such quarantine schools would be needed would of course be a matter for settlement in detail, and it is quite likely that after a few years it might be found possible to diminish them to some extent.

I suppose some of the chief difficulties of this plan would lie in the conveyance of the children from the workhouses to the quarantine schools and in the selection of those who, having passed through the minimum of quarantine, were fit to join their respective schools. The centralisation of children from all the workhouses at one or two quarantine schools and the redistribution of many of them to the various schools, would obviously be more costly than the present arrangements. It would not, I should think, be at all impracticable. The difficulty as to the selection of children fit for the healthy schools would depend, as it now depends, on differences of opinion among medical men; but this unavoidable evil would be reduced as low as possible by the proposed plan since all differences of opinion would then lie between the medical officers of the healthy schools and the one or two at the quarantine schools, instead of as now, between each school and every workhouse which contributes to it. There would be no difficulty between the quarantine schools and the workhouses because children would never be kept at the workhouses on account of disease (excepting in cases of serious illness) but would be passed on at once to the quarantine schools. Power should be given to the medical officer at each school to return any child to the quarantine school if signs of contagious disease appeared within a given time, say three days.

Whether any such plan as this would be feasible under the existing system of separate boards of management it is not for me to discuss, further than to recognise the far greater facilities which would attend its adoption under a more uniform system of school government.

Duration of quarantine;

I may here make some remarks on the duration of quarantine. The custom of requiring quarantine for new admissions varies much in the different schools, and the arrangement in this respect has an important influence on the state of the children in the body of the school in respect to local contagious diseases generally. If the share taken by the enforcement or neglect of probation cannot be accurately identified by the amount of ophthalmia, &c. in the various schools this is because the ophthalmic state (and also the "cutaneous state," if I may use such an expression) depend upon many other circumstances besides this one. The good effect of long and careful probation is seen at Forest Gate and in a less unalloyed degree at Anerley; the bad effect of short, imperfect, or no probation is less easily identified, but it may be observed that at some of the worst schools (Mitcham, Ashford, Norwood, Edmonton, Battersea, Sutton) there is either no probation or only a short period, or a longer period (2 weeks) has only quite lately been enforced.

in ordinary cases;

I think it is of great importance that every child should be kept in quarantine for at least a fortnight after leaving the workhouse before being allowed to join the body of the school.

some want a longer time.

There are many children who require a longer term of quarantine than this, and it is, as already indicated, especially in regard to these that the advantages of one or more large quarantine schools would be felt. If such a scheme could be carried out I see no reason why there should not be different scales of quarantine from two weeks upwards to say two months; children who were not fit for the schools in two or three months being considered as requiring an indefinite term. There are obvious reasons which would make the formal adoption of this principle very difficult in the schools taken singly.

Medical aspects of separating of casual from permanent children.

Another end which is of considerable importance from the contagious diseases aspect might be gained by such quarantine schools. I allude to the casual children. As regards the prevention of ophthalmia and kindred maladies I have no doubt that the separation of these from the permanent inmates of the schools is of importance. It would no doubt be found that a rather large proportion of those who fluctuate oftenest would require more than two weeks quarantine, for many of them are old sufferers from ophthalmia, ring-worm, &c. It would thus happen that many such children would never find their way to the healthy schools at all, a result which would certainly be the best from the medical point of view although I know that on the educational aspects of the question there are differences of opinion. It would be possible, if it were thought advisable, to engraft on this stock a regulation ensuring that no casual children, even if healthy, should be passed on to the schools. It will be remembered that I am proposing full means of instruction and other educational measures for the quarantine schools. At any rate, the selection made for medical purposes would no doubt diminish very largely the number of these casual children in the healthy schools, about whose bad effect on the permanent children many of the school authorities think strongly. Such an exclusion of the casual children, whether partial or complete, from participating in the advantages of the school could not be made at the schools singly unless, as at Forest Gate, they were provided with immense probation wards.

I cannot do more than roughly guess at the accommodation that would be required in the quarantine schools. If they contained only children from the workhouses they would of course not need to be nearly so large as if they also contained a number of chronic cases of contagious disease (ophthalmia, &c.) from the various schools; this plan, which I have not yet mentioned, will be discussed later. Confining ourselves for the present to the children from the workhouses we may form some idea from the following facts. It appears from Dr. Bridges' Report that the number of admissions to all the schools during 1873 was (roughly) 7,300. Supposing allowance were made for 7,500 and that admissions took place once a week, the *average weekly admissions would amount to 144.* If all these were permanent children and if all were fit to go to the healthy schools after two weeks' quarantine the minimum accommodation required would be for 288, say 300. I find that about 55 per cent. of all the school children have parents, so that a considerable proportion of these would be fluctuating. My returns of fluctuating children are not complete enough to base calculations upon, nor can I at present estimate what proportion of all the admissions would have to be kept several weeks, months, or years in the quarantine schools. Supposing, by way of an extreme illustration, that as many as 25 per cent. of all the admissions required three months of quarantine, either because they were uncured of disease or on account of being well known casuals, this would require additional accommodation for 468 more, or a total accommodation would be needed for nearly 800.

I confess I have not much faith that any plan short of some such an one as here suggested will succeed in cutting off permanently the cases of contagious disease (it is useless to name only ophthalmia) sent to the schools from outside. The best intentions on the part of the workhouse medical officer will be frustrated whenever his infirmary becomes over-full, and the utmost precautions at the schools will not always succeed under these circumstances in keeping out diseased children. I do not at all mean to say that no good would be done by providing at least 2 weeks quarantine at all the workhouses and all the schools, a plan which is

carried out now in some few instances. This, if it were really effected would certainly go a long way to remedy the evil which I am considering ; it would be a great improvement on what is at present done in many of the schools, either a short probation at the school or workhouse only, or no probation at all. The necessary buildings would have to be erected or existing ones enlarged in nearly all the schools, and it is not without reason that I doubt whether in fact this system of multiple probation wards will, even if carried out fully, be found to prevent the entrance of children with ophthalmia and analogous diseases into the schools. On the other hand, I think there would be very little difficulty in gaining this end by some such plan as here sketched.

Management of ophthalmic cases actually in the schools.

We have now got as far as the exclusion from the schools of children who bring ophthalmia with them from the streets or the workhouses. We have next to face the second, larger and in many respects more difficult part of the task, that relating to the management of cases in the schools ; the best means of preventing the disease from spreading to others and of curing it in those now affected. This part of the subject is more important than the former because by far the larger share of the ophthalmia in the schools, both as to number of cases and as to obstinacy and serious results, is certainly due to school-life. It is more difficult on account of the large number of cases that require to be dealt with, and because some of the preventive means, especially these intended to prevent the development of the predisposing condition of the eyelids, are very difficult to carry out in institutions where great economy in expenditure is essential.

Very prolonged isolation.

There can be no doubt that the best of all ways for getting rid of the present dead weight of actual ophthalmia and of cases with bad granular lids would be to separate them from all the other children and to keep them separate for an indefinite time until it was quite certain that all tendency to relapse had ceased ; (for opinion as to the safety of collecting together large numbers of ophthalmic cases, *see* note to p. 9.) This isolation would have to be kept up several years. I do not believe that unless this measure be carried out in one way or another, combined with some plan for increased quarantine as suggested above and increased medical treatment by the medical officer personally, the present ophthalmic state of the schools will be very materially and permanently altered for the better. Neither is it likely that such means as here suggested would be carried out separately by the managers of all the different schools. By far the most satisfactory way would seem to be the separation temporarily of all the children into those with ophthalmia (to which it might probably be well to add other local contagious disorders) and those who were free from these maladies. For the first two years or so the number of these cases would be very large and the plan would in fact amount to a division of the whole number into two classes of schools, isolation schools and healthy schools. The proportion of healthy children would gradually increase, but the necessity for a quarantine and isolation school would never quite cease on account of cases imported from without, especially among Irish children, and from occasional cases arising in the schools especially after an outbreak of measles.* I have estimated the proportion of all the school children with various degrees of active ophthalmic disease as amounting to 15

Increased medical treatment.

* I believe that too little attention has been paid to the importance of measles as a cause of outbreaks of ophthalmia in these schools, although the frequent occurrence of similar, but isolated, cases of ophthalmia after measles outside the schools is familiar to all medical men. It will never be possible to ensure permanent immunity from measles in the schools since it may be brought by visitors and in other ways.

per cent. of the whole, or about 1,300 cases. It will also be remembered that about another 30 per cent. are said to have bad granular lids and that many of these are extremely liable to relapses of ophthalmia. Supposing it were found necessary to isolate only half of this 30 per cent. in addition to the previous 15 per cent., we should then have about 30 per cent. (2,700) of all the school children requiring isolation, or treatment, or both. No doubt a good many of these, being casual children, would soon be discharged, and on returning to the schools would be retained in such a quarantine school as has been suggested. The total accommodation indicated for the quarantine and isolation schools together would amount to something like 3,500, or between one third and one half of the total numbers. Gigantic as the plan seems, I cannot doubt that it would really be far better if it could be tolerably well organized and carried out than any partial measures that are likely to be effected by the schools singly. It will be borne in mind that the great majority of these diseased children are not at all or only slightly incapacitated for the ordinary employments of the schools, and that the separation would be made quite as much for the purpose of giving to those who were healthy the best chance of remaining so, as for the extra good that would accrue to those actually diseased.

Such a large scheme of classification of course could not be carried out in a day; it would have to be gradually done, the worst cases being taken first and the slighter ones removed afterwards. If it were begun during summer, tents and temporary buildings could readily be used to supply the temporary increase of premises which would certainly be necessary while the process was in action. It would probably be a convenient arrangement for those cases which occurred in casual children to be kept in the quarantine schools, and for the "permanent" cases to form a separate isolation school or schools. At any rate this plan might be found good for a year or two until the numbers were reduced.

I think it would be best to have a resident medical officer in each school (whether this was for isolation only or for quarantine as well), and as the medical work for the first year or two would be heavier than afterwards it would probably be the best policy to provide him with an assistant. The number of nurses required, as well as their quality, would depend to some extent on the amount of treatment actually carried out by the medical officers. My own opinion and experience are in favour of the medical man personally treating a large proportion of the ophthalmic cases, or he may do it himself two or three times a week, and allow a nurse to do it on the other days. This opinion is confirmed by the practice which is believed to be most efficient at Hanwell, where the resident doctor applies the remedies himself to far the largest number of the cases.

It would be well to choose healthy sites for permanent isolation schools, while for evident reasons it would be convenient to have the quarantine school or schools as nearly central as possible. If these two requirements could not be united in any of the existing buildings it would be needful to have one of these premises selected from the healthiest of the existing sites so that it might serve the purpose of a convalescent place as well as an isolation school. I should think that Sutton, Leavesden, Anerley and Brentwood have the healthiest sites.

Sea-side school.

It would, I think, also be most desirable to have a sea-side infirmary or convalescent school under thoroughly good management (if possible with a resident medical superintendent or officer) to which cases requiring sea air could be sent. These would be chiefly children with

certain strumous ailments including some ophthalmic cases. I do not think that for the great bulk of the ophthalmic cases the sea-side would have any advantage over a healthy site inland.

As to the distribution of the healthy children I will only say that in the event of the infants being placed by themselves (or with a certain proportion of elder girls) it would be, as regards the present health and future growth and vigour of the children, wise to give the best attainable site, premises and management to the *permanent infants*, since it is these who remain longest under the care of the State and will best repay careful management.

Points requiring alteration in the school

We may now examine rather more in detail the chief conditions which in my judgment are at the root of the present state of things as to ophthalmia, conditions which must be modified or abolished if there is to be much improvement in future.

At starting I may say that I do not think there is any *single* circumstance connected with the pauper schools which can be held responsible for the existence of ophthalmia in them.

The ophthalmic state of the schools is the result of several conditions, and these differ in their relative proportions and importance in the various schools. It is only by recognizing this fact that we can account for the disease being at a given time equally prevalent or equally slight in certain widely different schools. It is also only when we realize this that the futility of any one single measure for getting rid of the disease becomes apparent.

It will be found that many of the schools show one or more specially good features, these being marred more or less completely by some bad points; that in other schools several very bad conditions co-exist; while in only one or two (Anerley and the "Goliath") is there as yet a realisation of anything like all such conditions of health as might be attained without unreasonable expenditure.

It appears to me that defects in the following leading particulars account largely for the permanent prevalence of ophthalmia within the schools, and which would ensure its continuance to a greater or less extent even if no cases were imported from without.

I. General overcrowding.
II. Bad ventilation.
III. Deficient and defective provisions for exercise in the open air.
IV. The infants' schools and junior boys' schools.
V. Want of cleanliness.
VI. Food.
VII. Size of the schools.

Of these, the first and second act chiefly as causes of the incipient granular or predisposed state of the eyelids; the fourth and fifth influence the result mostly by favouring contagion; the third acts to some extent in both ways.

Crowding.

I. As to degree of general crowding in these schools I cannot do better than refer to a statement in Dr. Bridge's Report on Ophthalmia (pp. 11 and 12), which is to the effect that, while the density of the population in the Metropolitan pauper schools is nominally about 14,000 to the square mile, or about half the average density of the London population, it is virtually much greater than this, probably four or five times as great, or in other words at least twice as great as the average density for all London. This is owing to the children

being allowed, as a rule, to use only a small part of the total area occupied by their premises and farms. It appears, however, that taking this worst view of the school crowding, and allowing that the children virtually live at the rate of about 56,000 to the square mile, they are planted far less thickly than in certain parts of London, *e.g.*, St. Giles with 134,000, or St. Anne's Westminster with 150,000, while one district of the latter is populated at the rate of 254,000 to the square mile.

It must be remembered however, in making such comparisons, that the inhabitants of the schools are all children and that they live in a small number of very large rooms where facilities for contagion are much more plentiful than in a great number of little rooms similarly crowded ; and further that the school children cannot run out into the streets and courts as the children at home can so often do.

The decree of crowding of course varies much at different schools, and not only so but in different part of the same school. It is thus possible to have a school half empty and yet to find (as at Ashford) considerable overcrowding in certain parts of it. In some schools, on the other hand, it is customary, when the establishment is not full, to spread the children through all or nearly all the dormitories.

The children are often very much crowded also in the day time, this varying in the different departments of the same school, and depending mainly on the amount of school-room and day-room accommodation and on the size of the needle-room. This occurs more or less markedly and in different parts of the schools at Hanwell, Forest Gate (needle-rooms), Norwood, Edmonton, Mitcham, Southall, Battersea, Leytonstone, Ashford (infants' day-room), Leavesden (infants' day-room), Mile End (day-rooms and school-rooms), Plashet (day-rooms).

I accept Dr. Bridges' judgment on the question of cubic space and floor area in the dormitories, with the qualification that for the *infants* and younger boys and girls there should be an absolutely larger space allowed than for the elder children, unless the means for artificially warming the air of their dormitories be much increased.

Ventilation.

II. Bad ventilation is not always a necessary accompaniment of dense population, for at the "Goliath" ship, where I suppose the children live in a smaller *total* proportionate space than in any other school, the ventilation is as nearly as possible perfect. On the other hand, bad ventilation is quite compatible with a half empty school or room.

Of course the nett result as to sweetness of air depends on the structure of the buildings in the first place, *plus* constant attention on the part of the officials, together with some knowledge of how much direct ventilation is safe for children, especially young children. The entire premises were badly ventilated at Edmonton and Plashet, and parts of them at almost all the schools except the "Goliath." The air during the day is commonly most offensive of course in the school-rooms, day-rooms and play-sheds, but sometimes the needle-rooms are bad. The dormitories, even at midday, are not always sweet and this result is generally due to neglect of the very common sense rule to open the windows at the top as well as the bottom, an omission which is very common also outside the schools.

