On Ophthalmia.

Being connected with the Metropolitan Pauper Schools for the reception of children from Hackney and Shoreditch the subject which has principally engaged my attention has been that of Ophthalmia
The term Ophthalmia as used in reports to the Local Government Board includes granular lids combined with Conjunctivitis palpebral, ocular or both but generally only the former. - Conjunctivitis alone, or either of these conditions complicated with Bleph-aritis, Keratitis, iritis, etc but at least 95 per cent are of the first and in using the term Ophthalmia in this Thesis I shall refer to that class of case.
In ophthalmia then there are two factors - the granular lids which are a local man-ifestation of constitutional weakness and therefore a chronic disease and the conjunc-tivitis which due to some irritant is of an acute or subacute character
The Cause of Granular lids appears to be Exposure of the individual for a lengthened period to air which contains an excess of moisture & organic matter either of which

in the constitutionally weak would probably be sufficient to produce them
The Granulations are due to exudation and partial organization of lymph around the lymph follicles of the subserous tissue of the conjunctiva causing hypertrophy of these follicles. When moderate, the granular condition is not of itself a matter of much importance but it becomes so from the fact that eyelids so affected are far more susceptible to the causes of inflamation than healthy ones and having less vitality are much more difficult to cure, are much more prone to recurrence and the granular condition is apt to get worse and worse after each successive attack
Inflamation of the conjunctiva alone is seldom serious but when complicated with granular lids an attack may give rise to chemosis, corneal ulceration & sometimes iritis
The papillae of the conjunctiva also become enlarged & inflamed making the granular appearance much worse
Bad Granular lids owing to their rough surface may give rise to irregularities of the cornea causing astigmatism etc and in scrofulous cases may even produce ulceration

Granular lids give rise to little or no discharge from the eye and are not caused by contagion but when complicated with conjunctivitis there is always a more or less purulent discharge by which the latter may be propagated. This discharge is more contagious when fresh and moist than when dry. It is said that the disease may be transmitted through the air the contagium passing through the lachrymal passages to the nose and being given off along with the watery vapour of the breath from my own observation I have never been able to note such a case and the nursing staff who were on duty at an epidemic of Purulent ophthalmia in the Hackney school about 10 years ago neither suffered themselves nor remembered any case which could be attributed with certainty to Infection The Discharge is by far the most frequent cause of Ophthalmia. Amongst other irritant causes are dust, soap, draught, frost & East Wind The Greater number of first cases are due to contagion but with recurrences the opposite is the case

Fevers also act as an Exciting cause of Ophthalmia on previously granular lids. An Epidemic of

measles at the Shoreditch Schools in November 1891 was followed by ophth-almia primary or recurrent in about threequarters of the cases attacked. In February and March 1891 there were Epidemics of Scarlatina and Hooping Cough in the Hackney School and this doubled the number of cases in the Infirmary. But what little Influenza there was in the Schools in April 1891 and February 1892 made scarcely any difference.

Predisposing Causes are Scrofula. Tubercle and Insufficient or Improper ~~food~~ Syphilis I have not been able to note as one.

The Period from the Contagium being applied to the discharge appearing seems to be from 48 to 72 hours.

The Signs and Symptoms of uncomplicated Ophthalmia vary according to the degree. In mild and moderate cases there is a watery or thin purulent discharge with hyperaemia of the conjunctiva. In first cases the inflamation generally ~~affects~~ extends to the ocular portion but in recur-rences the palpebral is as a rule alone affected.

There are the symptoms of Conjunctivitis. Smarting or sand pain, photophobia and winking.
When the Conjunctivitis is more acute the discharge is more purulent, sometimes plastic, the signs & symptoms are more severe and there is great probability of the cornea becoming ulcerated.
In the case of some Scrofulous subjects after one or two relapses the palpebral conjunctiva seems almost to have disappeared, the eyelid presenting the appearance of a mass of granulations taken from a callous ulcer.
Of the complications which Ophthalmia gives rise to by far the most frequent is corneal ulceration. Iritis is not uncommon and in a few cases Phlyctenular ulcer at the margin of the cornea occurs.
The damages to the Cornea occur from 2 causes - Irregularities due to the friction of the granular lids - and opacities cicatrices or destruction of tissue as the result of Inflamation & Ulceration.
Usually after a first case has been cured of discharge there remains a hyperaemia

of a lozenge shape corresponding to the meibomian glands
In a first attack of a healthy eyelid which has undergone treatment & cure I have never observed any hyperaemia of the palpebral fold left; but in first cases of scrofulous children and in recurrences the whole palpebral conjunctiva from the margin of the eyelashes to the ocular reflection remains equaly hyperaemic a small percentage of the eyelids attacked regain their normal appearance but the majority are left more or less congested
With regard to the prognosis of Ophthalmia as to the severity and duration of the attack the facts which I should base it on are: Slight or Bad Granular lids - Children apparently Healthy or Unhealthy - The Condition of the Conjunctiva - The amount an Character of the Discharge - Complications absent or present - the result of treatment as shown by the dimunution of the discharge - and the existing hygenic conditions under which the patient is & has been

The Prophylactic & Hygenic treatment will be dealt with after in a description of the two Schools

The Medical treatment varies considerably according to the case both as to the local application and the length of time it is kept up. The constitutional is confined to those cases in which the patient is badly nourished, debilitated, shows signs of specific disease, or does not improve under local treatment and for this purpose I have given cod-liver-oil by itself - mixed with Parishes food - Fellows Syrup, Syrup of Iodide of Iron - Mercury in Syphilitic cases - and Quinine. The last of these is the only one in which I have found improvement in nearly every case. Even in undoubtedly Syphilitic children the Mercury does not appear to have done them any good as far as the Ophthalmia is concerned, and in non-syphilitic cases of iritis with or without adhesions I have never seen any benefit from it although many, in fact, nearly all have improved steadily under Quinine.