I have no doubt that the practical neglect of ventilation in the schools depends a good deal on the upper officers being often much over-worked and quite taken up by their routine duties. It also depends to some extent on actual want of knowledge and of the perceptive faculty for detecting closeness of air. A further very important cause of defective ventilation is deficiency of artificial warmth in the

rooms, this being made up by preventing the escape of the heated and impure air from the body. At the Islington school the dormitories for the infants and young boys are warmed by hot water pipes, and the same is the case in the infants' day-room at Plashet. It is impossible, without great risk of worse evils in the shape of coughs and colds, in cold weather to maintain such ventilation as will ensure tolerable purity of air, unless sufficient means of artificially warming the air be supplied; to this must also be added abundant bed-clothing. This is especially true of the infants and young boys and girls under 10. I regard the increase of warmth in day-rooms, school-rooms and dormitories as one of the most urgent requirements in the schools, and especially so in the infants' dormitories. This opinion, which I formed very strongly while at Bow and confirmed by comparisons between dormitories with and without fires in them at night, has been quite borne out by the general evidence that I have collected at the schools.

Need for increased artificial warmth.

More liberality in this respect would act by making good ventilation much easier than it is now, would keep the air drier (an important matter not only from the ophthalmic point of view), and would help (if properly managed and not abused) to prevent many of the younger children from getting so pinched and starved as is now the case in cold weather.

III. Closely connected with the two preceding subjects is that of out-door exercise.

Exercise in open air.

There is not nearly enough playground space in most of the schools. In about half a dozen of them a grass field is set apart more or less completely for the children to play in, but in most of these it is a very small field. The best fields are at Anerley, Brentwood, Southall, Edmonton, and Leytonstone; there is also a small one at Norwood and at Leavesden. Since my visit to Sutton I have been informed that the managers have lately determined to set apart several acres of grass there.

The playgrounds at the schools are always small, sometimes absurdly so, and often confined by high walls on three sides out of four. It will, perhaps be objected, that several large schools for upper class boys in London (the Blue-coat school, the old Charter House and St. Paul's school for instance) have quite equally confined playgrounds. I do not know the size of the grounds in these schools in proportion to the number of boys, but even supposing them to be as small relatively as those in most of the pauper schools there are many other circumstances, especially in respect to diet, clothing, holidays and previous average bodily vigour, in which the boys of the upper class schools referred to have great advantages over the paupers, and these differences might easily neutralize to a great extent the deficiency of playgrounds. The playgrounds for the girls are generally smaller than for the boys, but not perhaps smaller in proportion to their numbers. The play-sheds are as a rule too small and deficient in top or through ventilation; they are sometimes very low and dark also.

I should very strongly advise that a grass field should be set apart entirely for play in every school. Whenever it is practicable there should be a separate one for boys and girls so that they may use it daily and freely, unless indeed it be thought advisable to let boys and girls associate. I cannot help thinking, that with certain obvious restrictions, *e.g.*, the constant presence of one or more officers, the boys and girls might associate together much more than is now the case; it would evidently be attended with great advantages to both sexes if it could be done safely. At least it might be tried with the brothers and

Grass fields needed.

sisters; these are at Anerley certainly, and I believe in the schools generally, allowed to see each other only once a week for an hour or so. The existing fear among the officers of introducing any such plan is at least partly derived, like some other of their opinions, from their being already over-worked and naturally therefore very shy of incurring any additional trouble, especially any duty to which they are unaccustomed.

Larger staffs required.

I feel sure that an increase in the number of officers who have immediate personal charge of the children is one of the changes which must certainly be effected, whether the schools remain under their present management or not. The almost incredible moral and intellectual stupidity displayed by many of the Anerley children of whom I gained an *intimate* knowledge at Bow, (some of them from having previously spent much time in the infirmary were perhaps unusually bad specimens), on all subjects except those taught in school and repeated in schoolroom fashion, is a feature which has also struck me very forcibly in most of the other schools; there appear to be only a few exceptions and with regard to these I have already noted my impressions. In order to form a true estimate of the degree to which the schools are answerable for this defect in the children it would be necessary to make wide and very various comparisons between them and similar children living at home in large towns and in the country, and this of course I cannot attempt. It might be found that the London pauper children, defective as they are, would compare favourably with the children of the poor in many *rural* districts, if not in towns. However this may be, I think the fault here complained of, a fault which if it is anything like as prevalent as many people think is a reproach to the schools, is dependent to a large extent on the absence of anything like attention to the children separately.

The *immediate* effect of unusual attention or kindness to the children is, I dare say, not always good; we certainly did not always find it so at Bow, especially with the elder ones some of whom had been in their school for many years. They often, under these circumstances, passed from the extremity of sullenness to the extremity of mere assertiveness and self-enjoyment. But this would probably soon disappear if officers were permanently appointed with the duty of educating the childrens' characters out of school, especially if the habit, which is not uncommon in various degrees among the school officers, of considering the pauper child as an inferior sort of human being could be changed for something like what is seen at the "Goliath," and at private schools such as the London Orphan Asylum, Mr. Spurgeon's Orphanage, and as I am told, in some Roman Catholic schools for the poor.

It is of course hopeless to expect much improvement in this respect when the officers can only just get through their routine work, as is now too often the case. With a few more officers and facilities for subdividing the children during play-time to some extent as they are subdivided in school-time, much might be done.

Infants and junior boys

IV. The infant school and younger boys.

The great liability of the infants to ophthalmia has been stated and abundant evidence of it given. I have also mentioned the fact that many of the elder boys and girls who are now suffering from old-standing eye disease, acquired it first when they were in the infants' school.

require special attention.

There can be no question that a well-appointed infants' department goes far to prevent ophthalmia in a school, the important points being I think, sub-division, personal attention, cleanliness and diet, rather

than any special limitation of numbers. Provided that the total accommodation and the relative number of rooms and attendants be increased in due proportion, I see no objection to the infants' schools being of large size. Under present circumstances, however, it commonly happens, in this as in other departments, that when the numbers are large they are managed in a more wholesale way than when they are small, an arrangement which may save immediate cost, but cannot be applied to human beings, as it may perhaps be to goods, without great risk of ultimate damage. So it generally happens that the infants are in the best state as to ophthalmia and other diseases where their numbers are small, or where sub-division is carried out.

The schools in which the infants are on the whole under the best circumstances as to space, cleanliness and attention are Forest Gate, Brentwood, Anerley and Leavesden. At Leytonstone, Southall and Edmonton they are well tended in many respects, but at the first two their number is excessive, while at Edmonton no doubt the large Irish element and the excessive crowding of the district from which the children come, have some share in the unsatisfactory result. At Mitcham a praiseworthy effort has been made for some time past to improve the general state of the infants' eyes by keeping those whose eyes are healthy on admission permanently separate from the rest, and the result so far as these children are concerned, is very good, for nearly all of them have remained healthy; still, however, the largest proportion of the infants are in a very bad state. At Anerley a somewhat similar sub-division has come about, though in a different way. There the great bulk of the infants are in a very good condition indeed, the small proportion who are separated on account of their eyes being almost all old chronic cases which are still liable to relapses. Brentwood, Forest Gate and Leavesden all show the effect of arrangements which on the whole (though having some weak points) are good. At Brentwood, where the infants, though forming only 13 per cent. of the school and numbering only 36, are sub-divided into two departments and have a field to play in, there were only 2·5 per cent. with discharge from their eyes, a proportion which for the time being, was smaller than that in any other school. The state at Anerley would be at least as good if the old ophthalmic cases, remnants of a past state of things, were subtracted.

In many of the schools the younger infants (below 4 or 5) are formed into a "nursery" department, and kept either partly or wholly separate from the older ones, and this group usually contrasts very favourably, as regards ophthalmia, with the older ones, who often have less proportionate playroom space and always much less attention from nurses, &c. This freedom from ophthalmia was observed in the nurseries even though the nursery infants were not always so robust and healthy looking as the older ones. I attribute the result partly to the better ventilation usually found in the nurseries which will help to prevent the formation of the "sago grain" condition of the eyelids; but chiefly to the smaller risk of contagion which naturally follows both from the greater cleanliness observed in the nurseries and from the young age of the "babies" rendering them less active and mischievous than the older infants.

I am therefore not disposed to agree with those who hold that it is out of the question to get rid of ophthalmia so long as the schools contain "infants" and older children on the same premises. It is no doubt true, as has been abundantly shown in this Report, that there is far more difficulty in keeping infants free from ophthalmia (and all other local contagious diseases) than the older children, and I think it is out

of the question to expect such a result unless the provisions for the infants are very much improved at most of the schools. I think further that any improvements which may be made will be to a great extent neutralized unless they are accompanied by a separation of all the infants into healthy and ophthalmic, either separately at each school or by drafting off all the worst to such an isolation and quarantine school as has been sketched above.

It appears to me that not nearly enough use is generally made of the girls, particularly the elder girls, in helping to take care of the infants. I quite agree with Mrs. Senior in laying great stress on the importance of carrying out this principle much more largely and systematically than is at present the case in any school; and I should insist on it not only on general grounds but as a by no means unimportant help (if managed in an orderly way) towards the prevention of ophthalmia among the infants. At the Bow school the girls were allowed to mix very freely with the infants, and as was to be expected many of them soon took to particular ones, nursing and taking care of them whenever they had the opportunity.

Whether it might be advisable on administrative and educational grounds, if it were possible, to separate the healthy infant schools from the boys' and girls' schools, I do not inquire. Such separation, if it were accompanied by enough sub-division, would no doubt make the task of preventing ophthalmia among the boys and girls easier; but as has been explained, it does not seem to me to be at all *necessary* on the ophthalmic ground merely. I must, however, again insist strongly on the very great desirability of making arrangements for the separation of all the ophthalmic infants from the healthy ones, permanently or at least for an indefinite time, and that as speedily as possible.

Need for prompt action as regards the infants.

The little boys (7 to 10) are in most schools more liable to ophthalmia than any of the other children except the infants, and much more so than the girls of corresponding age. They do not, as a rule, suffer from the worst forms of rapid ophthalmia, but are peculiarly liable to chronic muco-purulent disease with very granular lids. I think this is due probably to the greater liability accompanying their age, aided by the facts that little boys are by nature of curiously prying and dirty habits and care less about appearances than the girls, and that they have lately changed from the frocks and washing pinafores of the infants' and girls' schools to the trousers and jackets of the boys which, as a rule, cannot be washed. I believe the boy "infants" are always on the whole dirtier than the girl "infants," and if to this we add the greater difficulties of keeping clean in unaccustomed and awkward boy's clothes, together with the deprivation of such nurse's attention as they received while "infants," I think we shall have reason enough for the frequent relapses of mild ophthalmia to which the junior "boys" are subject.

The little boys.

It would not be very difficult to meet these wants by having upper clothes that will wash, at any rate in summer, and by giving the little boys more attention. With proper training and a real wish to do it, more might perhaps be made of the elder boys as helpers and monitors than is now the case. If the little boys could be more helped and encouraged in their play than is now attempted the separation of them into a distinct school would produce even more good than it has already done at Sutton. If the numbers are large the little boys are sure to go to the wall when mixed indiscriminately with the big ones; if, on the other hand, they were separated and left to their own devices altogether they would be too apt to collect into knots in muddy corners, and so make themselves cold and miserable instead of playing about and keeping warm.

V. The next point of importance is want of cleanliness. This is not apparent as a rule in the faces and hands of the children or from the external appearance of the bed coverings, &c. It is rather to be inferred from differences in the laundry arrangements, in the number of clean towels issued, in the size and arrangements of the lavatories, in the frequency with which the children are bathed, the quantity of water used and the number of children who are cleaned in each bath. Cleanliness.

In all these matters there are the greatest differences between the schools, some depending on the arrangements of the premises, others apparently on custom only. Thus at Islington all the infants have a warm bath every night, 6 children being washed in one bath-full of water (about 100 gallons more or less); at Norwood the infants generally are bathed only once a week and only the specially dirty ones every night; at Sutton the boys between 7 and 10 and the elder infants (5–7) have only one bathing weekly; at Forest Gate the infants in the school (I omit those in the probation ward) are bathed twice a week at the rate of 30 children to 100 gallons (or thereabouts) of water; at Leavesden they are bathed twice a week, and only two are cleaned in the same water. These are given merely as examples. I cannot say that I have succeeded in tracing any constant relation between the lavatory and bathing arrangements and the ophthalmic state of the schools. At most of the best schools the washing and bathing accommodation are good and the details well carried out. But the same is true of several which are in a bad state, especially Hanwell, where the supply of clean towels and clean water is practically unlimited (a clean towel for every child at every washing, or about 2,000 clean towels daily; about 6 gallons of water per child among the boys and girls, and for the infants a separate basin of clean water for each) and where the supervision of the washing arrangements is the subject of particularly careful attention. It is not indeed to be expected that any such relation would be thus demonstrable, because water and towels form only two out of many possible sources of contagion. After carefully viewing all the evidence I have been able to collect from the schools, I am not disposed to attribute much importance to the water used for washing as a vehicle of contagion, and am also of opinion that the share taken by the towels in this respect is less than many people suppose. My impression is that by far the commonest instruments of contagion are the children's fingers, not used purposely, but rubbed accidentally or in play over the child's own face and eyes or over those of its companions; this is, I fancy, particularly the case with the infants, who are for ever mawling each other about. Pocket-handkerchiefs if supplied only at intervals of several days, would seem a likely means for carrying matter from one eye to another or one child to another, but I have no facts which would bear out this supposition: I believe they are not allowed at all in most of the schools. Commonest means of contagion.

Having said this however, I hasten to add that I should on no account allow the slightest relaxation of vigilance in respect to washing and bathing. I should make an abundant supply of clean water and towels, both for daily washing and for bathing, essential. This I consider necessary on the ophthalmic ground because, although no one can under ordinary circumstances show how much share these means have in spreading ophthalmia, there are facts known which prove that the disease has been conveyed in this way and these constitute a strong *a priori* reason for guarding against the possibility of such means coming into play in the schools. Rigorous precautions necessary as to towels and water.

Whether the towels should be numbered and belong always to the same child, or be changed very often and given out promiscuously, is

not I think, a matter of great importance, provided that when given out they are really clean and dry. The numbering plan is quite feasible, and is carried out (I believe well) at several of the smaller schools; it was carried out at Bow under rather difficult circumstances and found to work well after the plan had once been got into good order; it is one means, though a slight one, of discipline and education. This plan would, however, be utterly impracticable with the present arrangements in schools as large as Hanwell or even Anerley, and I think that, *with enough laundry accommodation*, a daily supply of clean unnumbered towels is equally good. I would, however, abolish roller towels. For washing I think there is nothing equal to the jet system by which, when properly arranged, it is absolutely impossible for the same water to be used by more than one child, unless it be splashed purposely from one to another. The best apparatus of this kind that I have seen is the new one at Anerley; it is very conveniently arranged and supplied with hot and cold water, and is, I believe, not an expensive one.

While insisting on the importance of cleanness in essentials, by which I mean towels, sheets, pillow-cases, body clothing and cleanness of body and head, I should not be inclined to make too much fuss about the hands and face and pinafores being clean at all times. It is quite hopeless to think of keeping the little children always clean unless they are prevented from playing, so that practically if a "Sunday's-best" air is common in a school it can only mean that the children do not get exercise enough, and deficient out-door exercise is a far greater evil than moderate external griminess.

It would, I think, help to get rid of the disease if the boys' upper clothes could be made of some material that would wash and yet would not smell so abominably as fustian and cords. Whether this is practicable as a matter of expense I do not know; but there is no doubt that such a change would have a beneficial effect not only on the cleanliness but on the general appearance of the boys; it would change a boy externally from the "pauper" to the "band-boy" or "sailor boy." At Brentwood a washing gray cloth is now being tried; it looks very nice and is good, but is costly. At Anerley during the last summer a number of jackets and trousers were made of coarse linen material and often washed; for summer wear they seemed excellent.

Food.

VI. As regards food I need say very little; Dr. Bridges has treated the subject in some detail in his Report. I will only say that, while fully agreeing with Dr. Bridges that a departure from the principle of a fixed dietary is to be deprecated for the elder children, I am inclined to attach rather more importance than he does to moderately frequent variations, at least to variations in *cooking* if not in the ingredients. It should not, I think, be forgotten that most of the children live from year's end to year's end in the schools without holidays and the changes which they bring, and with very few opportunities of getting little things to eat for themselves. I do not mean that holiday variations and sweet-shop stuff aid digestion or increase bodily strength directly, but I am inclined to think that they help to prevent a certain loathing of food which, even in adults and more in children, not uncommonly results from the repetition of precisely the same food on the same day of the week for months and years. The answer perhaps will be, "starve them into eating it," a judicious plan within limits and if applied to robust elder children. Probably variations of cooking would be free from some of the objections which apply to the principle of discretionary diet scales.

As for the infants there can be no doubt, as Dr. Bridges points out, that much more special arrangements are advisable for their dietary than

are found in most of the schools. Their food should differ in several respects (particularly by containing much more milk) from that of the elder children, and it is of especial importance that they should be fed oftener than these. The want of more personal attention is felt at the infants' meal times, for they will often waste or leave food which with a little care they would eat, and which moreover they really want. More attendants wanted for the Infants.

There is much need for increased attention to be bestowed on the physical development of the infants for the simple reason that they are the stuff from which the boys and girls grow. To put the matter in its most utilitarian aspect, I have no doubt in the world that, so far as the immediate result was concerned, it would pay much better, after a few years had been spent in the process, to bring up the infants really well both physically and in all other respects than to let them grow up as so many of them now do. This at any rate would be true of the permanent infants, and it might furnish one reason for the separation of casual from permanent children. I am aware that one objection which will be urged against bringing up the orphan and deserted (*i.e.* permanent) pauper children too well will be to the effect that the plan would amount to a premium on desertion. Precisely the same objection is brought against the boarding-out system. This aspect of the question, though of far greater importance socially than any question of immediate health, is of course not one for me to discuss.

In asserting my belief that greater care spent on the "infants" would result in a better race of "boys" and "girls," I do not mean to say that we should succeed in turning out young men and women as well grown and developed as the average of the upper or middle classes; parentage of course has a very considerable share in the permanent characters of the offspring. I only mean that we should effect a notable improvement.

VII. A few remarks will be in place here on the best size for these schools from the medical point of view. Size of schools.

That there is no invariable relation between large size of schools and either destructive or prevalent mild ophthalmia is evident enough from the facts that there are both small and large schools in a good and bad state, and also that the "ophthalmic state" varies a good deal at different times in the same school without any very great alterations of number or management. We find, however, that the two largest schools, Sutton and Hanwell, are and have for long been, very bad as regards ophthalmia; while the two schools which at present are best are both very small (Islington and Mile End). Anerley was until lately in a very bad state, unprecedented means having been taken to rid it of the disease. The remaining large school, Forest Gate, which at present occupies and has for some years held a fairly good position, has had the advantages of the large probation building with its multiple uses and of rather exceptionally good management.

It is evident that several of the small schools are fighting against heavy odds in the shape of defects in structure, overcrowding, unhealthy source of their children, or bad position of their premises; and when several such defects are united, as at Mitcham, with a rather large number of children, the whole result is very bad.

I think the common sense view of the matter is that, under similar conditions of structure, administration and health of the incoming children, a small school will be kept free from this and other local contagious diseases much more easily than a large one. This will be so because there is always a tendency to work a large school with a smaller proportionate staff than a small school; and also because it is,

in my opinion, impossible for one superintendent, however able and conscientious he may be, really to "superintend" in any proper sense of the word a very large school. If it is as much as one superintendent can do efficiently to look after a school of, say 400 children, it is clearly hopeless to expect the same official to produce an equally good result in another school of 800, or 1,200, or 1,600. It is not enough to answer that a special staff of subordinates is provided in the large schools to do parts of the superintendents' work which in smaller establishments would be done by himself; for, unless I am greatly mistaken, work which ought really to be done by the chief officer cannot be formally and permanently deputed without risk. No fair comparison can be drawn between the pauper schools and those of a much higher class. In the higher class schools the assistant masters, &c., although subordinate in rank, are as a rule equal in social position and education with the chief; their ideas of duty are probably the same as his own; in the pauper schools, allowing that the superintendents were always fitted socially and by education for their work, we should still have to contend with the difficulty of subordinate officers who in a good many cases, from education and association, stand on a more or less different level, either higher or lower, and whose views of duty and responsibility might probably differ to some extent from his own.

Of course no pauper school can be in a permanently and safely good ophthalmic state unless the superintendence is good, and I have a very definite opinion that, however good the chief officer may be, the chief office will not be done uniformly and permanently well if the institution is too large to allow of the superintendent having a personal knowledge, not only of the chief details of the various departments, but of the children individually, at least of all the boys and girls.

My knowledge of a superintendent's work is far too limited for me to offer any more detailed opinion than this, and I would qualify what has been said by readily admitting that the maximum number which can be well managed will vary with different men. There are of course men who could manage a school of 200 well, but who could not undertake 400; I am, however, inclined to think that from 400 to 600 should be the maximum number under the bonâ fide supervision of a single chief if we wish to ensure the greatest efficiency, not only in respect to freedom from eye disease, but in most other matters. To what extent such a sub-division could easily be made with the existing premises at the largest schools I do not inquire; it would be easier no doubt at Sutton, Forest Gate, and Anerley, where the buildings are already a good deal separated, than at Ashford or Hanwell.

A very few words of recapitulation. I can see no reason why ophthalmia should not be, for practical purposes, got rid of from the bulk of these schools in a few years, if the principal points discussed above can be carried out.

It is clear, however, that the fulfilment of the necessary conditions means increased expense in several particulars.

With regard to the first important matter, space, it is well known that there is a good deal of vacant room in several schools which, owing to complications connected with the present management, cannot without great trouble be used for accommodating children from over-crowded schools.

If the schools remain under their present management probation wards to contain a fortnight's admissions ought without delay to be provided at all which do not contain them.

In many of the schools, under the same circumstances, increased accommodation will have to be provided for prolonged isolation and education of slight cases, whether admitted from without or arising within the schools.

Sundry other structural alterations and additions will be needed at many of the schools; especially in respect to warming, ventilation, lavatories, and laundries.

Additions are much needed to the staff of all the schools, and the payment of higher salaries would in many cases, I have no doubt, be found really remunerative. In my judgment also arrangements are much needed for relieving the officers from such over work as is now often necessary, and a more liberal scale of holidays would often ensure the work being done in a less routine spirit.

Every school should be provided with a grass field of good size to be used exclusively as a playground.

There is great need of additional attendance on the infants.

Certain changes are necessary in the dietary, especially of the infants.

Of all the schools Anerley now more nearly approaches the necessary standard as regards structure and regime than any other, and I believe it has a better prospect of permanent freedom from ophthalmia, and of the many collateral advantages implied in that condition, than any other school. Still the maintenance of its present state will require very great vigilance. The "Goliath" is, I should think, in as safe a state as Anerley, but while it labours under some difficulties, it enjoys the great advantage of being free from young children and of admitting as a rule only the better grown and more robust boys.

Numerous cases of ophthalmia will continue to be brought to the schools from outside. Under the best management a few cases will arise spontaneously in the schools, composed as these will always be of children among whom the predisposing condition of the eyelids is very common and who are of low average original vigour. Such cases will be especially apt to arise after outbreaks of measles. The disease ought, however, never to spread and become prevalent if a real desire exists to stop it in spite of all appearances.

I repeat, however, that the difficulties of arriving at this nearly complete freedom from ophthalmia will, in my judgment, be found practically far greater if the schools continue under their present management than if arrangements are made for the separation and treatment of all the ophthalmic children (whether admitted from without or now existing in the schools) in one or more isolation or quarantine schools.

I remain,
My Lords and Gentlemen,
Your obedient Servant,
Edward Nettleship, F.R.C.S.,
Surgeon to the South London Ophthalmic Hospital.

APPENDIX.

Method of the Inspection.—This consisted in the full eversion of both lower lids of every child, and of one or both upper lids in a large majority of the whole number. In a good many of those whose lower eyelids were quite or nearly healthy no examination of the upper lids was made.

Every "boy" and "girl" was asked whether he or she had ever had "bad eyes." This question for the "infants" was answered by the nurse or schoolmistress who happened to know the children best. In all children whose corneæ showed any opacity this was noted in columns prepared in a note book in such a way as to allow of an approximate arrangement of all the cases afterwards, both according to the cause of the opacity and the degree of damage to sight due to it.

The inspection was made between 12th August and 24th September, but only 24 of these days were spent in visiting the schools. The total number of children examined was 8,874, or at the average rate of 369 on each of the 24 inspecting days. I did not record the number of hours spent in actually looking at the children's eyes; I usually, however, spent 6 or 7 hours (sometimes 8 hours) of each inspecting day at the schools, and as from 1 hour and a half to 2 hours were occupied by looking at various parts of the premises, by delays, lunch, &c., it is probable that about 4½ hours were spent in actually inspecting the children. This would give 108 hours or 6,480 minutes for the examination of 8,874 children, or an average of ·73 minute to each child. Of course some children occupied much more than this time (at Margate, for instance, where there were many bad corneal damages which required a longer examination, the average time was a minute and a half to each), others (chiefly those with healthy or nearly healthy lids), considerably less.

A record of the state of the eyelids was at once entered on a form prepared for the purpose by one of the school officials who for the time being acted as my clerk. The notes of corneal damages were made by myself in a book, a reference being kept to the child's name, &c. on the form, so that the state of eyelids in every case of corneal damage could be afterwards ascertained; (at Sutton, the first school visited, this relation was noted only for the corneal damages in the infirmary).

With regard to the question, "have you ever had bad eyes," which I put to every child, either directly or through the schoolmistress or nurse, I have no doubt that the replies were as a rule correct and that if they erred it was chiefly on the side of omission. Some of the school officers were half amused at my expecting to get in this way information upon which any reliance could be placed, the common idea being apparently that the children will say "yes" to almost any question. I found, however, that most of the children answered very promptly either "yes" or "no," that many of those who at first were shy and gave no answer became quite tractable if a little patience was used, and that a few persistently denied having had anything amiss in spite of almost certain evidences of former disease in the state of the lids or cornea. It is to be noticed here that the children generally consider "bad eyes" or "weak eyes" to begin when treatment in the school or removal to the infirmary takes place, and the custom in these respects, varying as it does more or less with every medical officer, affects in an important degree the proportion of children who have had "bad eyes" in each school. The vast majority of the attacks occurred in the schools, but in a few cases the children said, either voluntarily or in answer to special questions, that they had "had bad eyes out of doors," *i.e.* before they came to the school.

I subjoin a specimen of the forms used with the abbreviations employed, together with a description of the leading features of the various classes of eyelids.

[OPHTHALMIA FORM; reduced one half linear.]

_____ *School.* _____ 1874.

No.	Name.	Age.	Parish or Union.	1 N.	2 F. G.	3 C. G.	4 Sc.	Orphan or Deserted.	Under one year in School.
	Smith, John -	10	[*Name of Union here.*]	—	1 *s*	—	—	D.	Yes.
	Jones, Thomas -	13	—	—	—	1 *s* ×	—	O.	No.
	Thompson, Eliza -	8	—	1	—	—	—	—	Yes.
	Reed, John - -	12	—	—	1×	—	—	—	Yes, Fluc.
5	Butler, Mary -	13	—	—	—	1× *d*	1	—	No.
	Johnson, James -	6	—	—	—	1× *d*	—	O.	No.
	Brown, George -	5	—	—	—	1 *s*× *d*	—	—	No.

Explanation of Columns headed 1, 2, 3, 4. Col. 1. "N" means "normal," and all children against whose names a mark ("1") is found in this column are considered to have healthy or very nearly healthy eyelids.

Col. 2.—"F. G." means "follicular granulations." Most of the children in this column show more or less marked sago-grains, but without much congestion or any great thickening.

Col. 3.—"C. G." "congested granulations," *i.e.*, decidedly granular lids.

Col. 4.—"Sc." "scarred eyelids;" this column includes all cases in which the conjunctiva shows cicatricial lines, bands, or patches, whether these are the result of treatment or of the unchecked disease.

A mark in Col. 4 and in one of the other columns as well, means that the lids were in a mixed granular and scarred condition; by far the majority of the scarred cases are in this mixed state, only a few having become quite smooth and permanently quiet.

The mark "×" means that there is a history of previous "bad eyes."

The letter "d" means that discharge is present in greater or less quantity.

The letter "s" means "slight" and is intended to qualify the state of the eyelid; thus the last-named child on the table (George Brown) has advanced granular lids, but only slight in degree as compared with the child above him (James Johnson) who has severe granular lids. In both there is a history of previous ophthalmia, and both have discharge.

The number in the first column ("5") is a reference to the notes of corneal damage; No. 5 on page 10 (or shortly "5, 10") being written against the note of this child's corneal opacity.

"Fluc." means "fluctuating" or "casual."

More detailed explanation of the terms "healthy," "follicular granulations" and "congested granulations."

Col. 1. Normal eyelids. These include,—

a. All perfectly healthy lids. No sago-grains whatever are visible. The conjunctiva of the lower lids is thin, and nearly white except close to the free border.

b. Some in whom the lower palpebral conjunctiva shows a slight degree of florid congestion, but is not in the least thickened. The redness is commonly due to congestion and tortuosity of the larger vessels, a condition resulting in a number of little irregular elevations of the surface, especially near the fornix, which are not always easy to distinguish from sago-grains.

c. Some in whom a very few sago-grains are visible. They are generally small, sometimes not accompanied by any congestion, but in other cases there is slightly increased redness of the adjacent conjunctiva, or of the whole membrane.

As a rule, the cases above described give no history of previous ophthalmia; there are, however, a good many exceptions to this, and it is not very uncommon to have a history of some attack, probably mild in degree, when the conjunctiva is perfectly normal.

d. Children in whom the whole lower palpebral conjunctiva is rather too red and rather too thick. The redness is commonly rather dull in tint and sometimes of a pale shade. The thickening gives the impression of being due more to slight effusion in the sub-papillary tissue, than to the definite congestion and enlargement of the papillæ which causes a "sandy" appearance. Generally no sago-grains are visible; sometimes a few small ones can be seen. I think a history of previous "bad eyes" is commoner here than in *a*, *b*, or *c*.

e. A few where the conjunctiva of the upper lids has rather less than the normal brightness over either a part or the whole of its surface. This is sometimes accompanied by very slight general congestion of the "sea-weedy" type and sometimes, with or without this feature, by abnormal redness of the canthal ends of the lid. The roughness is due to slight papillary enlargement and never to sago-grains.

It will be understood that the above descriptions refer quite as much to distinguishable elements as to separate single conditions. The gradations are innumerable; thus *b*, *c* and *d* are often associated either in pairs or all together. I believe *e* seldom occurs without either *c* or *d*.

I am not sure whether it is strictly right to include the conditions *c*, *d*, and *e* under the heading of physiological variations. If morbid, these states probably result from; 1. Slight previous attacks of conjunctivitis occurring in feeble children whose tissues but slowly regain the healthy state; 2. The earliest stage of uncomplicated "granular" or "sago-grain" disease proper; 3. Both these conditions together. For practical purposes, however, I believe that the majority of the cases here indi-

cated may be considered healthy, though a few of them no doubt are in a more unstable condition than is indicated by the appearance of the conjunctiva.