The Local treatment in bad cases consists of a solution of nitrate of Silver (10 grains to the ounce) applied to the lids every morning with Boracic acid Ointment applied in the evening after they have been bathed. For the milder cases a weaker solution, Lapis divinus, or Pagenstechers Ointment and to the convalescent Boracic ointment only is applied
Shades are used in all the cases where there is photophobia, winking, or where the eyes water excessively. When any strong application has been used the discharge sometimes increases for a day or two but gradually diminishes again if the treatment is persevered with
Cases in which there has been puffiness of the eyelids I have found benefitted by painting inside & out with Tincture of Iodine. In cases where the lids are badly granular the application which has given the best results is papain. The eyelids become smoother the hyperaemia diminished and the the discharge reduced.

The formula used is

℞. Papain ʒi
Cocainae Hydrochloratis ℈i
Vaseline (Pure White) ℥i.
~~M~~. ft Unguent.

The ointment is applied to the lids, which are kept everted for about a minute. They are then replaced and the superfluous ointment gently rubbed away.

The idea of using Papain occured to me from the improvement it has made in carcinomatous ulcerations. —

The Lids require daily inspection and on any appearance of corneal ulcer or Iritis Liquor Atropinae is used with Quinine internally.

I shall now pass to the Hackney and Shoreditch School describing the principal facts about each which have any bearing on Ophthalmia
Taking the Hackney School first, it is the receptacle for the pauper children of Hackney, Homerton and De Beauvoir Town. These districts are rather more than twice the area from which the Shoreditch School derives its inmates. They are densely populated by the working classes and overcrowding and unsanitary conditions abound. The houses are old, this district not having been as yet develloped by model dwellings. The only open spaces near are Hackney Downs and Hackney Marshes and they are a considerable distance from the poorest and most thickly populated part
The School at Brentwood stands high about 300 feet above the sea level It is a block building which during the last twenty five years been three times enlarged and supplemented In addition to the School Buildings

there are the Probationary, the Infirmary & the Infectious hospital.
To the first, the children who are sent down from the Hackney Workhouse are relegated and kept in quarantine for a fortnight. They are examined on admission & again on discharge.
The Infirmary contains 76 beds and the Infectious 32. To the latter all Infectious & contagious cases are sent except those suffering from Ophthalmia. The Buildings are ~~of~~ fireproof being entirely built of brick and are warmed by hot water pipes. The Rooms are ventilated by the ordinary hit or miss ventilators besides fanlights. The hot water pipes, although they keep the rooms more evenly warm than fires appear to me to create a more or less moist heat which I should not think would be beneficial to the ophthalmic cases.
The subsoil drainage of the schools is good, there being strata of sand & gravel.
The ages from which children are admitted are from 3 to 16.

The number of children the school can contain is 540 and it usually has within 10 of that limit.
The ordinary diet, as laid down by the Local Government Board, is good and wholesome, but having the same week after week the children do not relish it as they might otherwise do. In an Establishment of this kind there being a common kitchen, it is impossible to have the variation in cooking that one might have in a smaller community. All the children with ophthalmia are on ordinary diet. Those with bad complications are sometimes ordered an egg a day in addition.
The children are inspected fortnightly as to their eyes & eyelids and those which show signs of relapse are sent to the Infirmary as in or out patients. That it is a very difficult matter to make a selection, the following figures, which I noted at one of the Inspections will show. It is difficult to obtain from the children answers which would be accurate, however with the assistance

~~[illegible]~~ of information from the attendants and nurses the following is, I think approximate.
Of 536 children examined 320 said they had suffered from "bad eyes" Of these 320, 39 had normal eyelids which would reduce the number of those showing more or less hyperaemia and granular lids to 281. Of the 216 who said they had not 98 showed signs of a previous attack or were slightly granular. Adding these 98 to 281 the number of children either suffering from or predisposed to Ophthalmia was 379. or nearly three quarters of the Total.
Twenty seven children were markedly scrofulous. Twenty had had or were suffering from Blepharitis Four had slight specs or cicatrices on one cornea. One had opacities of one Cornea causing total blindness of that eye. Two had corneal ulcer which would probably cause no severe damage; and one with Iritis and posterior Synechia of the right eye and keratitis of the left.

nineteen were in-patients and four out-patients at the Infirmary
From these figures it will be seen that although the number of pre-disposed eyelids are large, there is only about 1 per cent of the children with slight corneal damage and less than ½ per cent with severe.
The average number of in-patients taking the returns for the last 18 months, excluding months of, and after, Epidemics is $16\frac{3}{4}$. Of out-patients 4, making a percentage of about 4.
It is difficult to say what percentage of children are predisposed who come direct to the school from ~~their~~ homes but probably not more than 20%.