Col. 2. Eyelids in which the sago-grain element is very prominent and which are usually highly unstable and thus predisposed to ophthalmia. The following groups are included in this class:—

a. An early stage of "granular ophthalmia" or "sago-grain" disease, uncomplicated by any appreciable change of the other conjunctival structures and without any history of previous ophthalmia. The upper lids are generally slightly "sandy," and very little congested. In some of these the sago-grains are so old that the predisposition to ophthalmia which accompanies their early growth has ceased; these are for practical purposes healthy.

b. A more advanced stage. Sago-grains large and very evident on the lower lids, accompanied by decided congestion and by a slight or moderate degree of thickening and extension of surface. Upper lids very red and "sandy" at canthal ends with a number of small sago-grains in those positions; in many cases the congestion and the small sago-grains extend over the whole upper tarsus. Occasionally a little discharge. Many of these children, probably a majority, have had one or more attacks of "bad eyes," most of them, I believe, mild.

c. A state which seems to be a more advanced condition of *d*., *Col.* 1. The prominent change is a general thickening and redness, more or less in degree, of the lower palpebral conjunctiva. Sago-grains are often visible on the lower lids but more or less obscured; in other cases none can be identified, though probably they are generally present and only hidden by thickening. Upper lids somewhat red; often uniform capillary congestion and fine "sandiness" is found. A number of young sago-grains may be present on the upper lids, or none may be visible although the degree of thickening of the upper lid is often not enough to hide them if present. Most of this group have, I think, had an attack or attacks of "bad eyes." The group is distinguished as a whole from *b* by the comparative obscurity and paucity of "sago-grains."

Col. 3. Here also are two leading groups which exemplify still more strongly the above ill-defined distinction between the cases in which the *follicular* and those in which the *papillary* granulations are the more abundant.

a. Cases showing great abundance of large advanced sago-grains on all the lids. The degree of papillary hypertrophy (distinguishable as such), and the degree of congestion vary greatly in different cases. This group includes all large fleshy-looking granulations of whatever colour.

b. Those in which great increase in the length of the papillæ is the chief appreciable alteration; the advanced sandy, velvety, tomentose, villous, or shaggy eyelids. The congestion is usually intense. At this stage no sago-grains may be visible on either upper or lower lids, or they may be very evident on the lower lids only; they often appear clearly enough when by treatment the elongated papillæ have been reduced in size.

c. A third and small class in which the most evident change consists of a more or less uniform thickening of the conjunctiva without a corresponding degree of roughness; the conjunctiva is often pale red or pinkish. Probably in these cases the disease is always of long duration.

I have also included in this column a small number of recent acute cases in which the lids were at the time villous and thickened, but would not improbably become nearly healty when the inflammatory symptoms ceased.

A very large majority of all the cases in column 3 give a history of previous "bad eyes," often of several attacks. A small proportion, however, deny this; in these cases it is of course quite possible that a severe attack or attacks of ophthalmia may have occurred at a very early age their eyelids being already in a state of early follicular disease; indeed were it not for the known facts as to cases of this class in adults, particularly in the army, I should have assumed that such an attack had almost always taken place. Bearing these facts in mind, however, I am disposed to regard many of the cases in column 3 and in column 2 as showing the normal course of granular ophthalmia, often aggravated by occasional *slight* conjunctival attacks, and not as the results of severe attacks of acute conjunctivitis in predisposed eyelids.

A considerable number of cases in column 3 have flakey or stringy discharge of yellow or yellowish white colour on the lower palpebral conjunctiva, or among the eyelashes.

Column 4 includes all children whose eyelids are scarred on the conjunctival surface. The great majority of these are of course in a more or less granular state

as well, generally badly granular; in a few the lids had become quite smooth and pale again, and looked, with the exception of the definite cicatricial band or patch, almost healthy. I find that scarring is noted as being present in greater or less degree in 866 of the children (nearly 10 per cent of the whole number examined). The following facts as to the relation between the various sequelæ of granular ophthalmia and the presence of scars are of interest.

Entropion was or had been present in only five children out of the whole number examined. In all of these the lids were scarred; in one the scar was due to ulceration after the use of powdered acetate of lead, it had been very slight and was cured by removing a fold of skin; in one (a boy of about 19, who had been 14 years in the school) the scarring was bad and had given rise to slight entropion of one upper lid at its outer end, there was no opacity of the cornea and no inconvenience resulted; in the remaining three the scarring was excessive and the corneæ were much damaged by the results of old pannus (the conjunctiva was much shortened in two of them); all three had been a long time in the schools, but one of them distinctly remembered having had bad eyes before she ever came to the school; one had been operated on recently with considerable benefit. Of the total 886 children with scarred lids, 284 (32 per cent.) had opacities and irregularities of one or both cornea due to or associated with ophthalmia. Of this number 284, the damage was of the degree classed as "lost" in 18, "severe" in 33, "moderate" in 89, and "slight," "very slight," or "none" in the remaining 144. The proportion borne by these numbers to the *total* number of children with each degree of ophthalmic corneal damage is shown in the following table. (Some Sutton cases are excluded, the relation between the corneal damage and the state of the lids not having been recorded.)

Ophthalmic Corneal Damages and Scarred Lids.

———	"Lost."	"Severe."	"Moderate."	"Slight," &c.	Total.
Total number - - - -	42	63	217	383	705
Per cent. - - - -	100	100	100	100	100
With Scarred Lids - - -	18	33	89	144	284
Per cent. (average 42·4) -	42·8	52·4	41·	37·6	40·2

The number of scarred lids among the 55 non-ophthalmic corneal damages in which this relation was recorded is 7, or 12·8 per cent., and of these 7 no less than 4 are due to ophthalmia neo-natorum; or in other words, scarred lids occur in only 3 (6 per cent.) of all the corneal damages due to injury, small-pox, and uncomplicated syphilitic keratitis, while they are found in 42·4 per cent. of all the corneal lesions classed as "ophthalmic."

The opacities and irregularities of the cornea met with in the school-children were divided broadly into two groups, one containing all those due to injury, small-pox, heredito-syphilitic keratitis and purulent ophthalmia of new-born infants, none of which are specially related with any of the conditions of life in the schools; the other consisting of all cases in which the opacity was due to pannus or to ulcerations (except those caused by small-pox or ophthalmia neo-natorum). I made an attempt to distinguish between opacities due to pannus, vascular ulceration from friction by the lids and purulent ophthalmia occurring since infancy on the one hand, and opacities caused by ulcers unconnected with contagious ophthalmia on the other. I found almost immediately, however, that it would be quite impracticable to make a distinction between opacities due to ulcers which had occurred without any connexion with the state of the eyelids or the occurrence of acute conjunctivis, and others caused entirely by these conditions. Opacities due to these several causes were often so mixed up in each case that it was impossible to say merely from the appearance of the cornea whether the result was due entirely to the existence of granular lids, or partly to this and partly to other causes of ulceration, *e.g.*, the scrofulous cachexia or a state of deficient nutrition. It was quite evident that in many of the cases several causes had combined to produce the observed corneal changes.

I therefore determined in making out the returns to group together all corneal opacities not due to injury, small-pox, hereditary syphilis, or infantile ophthalmia into a single class. This class being composed largely of cases *undoubtedly* due to purulent ophthalmia in the schools or to granular lids, and containing besides a very

large number in which it is highly probable that the corneal ulcerations were either excited in the first instance or much aggravated by the roughness of the lids, I thought it justifiable to call "Ophthalmic corneal damages," *i.e.*, corneal lesions either directly due to contagious ophthalmia or granular lids, or else very closely associated with the latter condition. For the purposes of this inquiry it was enough to ascertain the relation of co-existence between corneal damages and granular lids without attempting to ascertain in every case whether the ulceration was caused by the roughness of the eyelid, or whether, on the other hand, the eyelid became rough from the occurrence of chronic or relapsing ulceration of cornea. While I have made no attempt to distinguish between primary granular disease of the conjunctiva and granular lids secondary to corneal ulceration I may here remark, however, that in many of the latter class of cases, if a careful investigation had been made before any corneal lesion occurred, a slight degree of granular disease (sago-grains on the lower lids and sandy-upper lids) would very likely have been found.

In a few cases the corneal opacity was the result partly of pannus or of vascular ulceration, and partly of interstitial keratities due to inherited syphilis, but I have not ascertained with certainty that permanent or very chronic corneal opacity is more likely to occur in heredito-syphilitic children who have granular lids than in those with granular but no syphilitic inheritance.

With regard to the slighter opacities no attempt was made to ascertain which of them were present when the children first came to the schools and which had occurred during their school-life. This was almost always ascertained, as far as possible, for the graver damages, the result showing that while a few of the serious ophthalmic corneal damages were present on admission by far the largest proportion had taken place in the schools. (*See* Tables.)

(Here refer to per-centage of ophthalmic corneal damages in those under one year in the schools, Table 15., Report, p. 44.)

The following tables give in detail the figures from which many of my conclusions in this Report have been drawn. The numbers and per-centages in columns 1, 2, and 3 (showing the state of the eyelids) are not corrected, as in the Report, by the addition of 5 per cent. to column 1 and subtraction of the same number from column 2 ; the explanation of this correction will be found in the body of the Report, p. 3. For brevity the ophthalmic corneal damages are called class **A**, the non-ophthalmic being class **B**. "B.," "R.," "L." above columns of corneal damages mean "both eyes," "right eye," "left eye."

ALL THE SCHOOLS TOGETHER.

TABLE 1.—NUMBERS and PER-CENTAGES of VARIOUS DETAILS.

	Total.		State of the Eyelids.						Previous Ophthalmia.		Discharge.		Corneal Damages.			
			Col. 1.		Col. 2.		Col. 3.						A		B	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
1. Total of all Schools + all Metropolitan Children at Margate * - - -	8874	100	-	15·4	-	41·9	-	42·0	-	55·	-	11·9	-	-	-	-
Boys - -	4067	-	-	15·4	-	42·9	-	40·8	-	57·8	-	8·5	-	-	-	-
Girls - -	2839	-	-	12·2	-	46·0	-	40·8	-	58·9	-	6·5	-	-	-	-
Infants - -	1968	-	-	17·6	-	36·8	-	44·5	-	47·9	-	20·9	-	-	-	-
2. All the Schools + 119 Margate Children (those from the Schools) * -	8798	100	-	15·1	-	41·9	-	42·0	-	-	-	11·9	†793	9·1	‡59	0·67
Boys - -	4042	45·9	-	-	-	-	-	-	-	-	-	-	289	7·1	-	-
Girls - -	2817	32·0	-	-	-	-	-	-	-	-	-	-	319	11·3	-	-
Infants - -	1939	22·0	-	-	-	-	-	-	-	-	-	-	185	9·5	-	-
3. All the Schools — Margate - -	8679	100	1322	15·2	3973	45·9	3384	38·9	-	54·	-	-	-	-	-	-
Boys - -	3986	-	-	-	-	-	-	-	-	57·8	-	-	-	-	-	-
Girls - -	2771	-	-	-	-	-	-	-	-	57·8	-	-	-	-	-	-
Infants - -	1922	-	-	-	-	-	-	-	-	46·6	-	-	-	-	-	-

General Average of Discharge (Total No. 2.) in Col. 2. = 1·1 / in Col. 3. = 10·8 } 11·9

" " "

* There are at Margate 195 children belonging to the Metropolitan district. Of these 119 (B. 56, G. 46, I. 17) were admitted from their respective Schools. The remaining 76 came direct from the Workhouses or their own homes.

† Three cases of serious damage occurred at Sutton after my inspection; hence the discrepancy between this total and that given in Table 3.

‡ 76 cases show corneal damage **B**, but 17 of these are mixed with some **A** damage and are therefore counted in Clas **A**.

LE 2.—THE TOTAL NUMBER of CHILDREN EXAMINED in EACH SCHOOL, with the Per-centage in each of the Columns 1, 2, and 3; also the Total Number and Per-centage and the Number and Per-centage in the Columns 1, 2, and 3 of all the Children who have had *not more than one year* and *not more than one month* of School-life respectively, excluding Casuals, and of all the Children who have been selected as *Irish* on account of their surnames.

The particulars for boys, girls, and infants are not shown. The Margate children are not included.

CHOOL.	Number of Children.	State of Eyelids (Per-centages).			Irish.				Children not more than *one year* in School.				Children not more than *one month* in School.			
					Number and per-centage in School.	State of Eyelids (Per-centages).			Number and per-centage in School.	State of Eyelids (Per-centages).			Number and per-centage in School.	State of Eyelids (Per-centages).		
		Col. 1.	Col. 2.	Col. 3.		Col. 1.	Col. 2.	Col. 3.		Col. 1.	Col. 2.	Col. 3.		Col. 1.	Col. 2.	Col. 3.
tton -	1534	20·7	44·2	34·9	48 (3·1)	16·6	45·8	*	441 (28·7)	*	*	*	35 (2·28)	40·	57·1	2·9
nwell -	1159	9·4	44·8	44·1	74 (6·3)	8·1	40·5	–	235 (20·2)	–	–	–	65 (5·6)	33·8	61·6	4·6
rest Gate	848	16·7	55·6	25·8	52 (6·1)	17·3	59·6	–	272 (33·1)	–	–	–	48 (5·66)	27·	69·	4·1
ington -	236	24·8	59·	14·9	7 (2·9)	28·5	42·8	–	74 (31·3)	–	–	–	6 (2·5)	83·3	16·7	0
le End -	203	25·6	56·1	17·6	1 (·49)	–	–	–	74 (36·4)	–	–	–	†	†	†	†
entwood -	284	13·4	42·5	41·5	4 (1·4)	50	0	50	51 (17·9)	–	–	–	4 (1·4)	50·	50·	0
hford -	456	11·	39·7	48·3	40 (8·7)	12·5	40	–	No return.	–	–	–	15 (3·28)	33·3	53·4	13·3
uthall -	395	21·3	46·4	31·7	27 (6·8)	40·7	37	–	109 (27·5)	–	–	–	13 (3·2)	69·2	30·8	0
erley -	795	16·8	47·5	33·5	15 (1·8)	13·3	26·6	–	167 (21·)	–	–	–	62 (7·8)	41·9	54·8	3·3
avesden -	446	20·7	52·1	26·5	12 (2·6)	25·	58·3	–	119 (26·6)	–	–	–	22 (5·)	45·4	50·1	4·5
ttersea -	155	6·8	29·1	63·1	23 (14·8)	13·	21·7	–	29 (18·7)	–	–	–	6 (3·8)	16·6	50·	33·4
rwood -	322	15·5	35·2	49·2	15 (4·6)	6·6	46·6	–	86 (26·6)	–	–	–	21 (6·5)	42·8	33·4	23·8
tcham -	469	11·2	33·6	55·4	22 (4·6)	9·	31·8	–	173 (37·1)	–	–	–	17 (3·6)	41·	59	0
shet -	260	9·9	37·7	51·8	22 (8·4)	13·6	36·3	–	99 (38·)	–	–	–	11 (4·2)	45·4	54·6	0
ytonstone	387	18·3	40·5	40·9	17 (4·3)	11·7	41·1	–	83 (21·4)	–	–	–	24 (6·2)	58·3	33·4	8·3
lmonton -	325	7·3	24·5	66·7	79 (24·)	3·8	29·1	–	71 (21·8)	–	–	–	7 (2·1)	28·5	43	28·5
Goliath" -	405	18·3	45·8	35·4	25 (6·1)	20	32	–	34 (8·3)	–	–	–	–	–	–	–
tal - -	8679	1322	3973	3384	483	67	188	228	–	–	–	–	356	144	190	22
r-centage	–	(15·2)	(45·9)	(38·9)	–	13·8	38·9	47·2	–	–	–	–	–	40·4	53·3	6·2
xcluding Ashford -	8223	1266	3769	3188	–	–	–	–	2117	575	1045	500	–	–	–	–
r-centage	–	(15·3)	(46·)	(38·7)	–	–	–	–	–	(27·4)	(49)	(23·6)	–	–	–	–

* NOTE.—Per-centages have not been calculated for each column of each School.
† Return too late for insertion; would make but little difference in the total.

TABLE 3.—*A CORNEAL DAMAGES.—SUMMARY OF ALL THE SCHOOLS.

					B.	R.	L.	Total Children of each Class.	Total Children and Eyes.
LOST	Boys				–	4	5	9	Chil. 44
	Girls				1	16	5	22	Eyes 46
	Infants				1	7	5	13	
	Ch.	Eyes.		Ch.	Eyes.	2	27	15	44	
Will improve	–	–	Occurred "out-of-doors"	5	5					
Perhaps improve by operation (in one of them, the other is quite lost)	11	11	Complicated by Syphilitic Keratitis	1	2					
SEVERE	Boys				14	9	6	29	Chil. 66
	Girls				18	6	5	29	Eyes 161
	Infants				3	3	2	8	
	Ch.	Eyes.		Ch.	Eyes.	35	18	13	66	
Will improve	10	16	Occurred "out-of-doors" * 1 at Field Lane Ragged School.	6	8*					
Likely to get worse	–	–	Complicated by Syphilitic Keratitis † 3 are doubtful.	8†	16					
MODERATE	Boys				54	14	10	78	Chil. 228
	Girls				59	21	13	93	Eyes 370
	Infants				34	12	12	58	
	Ch.	Eyes.		Ch.	Eyes.	147	47	35	229	
Will improve	15	24	Occurred "out-of-doors" * 1 in a workhouse and 1 in Malta.	6*	9					
Likely to get worse	6	10	Complicated by Syphilitic Keratitis † 3 are doubtful.	5†	9					
SLIGHT	Boys				49	48	32	129	Chil. 338
	Girls				71	37	40	148	Eyes 582
	Infants				24	28	29	81	
	Ch.	Eyes.		Ch.	Eyes.	144	113	101	358	
Including "Very Slight" and "None":			Including "Very Slight":							
Will improve	11	15	Complicated by Syphilitic Keratitis * Doubtful.	1*	2					
Likely to get worse	6	8								
VERY SLIGHT	Boys				7	15	14	36	Chil. 78
	Girls				11	3	6	20	Eyes 98
	Infants				3	7	12	22	
					21	25	32	78	
NONE	Boys				1	2	5	8	Chil. 21
	Girls				2	2	3	7	Eyes 27
	Infants				1	1	4	6	
				Ch.	Eyes.	4	5	12	21	
			Complicated by Syphilitic Keratitis * 1 is doubtful.	2*	4					
Total Number of **A** Corneal Damages in all the Schools (including Margate Children belonging to the Schools = 119)	Boys				125	92	72	289	Chil. 794
	Girls				162	85	72	319	Eyes 1148
	Infants				66	58	64	188	
					353	235	208	796	

* It will be remembered that all the corneal damages in the school children have been divided into those caused by or associated with ophthalmia, *ophthalmic corneal damages* (Class **A**); and those which have no relation to this ophthalmia, *non-ophthalmic corneal damages* (Class **B**).

TABLE 4.—THE PER-CENTAGE of "LOST," "SEVERE," "MODERATE," "SLIGHT," and "VERY SLIGHT" OPHTHALMIC CORNEAL DAMAGES in each SCHOOL; also the sum of the Per-centages of "Lost" and "Severe," and of the "Lost," "Severe," and "Moderate," in each School.

SCHOOL.	"Lost."	"Severe."	——	"Moderate."	——	"Slight" and "Very Slight."	TOTAL,* per-centage of Ophthalmic Corneal Damage.
Sutton - -	·71+	·9	=1·61+	1·8	=2·41	5·3	8·71
Hanwell - -	·67+	·84	=1·51+	3·4	=4·91	7·2	12·11
Forest Gate -	·11+	·47	= ·58+	3·1	=3·68	5·5	9·18
Islington - -	·4 +	·4	= ·8 +	1·6	=2·4	2·	4·4
Mile End -	1· +	0·	= 1· +	2·5	=3·5	3·5	7·
Brentwood -	·35+	0·	= ·35+	2·5	=2·85	9·25	12·1
Ashford - -	·66+	·44	=1·1 +	2·88	=3·98	5·1	9·08
Southall - -	0· +	·77	= ·77+	2·8	=3·57	1·8	5·37
Anerley - -	·12+	·25	= ·37+	1·9	=2·27	4·55	6·82
Leavesden -	0· +	·45	= ·45+	2·5	=2·95	3·63	6·58
Battersea -	0· +	2·	=2· +	6·	=8·	3·3	11·3
Norwood - -	·31+	2·5	=2·81+	2·8	=5·61	3·12	8·73
Mitcham - -	·21+	1·27	=1·48+	2·3	=3·78	4·89	8·67
Plashet - -	1·53+	1·53	=3·06+	1·15	=4·21	4·61	8·82
Leytonstone -	1·28+	·51	=1·79+	4·5	=6·29	5·1	11·39
Edmonton -	·62+	·93	=1·55+	4·68	=6·23	8·12	14·35
"Goliath" -	0· +	·5	= ·5 +	·75	=1·25	1·25	2·5

* Including those causing NO DAMAGE.

TABLE 5.—CORNEAL DAMAGES **A**.

		A		
		B.	R.	L.
Will (*or may perhaps*) improve spontaneously (a few by special treatment)	Severe	6	–	4
	Moderate	9	5	1
	Slight	4	4	3
Perhaps more or less remediable by operation;	Lost	Children 11. Eyes 11.		
Likely to get worse	Severe	–	–	–
	Moderate	4	1	1
	Slight, and very slight	2	4	–
Complicated (aggravated) by Syphilitic Keratitis	Lost	1	–	–
	Severe	8 (3 of them ?)		
	Moderate	4 (2?)	–	1?
	Slight, &c.	1?	–	–
	None	2 (1?)	–	–
Occurred "out of doors," or said to be present when admitted	Lost	–	3*	2†
	Severe	2	1‡	3§
	Moderate	3‖	2	1

* Of which 1 has "moderate" and another "severe" of L.
† Of which 1 has "slight" of R.
‡ At Field Lane Ragged School.
§ Of whom 1 has also "moderate" of R.
‖ Of whom 1 occurred at workhouse and 1 in Malta.

TABLE 6.—CORNEAL DAMAGES **A** occurring *in Children who have been at other Schools*; in some occurring there, in others occurring in their present School.

—	In Children now at	Corneal Damage.		A		
				B.	R.	L.
"LOST"	Edmonton	*Attributed to*	Hanwell	–	1	1
	Hanwell	„	Mitcham	–	–	1
	Ashford	„	Plaistow	–	1	1
"SEVERE"	Edmonton	„	Hanwell	1	–	–
	Leavesden	„	Hanwell	1	–	–
	Leavesden	„	Plaistow	–	1	–
	Edmonton	„	Plaistow and Ashford.	–	1	–
	Ashford	„	Plaistow	2	–	–
	Leytonstone	„	Mitcham	2	–	–
	Edmonton	„	Isleworth	–	1	–
	Sutton	„	Anerley	1	–	–
"MODERATE"	Leavesden	„	Hanwell	3	–	–
	Edmonton	„	Hanwell	2	–	–
	Leytonstone	„	Hanwell	1	–	–
	Leytonstone	„	Mitcham	1	1	1
	Leavesden	„	Plaistow	2	2	–
	Ashford	„	Plaistow	2	–	–
	Edmonton	„	Isleworth	2	–	–
	Norwood	„	Sutton	1	–	–
	Sutton	„	Anerley	1	–	–
	Edmonton	„	Battersea	1	–	–
	Ashford	„	Fulham	1	–	–

TABLE 7.—**B** CORNEAL DAMAGES.—ALL THE SCHOOLS TOGETHER.

		B			Total from each Cause.	Total Children and Eyes.
		B.	R.	L.		
Injury	Lost	–	4	–	4	Chil. 9 Eyes 9
	Severe	–	1	–	1	
	Moderate	–	–	1	1	
	Slight, &c.	–	3	–	3	
		–	8	1	9	
"Fever"	Lost	–	1	–	1	Chil. 2 Eyes 3
"Scarlet Fever"	Moderate	1	–	–	1	
		1	1	–	2	
Hydrophthalmos	Lost	–	–	–	1	Chil. 1 Eyes 1
Ophthalmia Neonatorum	Lost	–	4*	2†	6	Chil. 22 Eyes 29
	Severe	4	2	2	8	
	Moderate	3‡	–	–	3	
	Slight, &c.	–	–	1	1	
	No note of degree	–	4	–	4	
* Of whom 1 has "severe" of L. also. † Of whom 1 has "severe" of R. also. ‡ Of whom 1 is doubtfully due to this cause or to Syphilitic Keratitis.		7	10	5	22	
Inherited Syphilis (Keratitis)	Lost	–	1	–	1	Chil. 37 Eyes 69
	Severe	1	–	–	1	
	Moderate	1	1	1*	3	
	Slight, &c.	1†	1†	–	2	
Pure – 20	No note either of degree of damage, or whether B., R., or L. are affected	–	–	–	12‡ counted as both eyes.	
Complicating other cases – 17	No note of degree	17§	–	1	18	
* Doubtfully due to this cause. † Doubtful. ‡ Of whom 4 are doubtful. § Of whom 8 are doubtful.		20	3	2	37	
		Counted as **A**, vide note to Table 1.			17	
		Uncomplicated – Chil. 20				Eyes 36
Small-pox	Lost	–	2*	–	2	Chil. 5 Eyes 7
	Severe	–	1†	–	1	
	Moderate	–	–	–	–	
	Slight, &c.	2‡	–	–	2	
* Of whom 1 has also "severe" and the other "slight" of L. † Doubtfully due to this cause. ‡ Of whom 1 is doubtful.		2	3	–	5	

	B.	R.	L.	Total from all Causes.	Total Children and Eyes.
Total Number of **B** Corneal damages in all the Schools (including Margate children belonging to the Schools = 119) – Boys, Girls, Infants	42	25	9	76	Chil. 59 Eyes 85
Subtract cases of mixed Syphilitic Keratitis and Pannus from Granular lids, counted as **A** cases	16	–	1	17	
CORRECT TOTALS	26	25	8	59	

TABLE 8.—CHILDREN WITH PARENTS (including "GOLIATH" BOYS belonging to each METROPOLITAN SCHOOL).

SCHOOL.	STATE OF EYELIDS.															
	BOYS.				GIRLS.				INFANTS.				TOTAL.			
	Col. 1.	Col. 2.	Col. 3.	Total.	Col. 1.	Col. 2.	Col. 3.	Total.	Col. 1.	Col. 2.	Col. 3.	Total.	Col. 1.	Col. 2.	Col. 3.	Total.
Sutton	76	159	184	–	60	187	73	–	64	92	68	–	–	–	–	–
Hanwell	23	89	84	–	18	97	79	–	19	83	122	–	–	–	–	–
Forest Gate	38	102	67	–	19	84	31	–	29	73	16	–	–	–	–	–
Islington	10	22	3	–	3	13	4	–	11	16	4	–	–	–	–	–
Mile End	11	27	5	–	8	21	7	–	13	19	2	–	–	–	–	–
Brentwood	6	18	16	–	4	8	3	–	3	3	4	–	–	–	–	–
Ashford	21	52	37	–	6	37	19	–	2	12	43	–	–	–	–	–
Southall	18	52	32	–	6	37	21	–	11	19	34	–	–	–	–	–
Anerley	Return incomplete.															
Leavesden	32	59	26	–	12	44	24	–	20	45	8	–	–	–	–	–
Battersea	Return incomplete.															
Norwood	13	27	18	–	6	16	49	–	8	10	32	–	–	–	–	–
Mitcham	14	31	25	–	11	27	41	–	11	16	39	–	–	–	–	–
Plashet	4	26	32	–	5	22	21	–	1	15	31	–	–	–	–	–
Leytonstone	15	26	25	–	7	17	16	–	17	34	18	–	–	–	–	–
Edmonton	1	10	43	–	6	17	22	–	3	12	37	–	–	–	–	–
Total	282	700	600	1582	170	627	410	1207	212	449	458	1119	664	1776	1468	3908
Per-centage uncorrected (*see* p. 87)	18·	–	38·	–	14·	–	34·	–	19·	–	41·	–	17·	–	37·5	–

TABLE 9.—ORPHAN and DESERTED (including "GOLIATH" BOYS belonging to each METROPOLITAN SCHOOL).

SCHOOL.	STATE OF EYELIDS.															
	BOYS.				GIRLS.				INFANTS.				TOTAL.			
	Col. 1.	Col. 2.	Col. 3.	Total.	Col. 1.	Col. 2.	Col. 3.	Total.	Col. 1.	Col. 2.	Col. 3.	Total.	Col. 1.	Col. 2.	Col. 3.	Total.
Sutton	38	91	116	–	33	106	84	–	22	35	27	–	–	–	–	–
Hanwell	27	123	75	–	15	86	76	–	6	49	70	–	–	–	–	–
Forest Gate	7	57	67	–	20	94	71	–	20	53	7	–	–	–	–	–
Islington	20	46	15	–	9	30	4	–	6	14	6	–	–	–	–	–
Mile End	7	29	13	–	4	17	11	–	3	2	1	–	–	–	–	–
Brentwood	14	40	52	–	6	34	35	–	3	13	10	–	–	–	–	–
Ashford	15	48	35	–	11	31	31	–	2	10	32	–	–	–	–	–
Southall	11	33	23	–	11	34	24	–	5	7	13	–	–	–	–	–
Anerley	Return incomplete.															
Leavesden	18	32	36	–	4	25	31	–	7	19	2	–	–	–	–	–
Battersea	No return.															
Norwood	7	37	28	–	11	32	49	–	3	1	5	–	–	–	–	–
Mitcham	10	51	68	–	5	32	52	–	2	9	27	–	–	–	–	–
Plashet	8	13	21	–	3	18	16	–	0	4	8	–	–	–	–	–
Leytonstone	11	39	45	–	7	32	30	–	13	8	25	–	–	–	–	–
Edmonton	2	7	72	–	7	22	32	–	4	9	16	–	–	–	–	–
Total	195	646	664	1505	146	593	546	1285	96	233	249	578	437	1488	1459	3384
Per-centage uncorrected (*see* p. 87)	13·	–	44·	–	11·5	–	42·5	–	16·6	–	43·	–	13·	–	43·	–

TABLE 10.—CHILDREN *not more than One Year* in SCHOOL (excluding Casuals); excluding Ashford, for which no return was made.

SCHOOL.	STATE OF EYELIDS.												TOTAL.
	BOYS.				GIRLS.				INFANTS.				
	Col. 1.	Col. 2.	Col. 3.	Total.	Col. 1.	Col. 2.	Col. 3.	Total.	Col. 1.	Col. 2.	Col. 3.	Total.	
Sutton -	32	54	71	157	40	75	14	129	56	61	38	155	441
Hanwell -	24	38	9	71	4	30	13	47	19	56	42	117	235
Forest Gate	21	58	12	91	15	58	27	100	20	49	10	79	270
Islington -	14	17	1	32	4	8	3	15	12	12	3	37	84
Mile End -	8	17	5	30	3	14	6	23	11	9	1	21	74
Brentwood	6	12	1	19	1	10	2	13	5	9	5	19	51
Mitcham -	17	22	29	68	8	18	13	39	13	21	32	66	173
Norwood -	7	14	6	27	9	16	9	34	8	6	11	25	86
Anerley -	19	43	1	63	14	26	4	44	22	36	2	60	167
Battersea -	5	6	3	14	1	4	0	5	0	4	8	12	30
Southall -	13	19	5	37	3	19	4	26	12	18	16	46	109
Edmonton -	3	7	14	24	3	5	6	14	3	11	19	33	71
Leytonstone	8	12	4	24	4	9	2	15	20	17	7	44	83
Plashet -	16	12	6	34	5	18	7	30	1	12	22	35	99
Leavesden -	17	33	5	55	10	10	0	20	16	27	1	44	119
Goliath -	23	11	0	34	–	–	–	–	–	–	–	–	34
Total -	231	377	173	781	126	322	111	559	220	350	218	788	2128
	Per cent. 29·5	Per cent. 48·2	Per cent. 22·1	Per cent. 100	Per cent. 22·5	Per cent. 57·5	Per cent. 19·8	Per cent. 100	Per cent. 27·8	Per cent. 44·3	Per cent. 27·6	Per cent. 100	
Corrected* -	35	43	22	100	28	52	20	100	33	39	28	100	

——	Col. 1.	Col. 2.	Col. 3.
Infants per cent. - - - - -	33	39	28
Average of Boys and Girls per cent. -	31·5	48	21

* This correction is made (as explained at p. 9. of the Report) because a certain proportion, which I estimate at 5 per cent., of all the children, although showing a slight degree of granular disease are for practical purposes healthy; the follicular enlargement has been present so long that the increased liability to ophthalmia which accompanies its earlier period has ceased.

TABLE 11.—CHILDREN *not more than One Month* in SCHOOL (excluding Casuals).

SCHOOL.	BOYS.				GIRLS.				INFANTS.				TOTAL.
	Col. 1.	Col. 2.	Col. 3.	Total.	Col. 1.	Col. 2.	Col. 3.	Total.	Col. 1.	Col. 2.	Col. 3.	Total.	
Sutton -	2	2	0	4	6	7	0	13	6	11	1	18	35
Hanwell -	7	15	1	23	1	6	0	7	14	19	2	35	65
Forest Gate	3	15	0	18	2	6	1	9	8	12	1	21	48
Islington -	2	1	0	3	2	0	0	2	1	0	0	1	6
Mile End -	4	5	0	9	0	4	0	4	2	0	0	2	15
Brentwood -	1	0	0	1	0	2	0	2	1	0	0	1	4
Ashford -	1	5	0	6	4	2	0	6	0	1	2	3	15
Southall -	4	0	0	4	1	1	0	2	4	3	0	7	13
Anerley -	12	11	0	23	6	3	1	10	8	20	1	29	62
Leavesden -	2	5	1	8	4	3	0	7	4	3	0	7	22
Battersea -	1	0	0	1	0	1	0	1	0	2	2	4	6
Norwood -	2	3	2	7	3	2	2	7	4	2	1	7	21
Mitcham -	2	2	0	4	0	3	0	3	5	5	0	10	17
Plashet -	2	1	0	3	3	2	0	5	0	3	0	3	11
Leytonstone	3	2	0	5	1	1	0	2	10	5	2	17	24
Edmonton -	–	–	–	0	0	0	1	1	2	3	1	6	7
Total -	48	67	4	119	33	43	5	81	69	88	13	171	371
	Per cent. 40·5	Per cent. 56·	Per cent. 3·3	Per cent. 100	Per cent. 41·	Per cent. 53·5	Per cent. 6·	Per cent. 100	Per cent. 40·6	Per cent. 51·7	Per cent. 7·6	Per cent. 100	
Corrected -	46	51	3	100	46	48	6	100	46	47	7	100	

———	Col. 1.	Col. 2.	Col. 3.
Infants per cent. - - - - -	46	47	7
Average of Boys and Girls per cent. -	46	50	4
Average - - - -	46	48·5	5·5

TABLE 12.—NUMBER and PER-CENTAGE of CHILDREN in EACH SCHOOL, and in ALL TOGETHER, *in Infirmary for all Causes* and *for Ophthalmia*, at date of Inspection (including Margate).

SCHOOL.	Total Number in Infirmary.	Number in Infirmary for Ophthalmia.	Number in School (including Margate).	Per-centage of Children in Infirmary.
Sutton - -	215	140	1,550	—
Hanwell - -	160	124	1,183	—
Forest Gate -	42	30	846	—
Islington -	26	6	246	—
Mile End -	24	2 or 3	201	—
Brentwood -	45	9	279	—
Ashford - -	31	12	453	—
Southall - -	20	11	395	—
Anerley - -	111*	86*	820	—
Leavesden -	30	11	445	—
Battersea -	18	6	159	—
Norwood - -	58	28	320	—
Mitcham - -	62	46	475	—
Plashet - -	23	15	259	—
Leytonstone -	26	11	392	—
Edmonton -	46†	40†	325	—
"Goliath" -	8	1	404	—
	‡ M.119+826=945 (p. c. 100)	‡ M.75+504=579 (p. c. 61·2)	8,798	For Ophthalmia - 6·5 For other causes - 4·1 In Infirmary for all causes - 10·7

* Excluding 56 Isolation school cases not on treatment; including only 48 Isolation school cases, viz., all under treatment, almost all of whom, and most at Margate, are slight, many extremely so.

† Including 11 "weak eye" boys isolated in school and under more or less treatment. All of these ought to have been in Infirmary, and were worse than most of the Anerley cases under treatment.

‡ "M" = Margate; the second total in each column gives the number in the Infirmaries of all the Schools excluding Margate; the third total in each column is the sum of the two first.

N.B.—The numbers above given were found afterwards not to be perfectly correct for the following schools, viz.:—Sutton, Hanwell, Forest Gate, Islington, Ashford, Southall, Leavesden, Plashet; the errors are too small to be of material importance.

The following Tables give the particulars for each School separately:

SUTTON. TABLE 13.—THE TOTAL NUMBER of CHILDREN EXAMINED, and the NUMBER in each CLASS (Boys, Girls, and Infants). The Per-centage and Number of each Class in each of the Ophthalmia columns 1, 2, 3 (and 4 included in column 3). The Per-centage and Number of each Class in each column that has suffered more or less from invaliding Ophthalmia. The Per-centage and Number showing Muco-purulent Discharge when inspected. Averages of these details for each Class and for the whole School. The figures marked "Col. 4 only" represent the number (not per-centage) of Children whose eyelids were scarred as the result of previous granular disease, but had become smooth and pale, *i.e.*, were *only* scarred and not also granular. The total number of these is very small, and does not affect the various per-centages to an appreciable extent.

(Including School, Infirmary, Probation Wards, and Margate.)

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.
BOYS, 8–15 - - - -	114	15·1	253	36·7	307	44·6	674 Col. 4 only, 9	-
Previous Ophthalmia -	19	2·7	130	19·	243	35·3	-	57·
No „ „ -	-	-	-	-	-	-	-	-
Showing Discharge -	2	·3	9	1·3	108	15·6	- 684	17·2
GIRLS, 8–15 - - -	94	16·9	296	53·4	163	29·8	553 Col. 4 only, 2	-
Previous Ophthalmia -	16	2·8	126	22·8	143	26·	-	51·5
No „ „ -	-	-	-	-	-	-	-	-
Showing Discharge -	0	0	5	·9	18	3·3	- 555	4·2
INFANTS, –7 - - -	86	27·6	128	41·2	97	31·1	311	-
Previous Ophthalmia -	19	6·1	61	19·8	81	26·2	-	52·
No „ „ -	-	-	-	-	-	-	-	-
Showing Discharge -	0	0	4	1·2	54	17·5	- 311	18·7
Average per-centage of all Children in each column	-	19·9	-	43·7	-	35·7	1550	-
Average per-centage of all Children who have had Ophthalmia - - - - -								53·5
„ „ who had Discharge when inspected - - -								13·5

SUTTON. TABLE 14.—A CORNEAL DAMAGES.

		A			Total of each Class.	TOTAL.
		B.	R.	L.		
LOST	Boys	–	–	–	–	
	Girls	–	7*	1†	8	Child^{n} 14
	Infants	1‡	4§	1	6	Eyes 15
		1	11	2	14	
SEVERE	Boys	1	1	3*	5	Child^{n} 13
	Girls	3	1†	3	7	Eyes 16
	Infants	–	–	1	1	
		4	2	6	13	
MODERATE	Boys	9	2	2	13	Child^{n} 28
	Girls	6	2*	2†	10	Eyes 46
	Infants	3	2	–	5	
		18	6	4	28	
SLIGHT	Boys	9	9	7	25	Child^{n} 74
	Girls	16	1	11	28	Eyes 105
	Infants	6	7	8	21	
		31	17	26	74	
VERY SLIGHT	Boys	1	3	3	7	Child^{n} 9
	Girls	–	–	–	–	Eyes 10
	Infants	–	–	2	2	
		1	3	5	9	
NONE	Boys	–	–	1	1	Child^{n} 7
	Girls	–	2	1	3	Eyes 8
	Infants	1	1	1	3	
		1	3	3	7	
TOTAL		–	–	–	–	Child^{n} 145 Eyes 200

* 2 of whom have "moderate" and 2 "slight" of L. also. 1 occurred out of doors. 1 slightly remediable.
† 1 of whom has "very slight" of R. also.
‡ L. probably partly remediable by operation.
§ 1 of whom has "slight" of L. also. 3 of them perhaps remediable by operation. 1 occurred out of doors.

* Of whom 1 has also "slight" and 1 "very slight" of R.
† Also "moderate" of L.

* Of whom 1 has also "slight" of L.
† Of whom 1 has also "slight" of R.

HANWELL. TABLE 15.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
BOYS, 7–15	53	12·	215	50·	164	36·	432	–
Previous Ophthalmia	20	4·4	148	33·7	161	35·4	Col. 4 only, 7	73·6
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	1	·2	13	3·	– 439	3·2
GIRLS, 7–15	34	8·6	185	47·1	161	41·	380	–
Previous Ophthalmia	15	3·8	141	36·	162	41·3	Col. 4 only, 12	81·1
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	2	·5	32	8·1	– 392	8·6
INFANTS, –7	25	7·1	132	37·5	192	54·5	349	–
Previous Ophthalmia	8	2·2	103	29·2	188	53·1	Col. 4 only, 3	84·5
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	15	4·2	61	17·3	– 352	21·5
Average per-centage of all Children in each column	–	9·2	–	44·9	–	45·6	1183	–
Average per-centage of all the Children who have had Ophthalmia								79·7
„ „ who had Discharge when inspected								11·1

HANWELL. TABLE 16.—A CORNEAL DAMAGES.

		A			Total of each Class.	TOTAL.
		B.	R.	L.		
LOST	Boys	–	1*	1†	2	Child^{n} 8
	Girls	–	3‡	–	3	Eyes 8
	Infants	–	2§	1‖	3	
* Also "slight" of L. † Also "severe" of R. ‡ Of whom 2 have "severe" of L. also. § Of whom 1 has "severe" of L. The other has "moderate" of L., and both its eyes were so on admission. ‖ Occurred at Mitcham.		–	6	2	8	
SEVERE	Boys	3	1*	–	4	Child^{n} 10
	Girls	3	–	1†	4	Eyes 18
	Infants	2	–	–	2	
* Also "moderate" of L. † Also "moderate" of R.		8	1	1	10	
MODERATE	Boys	11	1	1	13	Child^{n} 41
	Girls	13	–	1	14	Eyes 74
	Infants	9	3	2	14	
		33	4	4	41	
SLIGHT	Boys	9	6	2	17	Child^{n} 74
	Girls	17	12	7	36	Eyes 108
	Infants	8	5	8	21	
		34	23	17	74	
VERY SLIGHT	Boys	1	2	–	3	Child^{n} 11
	Girls	1	–	–	1	Eyes 14
	Infants	1	2	4	7	
		3	4	4	11	
NONE	Boys	–	–	2	2	Child^{n} 4
	Girls	–	–	–	–	Eyes 4
	Infants	–	–	2	2	
Omitted 2, wrongly numbered in note book. Neither are bad.		–	–	4	4	
TOTAL		–	–	–	–	Child^{n} 148 Eyes 228

FOREST GATE. TABLE 17.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
BOYS, 7–15	45	14·01	159	49·5	112	34·5	321	–
Previous Ophthalmia	12	3·7	85	26·4	108	33·6	Col.4 only, 1	63·7
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	5	1·5	27	8·4	–	9·9
							322	
GIRLS, 7–15	39	12·1	178	55·4	102	31·7	319	–
Previous Ophthalmia	19	5·9	83	25·8	86	26·7	Col.4 only, 2	58·4
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	3	·9	14	4·6	–	5·5
							321	
INFANTS, 2–7	49	24·1	126	62·	23	11·3	203	–
Previous Ophthalmia	7	3·4	21	10·9	16	7·8	–	22·1
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	5	2·4	7	3·4	–	5·8
Average per-centage of all Children in each column	–	16·7	–	55·6	–	25·8	846	–
Average per-centage of all the Children that have had Ophthalmia								48·06
„ „ that had discharge when inspected								7·06

FOREST GATE. TABLE 18.—A CORNEAL DAMAGES.

	A			Total of each Class.	TOTAL.
	B.	R.	L.		
LOST — Boys	–	–	1*	1	Child^{n} 1
Girls	–	–	–	–	Eyes 1
Infants	–	–	–	–	
* Occurred at æt. 4 years, at home. Has also "slight" of R.	–	–	1	1	
SEVERE — Boys	2*	–	–	2	Child^{n} 4
Girls	–	1	–	1	Eyes 7
Infants	1	–	–	1	
* Of which 1 occurred at home.	3	1	–	4	
MODERATE — Boys	5	1	1	7	Child^{n} 27
Girls	9	3	2	14	Eyes 46
Infants	5	1	–	6	
	19	5	3	27	
SLIGHT — Boys	3	4	3	10	Child^{n} 31
Girls	7	2	3	12	Eyes 44
Infants	3	2	4	9	
	13	8	10	31	
VERY SLIGHT — Boys	–	1	3	4	Child^{n} 16
Girls	4	2	3	9	Eyes 21
Infsnts	1	1	1	3	
	5	4	7	16	
NONE — Boys	–	1	–	1	Child^{n} 2
Girls	–	–	–	–	Eyes 2
Infants	–	–	1	1	
	–	1	1	2	
TOTAL	–	–	–	–	Child^{n} 81 Eyes 121

ISLINGTON. TABLE 19.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.
BOYS, 7–15	31	26·5	68	58·1	18	14·5	117	–
Previous Ophthalmia	3	2·5	14	11·9	18	14·5	–	28·9
No. „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	2	1·7	–	1·7
GIRLS, 7–15	12	17·3	43	62·3	13	18·8	69	–
Previous Ophthalmia	4	5·8	13	18·8	11	15·9	–	40·5
No. „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	0	–	–	0
INFANTS, 3–7	17	29·3	30	51·7	10	17·2	58	–
Previous Ophthalmia	1	1·7	8	13·8	7	13·8	–	29·3
No. „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	1	1·7	5	8·6	–	10·3
Average per-centage of all Children in each column	–	24·4	–	57·3	–	16·8	246	–
Average per-centage of all the Children that have had Ophthalmia								32·9
„ „ who had Discharge when inspected								4·0

ISLINGTON. TABLE 20.—A CORNEAL DAMAGES.

	A			Total of each Class.	TOTAL.
	B.	R.	L.		
LOST — Boys	–	–	–	–	Child^n 1
Girls	1*	–	–	1	Eyes 2
Infants	–	–	–	–	
* Can see shadows and manage to find her way about. Complicated by severe Syphilitic Keratitis. Will scarcely improve.	1	–	–	1	
SEVERE — Boys	1*	–	–	1	Child^n 1
Girls	–	–	–	–	Eyes 2
Infants	–	–	–	–	
* Returned from "Goliath" as unfit for service.	1	–	–	1	
MODERATE — Boys	–	–	1	1	Child^n 4
Girls	1	–	1	2	Eyes 5
Infants	–	1	–	1	
	1	1	2	4	
SLIGHT — Boys	1	–	1	2	Child^n 3
Girls	1	–	–	1	Eyes 5
Infants	–	–	–	–	
	2	–	1	3	
VERY SLIGHT — Boys	–	–	1	1	Child^n 2
Girls	–	–	–	–	Eyes 2
Infants	–	–	1	1	
	–	–	2	2	
NONE. TOTAL	–	–	–	–	Child^n 11 Eyes 16

MILE END. TABLE 21.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
BOYS, 7–15	18	19·5	56	60·8	18	19·5	92	–
Previous Ophthalmia	3	3·2	20	21·7	13	14·1	–	39·
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	0	–	–	0
GIRLS, 7–15	12	17·3	38	55·07	18	26·08	68	–
Previous Ophthalmia	2	2·9	3	4·3	16	23·1	Col.4 only, 1	30·3
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	1	1·4	2	2·9	–	4·3
							69	
INFANTS, 2–7	16	40·	21	52·5	3	7·5	40	–
Previous Ophthalmia	0	–	3	7·5	1	2·5	–	10·
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	1	2·5	1	2·5	–	5·
Average per-centage of all Children in each column	–	25·6	–	56·1	–	17·6	201	–
Average per-centage of all the Children that have had Ophthalmia								26·4
„ „ „ that had Discharge when inspected								3·1

MILE END. TABLE 22.—A CORNEAL DAMAGES.

		A			Total of each Class.	TOTAL,
		B.	R.	L.		
LOST	Boys	–	–	1	1	
	Girls	–	1*	–	1	Child^n 2
	Infants	–	–	–	–	Eyes 2
		–	1	1	2	
* "Severe" of L. also.						
SEVERE.						
MODERATE	Boys	1	1	–	2	
	Girls	1	–	–	1	Child^n 5
	Infants	1	–	1	2	Eyes 8
		3	1	1	5	
SLIGHT	Boys	–	–	1	1	
	Girls	2	1	1	4	Child^n 7
	Infants	–	2	–	2	Eyes 9
		2	3	2	7	
VERY SLIGHT.						
NONE.						
	TOTAL	–	–	–	–	Child^n 14 Eyes 19

BRENTWOOD. TABLE 23.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
BOYS, 7–15	20	12·8	58	37·8	70	44·8	148	–
Previous Ophthalmia	7	4·6	21	13·9	53	36·4	Col. 4 only, 3	54·9
No " "	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	12	7·9	–	7·9
							151	
GIRLS, 7–15	10	10·9	42	46·1	38	41·7	90	–
Previous Ophthalmia	5	5·4	23	25·2	36	39·5	Col. 4 only, 1	70·1
No " "	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	8	5·3	–	5·3
							91	
INFANTS, 2–7	6	16·2	16	43·2	14	37·8	36	–
Previous Ophthalmia	1	2·7	5	13·5	9	24·3	Col. 4 only, 1	40·3
No " "	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	4	2·6	–	2·6
							37	
Average per-centage of all Children in each column	–	13·3	–	42·3	–	43·4	279	–
Average per-centage of all Children that have had Ophthalmia								55·1
" " that had Discharge when inspected								5·2

BRENTWOOD. TABLE 24.—A CORNEAL DAMAGES.

		A			Total of each Class.	TOTAL.
		B.	R.	L.		
LOST	Boys	–	1*	–	1	Child^n 1
	Girls	–	–	–	–	Eyes 1
	Infants	–	–	–	–	
* Also "moderate" of L.		–	1	–	1	
SEVERE.						
MODERATE	Boys	1	–	–	1	Child^n 7
	Girls	4	–	–	4	Eyes 14
	Infants	2	–	–	2	
		7	–	–	7	
SLIGHT	Boys	3	3	2	8	Child^n 20
	Girls	4	1	4	9	Eyes 29
	Infants	2	–	1	3	
		9	4	7	20	
VERY SLIGHT	Boys	–	2	3	5	Child^n 6
	Girls	1	–	–	1	Eyes 7
	Infants	–	–	–	–	
		1	2	3	6	
NONE	Boys	–	–	–	–	Child^n 1
	Girls	–	–	1	1	Eyes 1
	Infants	–	–	–	–	
		–	–	1	1	
	TOTAL	–	–	–	–	Child^n 35 Eyes 52

ASHFORD. TABLE 25.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
BOYS, 7–15	35	16·	102	46·3	71	32·3	208	–
Previous Ophthalmia	14	6·3	63	28·6	63	28·6	Col. 4 only, 6	66·2
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	1	·4	9	4·4	–	4·4
							214	
GIRLS, 7–15	17	12·2	69	49·6	51	36·5	137	–
Previous Ophthalmia	4	2·8	37	26·6	50	36·	Col. 4 only, 1	65·2
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	6	4·4	–	4·4
							138	
INFANTS, 2–7	4	4·	22	22·	75	75·	101	–
Previous Ophthalmia	0	–	6	6·	57	57·	–	63·
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	6	6·	43	43·	–	49·
Average per-centage of all Children in each column	–	10·7	–	39·3	–	49·1	453	–
Average per-centage of all the Children that have had Ophthalmia								65·1
„ „ that had discharge when inspected								19·2

ASHFORD. TABLE 26.—A CORNEAL DAMAGES.

		A			Total of each Class.	TOTAL.
		B.	R.	L.		
LOST	Boys	–	1	1*	2	Child^n 3
	Girls	–	1†	–	1	Eyes 3
	Infants	–	–	–	–	
* And "moderate" of R.						
† And "severe" of L.		–	2	1	3	
SEVERE	Boys	1	–	–	1	Child^n 2
	Girls	1	–	–	1	Eyes 4
	Infants	–	–	–	–	
		2	–	–	2	
MODERATE	Boys	2	–	–	2	Child^n 13
	Girls	5	3	–	8	Eyes 22
	Infants	2	1	–	3	
		9	4	–	13	
SLIGHT	Boys	4	6	1	11	Child^n 22
	Girls	4	2	–	6	Eyes 32
	Infants	2	1	2	5	
		10	9	3	22	
VERY SLIGHT	Boys	–	–	–	–	Child^n 1
	Girls	–	–	–	–	Eyes 1
	Infants	–	1	–	1	
		–	1	–	1	
NONE	Boys	–	1	–	1	Child^n 1
	Girls	–	–	–	–	Eyes 1
	Infants	–	–	–	–	
		–	1	–	1	
TOTAL		–	–	–	–	Child^n 42 Eyes 63

SOUTHALL. TABLE 27.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Per centage.	Number.	Per centage.	Number.	Per centage.	Number.	Per centage.
BOYS, 7–15	29	16·9	85	49·7	55	32·1	171	–
Previous Ophthalmia	8	4·6	45	26·3	50	29·2	–	60·1
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	1	·5	24	14	–	14·5
GIRLS, 7–15	17	12·7	71	53·3	45	33·8	133	–
Previous Ophthalmia	6	4·5	42	31·5	42	31·5	Col. 4 only, 2	67·5
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	5	3·7	–	3·7
							135	
INFANTS, 2–7	11	14·2	19	24·6	47	61·	77	–
(All Infants)	–	18·	–	29·2	–	52·8	–	–
Previous Ophthalmia	3	3·8	10	12·9	44	57·	–	73·7
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	5	6·4	33	42·8	–	49·2
							(All the infants)	43·8
INFANTS, 9 mos.–2 yrs.	5	41·6	7	58·3	0	–	12	–
Previous Ophthalmia	0	–	2	16·6	–	–	–	16·6
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	1	8·3	–	–	–	8·3
Average per-centage of all Children in each column	–	21·3	–	46·4	–	31·7	–	–
Same, omitting Infants 9 mos.–2 yrs.	–	14·6	–	42·5	–	42·3	395	–
Average per-centage of all Children that has had Ophthalmia								54·4
„ „ that had Discharge when inspected								18·9
The same averages, omitting Infants 9 months–2 years								67·1 22·4

SOUTHALL. TABLE 28.—A CORNEAL DAMAGES.

	A			Total of each Class.	TOTAL.
	B.	R.	L.		
LOST.					
SEVERE — Boys	–	–	–	–	Child^{n} 3
Girls	2	–	1*	3	Eyes 5
Infants	–	–	–	–	
* Also "slight" of R.	2	–	1	3	
MODERATE — Boys	2	2	3	7	Child^{n} 11
Girls	1	–	2	3	Eyes 14
Infants	–	–	1	1	
	3	2	6	11	
SLIGHT — Boys	–	–	–	–	Child^{n} 6
Girls	4	2	–	6	Eyes 10
Infants	–	–	–	–	
	4	2	–	6	
VERY SLIGHT — Boys	–	–	–	–	Child^{n} 1
Girls	–	–	–	–	Eyes 1
Infants	–	–	1	1	
	–	–	1	1	
NONE.					
TOTAL	–	–	–	–	Child^{n} 21 Eyes 30

ANERLEY. TABLE 29.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
BOYS, 7–15	51	12·7	183	45·7	158	39·5	392	–
Previous Ophthalmia	13	3·2	75	18·6	152	38·	Col. 4 only, 8	61·9
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	1	·2	14	3·5	–	3·7
							400	
GIRLS, 7–15	37	15·1	101	41·4	101	41·4	239	–
Previous Ophthalmia	9	3·6	39	16·	87	35·6	Col. 4 only, 5	55·2
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	12	4·9	–	4·9
							244	
INFANTS, 3–7	36	20·4	85	48·3	55	31·2	176	–
Previous Ophthalmia	3	1·7	18	10·2	45	25·5	–	37·4
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	2	1·1	10	5·6	–	6·7
Average per-centage of all Children in each column	–	16·1	–	45·1	–	38·7	820	–
Average per-centage of all Children that has had Ophthalmia								51·5
„ „ that had Discharge when inspected								5·1

ANERLEY. TABLE 30.—A CORNEAL DAMAGES.

		A			Total of each Class.	TOTAL.
		B.	R.	L.		
LOST	Boys	–	–	–	–	Childn 1
	Girls	–	1	–	1	Eyes 1
	Infants	–	–	–	–	
		–	1	–	1	
SEVERE	Boys	1	–	–	1	Childn 2
	Girls	1	–	–	1	Eyes 4
	Infants	–	–	–	–	
		2	–	–	2	
MODERATE	Boys	4	2	1	7	Childn 15
	Girls	2	3	–	5	Eyes 22
	Infants	1	1	1	3	
		7	6	2	15	
SLIGHT	Boys	4	5	2	11	Childn 25
	Girls	5	4*	4	13	Eyes 34
	Infants	–	1	–	1	
* One also "very slight" of L.		9	10	6	25	
VERY SLIGHT	Boys	3	3	2	8	Childn 11
	Girls	1	–	1	2	Eyes 15
	Infants	–	1	–	1	
		4	4	3	11	
NONE	Boys	–	–	1	1	Childn 1
	Girls	–	–	–	–	Eyes 1
	Infants	–	–	–	–	
		–	–	1	1	
TOTAL		–	–	–	–	Childn 55 Eyes 77

LEAVESDEN. TABLE 31.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
BOYS, 7–15	50	24·6	91	44·5	62	30·5	203	–
Previous Ophthalmia	13	6·4	40	19·7	56	27·5	–	53·6
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	0	2	·9	6	2·9	–	3·8
GIRLS, 7–15	16	11·3	69	49·8	56	39·2	140	–
Previous Ophthalmia	3	2·1	39	27·8	48	34·4	–	64·3
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	0	1	·7	6	4·2	–	4·9
INFANTS, 2–7	27	26·2	64	62·1	10	9·7	101	–
Previous Ophthalmia	0	–	14	13·5	4	3·8	–	17·3
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	2	1·9	2	1·9	–	3·8
Average per-centage of all Children in each column	–	20·7	–	52·1	–	26·5	445	–
Average per-centage of all Children who have had Ophthalmia								45·
„ „ who had Discharge when inspected								4·2

LEAVESDEN. TABLE 32.—A CORNEAL DAMAGES.

		A			Total of each Class.	TOTAL.
		B.	R.	L.		
LOST.						
SEVERE	Boys	–	–	–	–	Childn 2
	Girls	1	1*	–	2	Eyes 3
	Infants	–	–	–	–	
* Also "moderate" of L.		1	1	–	2	
MODERATE	Boys	1	–	–	1	Childn 11
	Girls	6	4	..	10	Eyes 18
	Infants	–	–	–	–	
		7	4	–	11	
SLIGHT	Boys	2	1	2	5	Childn 15
	Girls	1	5	1	7	Eyes 19
	Infants	1	1	1	3	
		4	7	4	15	
VERY SLIGHT	Boys	–	–	1	1	Childn 1
	Girls	–	–	–	–	Eyes 1
	Infants	–	–	–	–	
		–	–	1	1	
NONE	Boys	–	–	1	1	Childn 2
	Girls	–	–	1	1	Eyes 2
	Infants	–	–	–	–	
		–	–	2	2	
TOTAL		–	–	–	–	Childn 31 Eyes 43

BATTERSEA. TABLE 33.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
BOYS, 7–15	9	10·9	29	35·6	43	52·4	81	–
Previous Ophthalmia	2	2·4	16	19·5	36	44·	Col.4 only, 1	65·8
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	1	1·3	–	1·3
							82	
GIRLS, 7–15	3	7·1	14	33·3	26	59·5	43	–
Previous Ophthalmia	1	2·3	4	9·5	21	50·	–	61·8
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	0	–	–	0
INFANTS, 3–7	1	2·9	6	17·6	26	76·4	33	–
Previous Ophthalmia	0	–	1	2·9	26	76·4	Col.4 only, 1	79·3
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	6	17·6	–	17·6
							34	
Average per-centage of all Children in each column	–	6·96	–	28·8	–	63·1	159	–
Average per-centage of all the Children who have had Ophthalmia								69·
„ „ who had Discharge when inspected								6·3

BATTERSEA. TABLE 34.—A CORNEAL DAMAGES.

——	A			Total of each Class.	TOTAL.
	B.	R.	L.		
LOST.					
SEVERE — Boys	–	1	2	3	Childn 3
Girls	–	–	–	–	Eyes 3
Infants	–	–	–	–	
	–	1	2	3	
MODERATE — Boys	1	1*	–	2	Childn 9
Girls	2	2	1	5	Eyes 13
Infants	1	1	–	2	
	4	4	1	9	
SLIGHT — Boys	–	2	–	2	
Girls	–	–	1	1	Childn 5
Infants	1	–	1	2	Eyes 6
	1	2	2	5	
VERY SLIGHT.					
NONE.					
TOTAL	–	–	–	–	Childn 17 Eyes 22

* Doubtful whether occurred in school.

NORWOOD. TABLE 35.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.
BOYS, 7–15 - - - -	20	15·1	64	48·4	46	34·8	130	–
Previous Ophthalmia -	6	4·7	14	11·	36	28·3	Col. 4 only, 2	44·
No „ „ -	–	–	–	–	–	–	–	–
Showing Discharge -	0	–	3	2·3	6	4·7	–	7·
							132	
GIRLS, 7–15 - - -	17	13·07	48	36·9	65	50·	130	–
Previous Ophthalmia -	5	3·8	14	10·7	55	42·3	–	56·8
No „ „ -	–	–	–	–	–	–	–	–
Showing Discharge -	0	–	1	·76	13	10·	–	10·7
INFANTS, 1½–7 - - -	11	18·3	11	18·3	37	61·6	59	–
Previous Ophthalmia -	0	–	1	1·6	32	53·3	–	54·9
No „ „ -	–	–	–	–	–	–	–	–
Showing Discharge -	0	–	1	1·6	19	31·6	–	33·2
Average per-centage of all Children in each column	–	15·45	–	34·5	–	48·8	321	–
Average per-centage of all the Children that have had Ophthalmia - - - - -								53·1
„ „ that had Discharge when inspected - - -								16·9

NORWOOD. TABLE 36.—A CORNEAL DAMAGES.

	A			Total of each Class.	TOTAL.
	B.	R.	L.		
LOST - - - Boys - - - -	–	–	–	–	Child^n 1
Girls - - - -	–	–	–	–	Eyes 1
Infants - - - -	–	–	1*	1	
* Also has "severe" of R.	–	–	1	1	
SEVERE - - - Boys - - - -	3*	2	–	5	Child^n 8
Girls - - - -	2	–	1†	3	Eyes 13
Infants - - - -	–	–	–	–	
* Said to have eyes thus on admission. † And "slight" of R.	5	2	1	8	
MODERATE - - Boys - - - -	2	–	–	2	Child^n 9
Girls - - - -	1	–	–	1	Eyes 14
Infants - - - -	2	–	4	6	
	5	–	4	9	
SLIGHT - - - Boys - - - -	1	2	1	4	Child^n 7
Girls - - - -	–	–	3	3	Eyes 8
Infants - - - -	–	–	–	–	
	1	2	4	7	
VERY SLIGHT - - Boys - - - -	–	1	–	1	Child^n 3
Girls - - - -	2	–	–	2	Eyes 5
Infants - - - -	–	–	–	–	
	2	1	–	3	
NONE.					
TOTAL - - - -	–	–	–	–	Child^n 28 Eyes 41

MITCHAM. TABLE 37.– *See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.
BOYS, 7–15	24	11·8	82	40·6	96	47·5	202	–
Previous Ophthalmia	6	3·	55	27·2	92	45·5	–	72·7
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	8	3·8*	15	7·4*	–	25·*
GIRLS, 7–15	16	9·5	59	35·3	94	55·6	168	–
Previous Ophthalmia	5	3·	31	17·9	90	53·8	–	74·7
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	2	1·1	29	17·2	–	18·3
INFANTS, 2–7	13	12·2	25	24·	69	65·	107	–
Previous Ophthalmia	2	1·8	8	7·7	67	62·1	–	71·7
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	4	3·8	358	35·8	–	39·5
Average per-centage of all Children in each column	–	11·2	–	33·6	–	56·	477	–
Average per-centage of all Children who have had Ophthalmia								72·9
„ „ who had Discharge when inspected								27·9

* *Per-centage of Boys showing discharge.*—The actual per-centage of boys with discharge is not fairly represented by the sum of 4·02 + 7·5 = 11·52. This represents only those *in the Infirmary* who had discharge. A large number of boys in the School had been treated by caustic about two hours before the inspection and this had produced temporary discharge in almost all, so that an accurate account of the matter was out of the question. *The per-centage given in the last column* (25·) *is estimated from the corresponding per-centage in the Girls and Infants, to whom no caustic had been applied.*

MITCHAM. TABLE 38.—A CORNEAL DAMAGES.

	A			Total of each Class.	TOTAL.
	B.	R.	L.		
LOST — Boys	–	–	–	–	Child^n 1
Girls	–	–	–	–	Eyes 1
Infants	–	–	1	1	
	–	–	1	1	
SEVERE — Boys	1	–	1*	2	Child^n 6
Girls	1	2	–	3	Eyes 8
Infants	–	–	1	1	
* And "slight" of R.	2	2	2	6	
MODERATE — Boys	3	–	–	3	Child^n 11
Girls	1	1	1	3	Eyes 17
Infants	2	1	2*	5	
* 1 of whom has "slight" of R.	6	2	3	11	
SLIGHT — Boys	2	3	4	9	Child^n 18
Girls	2	3	–	5	Eyes 23
Infants	1	1	2	4	
	5	7	6	18	
VERY SLIGHT — Boys	1	–	–	1	Child^n 5
Girls	–	–	2	2	Eyes 6
Infants	–	1	1	2	
	1	1	3	5	
NONE — Boys	–	–	–	–	Child^n 2
Girls	2	–	–	2	Eyes 4
Infants	–	–	–	–	
	2	–	–	2	
TOTAL	–	–	–	–	Child^n 43 Eyes 59

PLASHET. TABLE 39.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
BOYS, 7–15	22	19·1	39	33·9	53	46·08	114	–
Previous Ophthalmia	6	5·2	21	18·2	47	40·8	Col.4 only,1	64·2
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	4	3·4	–	3·4
							115	
GIRLS, 7–15	8	9·1	40	47·05	37	43·5	85	–
Previous Ophthalmia	3	3·5	19	22·3	33	38·8	–	64·6
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	3	3·5	–	3·5
INFANTS, 1½–7	1	1·6	19	32·2	39	66·1	59	–
Previous Ophthalmia	0	–	4	6·7	27	45·7	–	52·4
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	3	5·08	16	27·1	–	32·18
Average per-centage of all Children in each column	–	9·9	–	37·7	–	51·89	259	–
Average per-centage of all Children who have had Ophthalmia								60·1
„ „ who had Discharge when inspected								13·

PLASHET. TABLE 40.—A CORNEAL DAMAGES.

	A			Total of each Class.	TOTAL.
	B.	R.	L.		
LOST — Boys	–	–	1*	1	Child^n 4
Girls	–	1	1	2	Eyes 4
Infants	–	–	1	1	
* And "severe" of R.	–	1	3	4	
SEVERE — Boys	1	–	–	1	Child^n 4
Girls	1	1	–	2	Eyes 6
Infants	–	1	–	1	
	2	2	–	4	
MODERATE — Boys	2	–	1	3	Child^n 3
Girls	–	–	–	–	Eyes 5
Infants	–	–	–	–	
	2	–	1	3	
SLIGHT — Boys	2	–	2	4	Child^n 11
Girls	5	–	1	6	Eyes 18
Infants	–	–	1	1	
	7	–	4	11	
VERY SLIGHT — Boys	–	–	–	–	Child^n 1
Girls	–	–	–	–	Eyes 1
Infants	–	–	1	1	
	–	–	1	1	
NONE.					
TOTAL	–	–	–	–	Child^n 23 Eyes 34

LEYTONSTONE. TABLE 41.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
BOYS, 7–15	26	16·04	65	40·1	71	43·2	162	–
Previous Ophthalmia	8	4·9	37	22·8	62	37·6	–	65·3
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	1	·6	8	4·9	–	5·5
GIRLS, 7–15	16	14·1	49	43·3	47	41·5	112	–
Previous Ophthalmia	4	3·5	27	23·8	44	38·9	Col. 4 only, 1	66·2
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	6	5·5	–	5·5
							113	
INFANTS, 2–7	30	25·6	42	35·9	45	38·4	117	–
Previous Ophthalmia	5	4·2	18	15·3	43	36·6	–	56·2
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	6	5·2	–	5·2
Average per-centage of all Children in each column	–	18·3	–	39·7	–	41·	392	–
Average per-centage of all the Children that have had Ophthalmia								62·6
„ „ that had Discharge when inspected								5·4

LEYTONSTONE. TABLE 42.—A CORNEAL DAMAGES.

	A			Total of each Class.	TOTAL.
	B.	R.	L.		
LOST — Boys	–	1*	–	1	Child^n 5
Girls	–	1†	2	3	Eyes 5
Infants	–	1‡	–	1	
* And "severe" of L.					
† And "moderate" of L.	–	3	2	5	
‡ And "moderate" of L.					
SEVERE — Boys	–	–	–	–	Child^n 2
Girls	2	–	–	2	Eyes 4
Infants	–	–	–	–	
	2	–	–	2	
MODERATE — Boys	3	2	–	5	Child^n 17
Girls	4	3*	2	9	Eyes 26
Infants	2	1	–	3	
* Of whom 1 probably occurred at home.					
	9	6	2	17	
SLIGHT — Boys	2	3	–	5	Child^n 16
Girls	3	2	–	5	Eyes 21
Infants	–	5	1	6	
	5	10	1	16	
VERY SLIGHT — Boys	–	–	–	–	Child^n 4
Girls	1	1	–	2	Eyes 6
Infants	1	–	1	2	
	2	1	1	4	
NONE.					
TOTAL	–	–	–	–	Child^n 44 Eyes 62

EDMONTON. TABLE 43.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
BOYS, 7–15	2	1·4	17	12·5	116	84·5	137	–
Previous Ophthalmia	0	–	12	8·8	112	81·6	–	90·4
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	1	·7	26	19·1	–	19·8
GIRLS, 7–15	13	12·1	39	36·4	54	50·4	107	–
Previous Ophthalmia	3	2·8	25	23·3	50	46·7	–	72·8
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	0	–	5	4·6	–	4·6
INFANTS, 2–7	7	8·6	21	24·6	53	65·4	81	–
Previous Ophthalmia	2	2·4	12	14·8	43	53·08	–	70·28
No „ „	–	–	–	–	–	–	–	–
Showing Discharge	0	–	2	2·4	17	20·9	–	23·3
Average per-centage of all Children in each column	–	7·3	–	24·5	–	66·7	325	–
Average per-centage of all Children that have had Ophthalmia								77·8
„ „ that had Discharge when inspected								15·9

EDMONTON. TABLE 44.—A CORNEAL DAMAGES.

	A			Total of each Class.	TOTAL.
	B.	R.	L.		
LOST — Boys	–	–	–	–	
Girls	–	1*	1†	2	Child^{n} 2
Infants	–	–	–	–	Eyes 2
* Has also "severe" of L. Occurred at Hanwell.	–	1	1	2	
† Occurred at Hanwell.					
SEVERE — Boys	–	2*	–	2	
Girls	1	–	–	1	Child^{n} 3
Infants	–	–	–	–	Eyes 4
* Of whom both "slight" of L. also.	1	2	–	3	
MODERATE — Boys	6	–	–	6	
Girls	3	–	1	4	Child^{n} 15
Infants	4	–	1	5	Eyes 28
	13	–	2	15	
SLIGHT — Boys	7	2	3	12	
Girls	–	2	4	6	Child^{n} 21
Infants	–	3	–	3	Eyes 28
	7	7	7	21	
VERY SLIGHT — Boys	–	3	–	3	
Girls	1	–	–	1	Child^{n} 5
Infants	–	1	–	1	Eyes 6
	1	4	–	5	
NONE — Boys	1	–	–	1	
Girls	–	–	–	–	Child^{n} 1
Infants	–	–	–	–	Eyes 2
	1	–	–	1	
TOTAL	–	–	–	–	Child^{n} 47 Eyes 70

"GOLIATH." TABLE 45.—*See* Heading to Table 13.

CLASS.	Column 1.		Column 2.		Column 3.		Total examined in each Class.	
	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.	Number.	Percentage.
BOYS, 9 or 10-16 - - -	74	18·3	185	45·79	143	35·4	402	–
Previous Ophthalmia -	23	5·6	102	25·2	121	29·9	Col.4 only,2	60·7
No „ „ -	–	–	–	–	–	–	–	–
Showing Discharge -	0	–	1	·24	16	3·9	– 404	4·14
Average per-centage of the Children in each column	–	18·3	–	45·7	–	35·4	404	–
Average per-centage of the Children that have had Ophthalmia - - - - -								60·7
„ „ that had Discharge when inspected - - -								4·14

"GOLIATH." TABLE 46.—A CORNEAL DAMAGES.

———	A			Total of each Class.	TOTAL.
	B.	R.	L.		
LOST.					
SEVERE - - - Boys - - - - -	–	2*	–	2	Childn 2 Eyes 2
* Of whom 1 has also "severe" of L. Neither occurred on the ship.					
MODERATE - - Boys - - - - -	1	2	–	3	Childn 3 Eyes 4
SLIGHT - - - Boys - - - - -	–	2	1	3	Childn 3 Eyes 3
VERY SLIGHT - - Boys - - - - -	1	–	1	2	Childn 2 Eyes 3
NONE.					
TOTAL - - - -	–	–	–	–	Childn 10 Eyes 12

MARGATE. TABLE 47.—*See* Heading to Table 1

[This Table includes all the Children at Margate who belong to
Schools treated, for the present purpose, as a single school. T
who came from Metropolitan Schools have been added to
establishments.]

CLASS.	Column 1.		Column 2.		Column 3.	
	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.
BOYS, 7–15 - - - -	10	12·8	23	28·4	44	54·3
Previous Ophthalmia -	2	2·4	6	7·4	41	50·6
No „ „ -	–	–	–	–	–	–
Showing Discharge -	0	–	0	–	17	21·
GIRLS, 7–15 - - -	6	8·8	18	26·4	42	61·6
Previous Ophthalmia -	1	1·4	9	13·2	36	52·9
No „ „ -	–	–	–	–	–	–
Showing Discharge -	0	–	1	1·4	17	25·
INFANTS, –7 - - -	6	13·	10	21·7	29	63·
Previous Ophthalmia -	1	2·1	2	4·3	27	58·9
No „ „ -	–	–	–	–	–	–
Showing Discharge -	0	–	1	2·1	20	43·5
Average per-centage of all }	–	11·5	–	25·5	–	62·9

The following facts bearing on the accommodation and manageme
are of importance in reference to this disease. Many others of equa
recorded in Mr. Courtenay's Report and need not be repeated.

1. The youngest age at which the children are admitted :—

SUTTON. 3 years. It was 4 years until about July 1873, the da
the new block.

HANWELL. 3 years.

FOREST GATE. 2 years.

ISLINGTON. 3 years.

MILE END. 2 years. There are several who can barely walk.

BRENTWOOD. 2 years.

ASHFORD. 2 years.

SOUTHALL. 9 months since November 1870 ; till then it had bee

ANERLEY. 3 years.

LEAVESDEN. 2 years.

BATTERSEA. Uncertain. There were no children younger th
my visit.

NORWOOD. No strict regulation. Sometimes as young as 12 mo
2 years for the last year and a half.

MITCHAM. 2 years.

PLASHET. 15 months.

LEYTONSTONE. 2 years.

EDMONTON. 2 years.

Probation.—Some changes have been made in this since the dat
nay's Report.

SUTTON. 2 weeks ; recently begun. Admissions once a week.

HANWELL. 2 weeks. Admissions once a week.

FOREST GATE. 1 month.

ISLINGTON. No formal quarantine. Medical Officer has power to
cases direct from Workhouse to School-Infirmary.

MILE END. 1 week, in the infirmary ; no separate building.

BRENTWOOD. None.

ASHFORD. 10 days when possible; admissions sometimes occ
allow so much.

SOUTHALL. None, nor is there any at the Workhouse.

ANERLEY. 2 weeks. Admissions once a week since May 1874.

LEAVESDEN. 2 weeks for several months past. Admissions n
fortnight but lately oftener.

BATTERSEA. 1 week in a new building for the purpose ; formerly
mary was used.

NORWOOD. None for the last 12 months since quarantine has be
the Workhouse. The Probation Wards (built 1869) are at prese
mary patients.

MITCHAM. 1 or 2 days, except for the infants admitted with he
for a year or more have been kept permanently separate.

Mile End. A "nursery" in the main building, for the smallest; the remainder use girls' day-room for a school-room. Accommodation deficient.

Brentwood. A "nursery" and an older department. The nursery is good.

Ashford. No sub-division. Arrangements deficient. This department overcrowded.

Southall. "Nursery" for those *under 2*. No sub-division of those from *2 to 7*; this is needed.

Anerley. A separate building and excellent yards, &c. No formal sub-division. A good many are (Sept. 1st) in the isolation school. They are all on the whole very well managed.

Leavesden. "Nursery" for all under 5; the accommodation for the elder ones is in some respects deficient.

Battersea. No sub-division. Arrangements defective in yard and school-room.

Norwood. Separate accommodation in all respects for all under 6; elder ones mix with the boys and girls except at school time; there should be a sub-division below 6 years. Accommodation very deficient in rome respects.

Mitcham. Good separate building. At present all the infants with healthy eyes are kept apart in a dormitory in the school. Infant school used only for those who have had ophthalmia.

Plashet. Separate arrangements and on the whole tolerably good. The youngest are kept separate in a well-warmed room, but it is much too dark.

Leytonstone. Separate "nursery" but it is not nearly large enough to receive all who ought to be in it. Separate arrangements for the elder ones.

Edmonton. Good separate nursery arrangements for all under 5. The elder ones mix with the girls except for schooling.

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