Until 1886 the Shoreditch Children were sent to the Hackney School Owing to want of room etc, the Cottage homes at Hornchurch were built. They receive the children from Shoreditch Spitalfields and part of Haggerston. This is a much smaller area than the previous and not nearly so overcrowded as a great deal of space is occupied

by Warehouses etc. This district is as badly off for open spaces as is Hackney.

This is the first, and I think the only one of the Metropolitan Pauper Schools on the Cottage Home System. There is a Probationary Department at the Lodge and almost all the same arrangements as at Hackney prevail in this school.

The Buildings consist of Superintendant's House - School - Chapel - Store. Infirmary and Infectious department, besides 11 cottages. These are built to accomodate 30 children and their Officers. Each Home has a garden and a large grass plot at the back. There is also a general playground and a field.

The Rooms are heated by fires and ventilated by Tobins tubes. The halls and corridoors are airy and the stairs of metal and wood.

The total number that can be admitted is 330 but as one cottage is set apart for boys convalescent from Ophthalmia and rarely contains more than ten 310 may be put down as the maximum

The arrangements for cleansing and washing the children were omitted in the description of the Hackney School but they are briefly as follows.
There is a basin fitted with tap and plug in which each child washes or is washed. For each child fresh water is always used and it is supplied with a small towell which after one using is directly sent off to the Laundry. The ablutions are under the direct supervision of the attendants a warm bath is given to each child once or twice a week according to age.

The Shoreditch School differs from the above in one or two points as far as the washings are concerned each child has fresh water but ~~except~~ there are not taps + plugs to the basins. so that more super-vision is required to see that they do not wash in dirty water. each child has a numbered peg and towell. This also requires more supervision in making the children use their own towels

Fortnightly Inspections of the eyes take place as at Hackney
The Officers at each Cottage obtain every day their supplies from the store and each Cottage does its own cooking. This is a great advantage over the general Kitchen as the food can be and is served up in a great variety of ways, and the children are always hearty and finish their dinners.
The following taken from two of the cottages is a fair sample of the dinner in all.

Day	Dinner	Cottage
Sun	Roast leg of mutton Potatoes Bread & Suet Pudding	1
	Roast Beef Potatoes Greens Parsnips, Bread	2
Mon	Meat Pudding Bread Potatoes, Bread Pudding	1
	Cold Beef Carrots Bread, Bread Pudding	2
Tues	Boiled Beef Dumplings Potatoes	1
	Hot Roast Mutton, Potatoes, Plum pudding	2
Wed	Pea Soup & Bread	1
	Stew Potatoes, Bread	2
Thurs	Roast Veal Greens Potatoes Bread Pudding	1
	Roast Veal & Pork Greens Potatoes Bread	2
Frid	Hash, Potatoes, Bread Plum Pudding	1
	Cold Roast Veal & Pork. Bread. Suet Pudding	2
Sat.	Bread Cheese Cocoa	1
	Bread Cheese Cocoa	2

at an inspection of 303 children
221 said they had "bad eyes" [inserted: had]
32 had normal lids which would
reduce this number to 189.
Of the 82 who said they had not
19 had slightly granular lids or
evidence of previous ophthalmia.
or 208 out of 303 were in a predis-
posed state for ophthalmia or were
suffering from it.
Fourteen children were markedly
Scrofulous, 12 had had Blepharitis.
Three had slight specs or cicatricis
on ~~the [illegible]~~ one cornea impairing
sight little, if at all. One had opac-
-ity of one cornea causing some
damage to sight and one had
opacities of both likely to damage
sight considerably. In no case
was the sight of an eye lost.
From these figures it will be seen
that roughly $\frac{2}{3}$ of the total were
predisposed to ophthalmia and
only $\frac{1}{3}$ per cent had severe corneal
damage. There were 17 children
being treated as in or out patients
and the average amounted to 14 or 3 per cent

The plan of treatment pursued in both schools is to keep the ophthalmic cases under observation for about a week after all discharge has ceased. If the lids are then tolerably healthy they are discharged. Should they be not so, they are kept in the Infirmary or treated as out patients.
The long standing, more especially the scrofulous, cases at both schools are sent to a Convalescent Home at Rotingdean for about 12 months.

It is impossible to estimate precisely the amount of damage & harm done by Ophthalmia, but the following it certainly does:
It invalides, & in some has always invalided, a large number of the children – It interferes with their education for the time being and doubtless makes their eyes weaker for reading and sewing. –
It damages the sight of some and their prospects of making a living are thereby impaired
Recurrence is the rule not the

exception and causes idleness and bad habits and lastly children suf-fering from ophthalmia are always a source of danger to others.

The ~~dan~~ way in which ophthalmia is propagated in the schools is by the children rubbing their fingers on each others faces and eyes in most cases unintentionally but sometimes deliberately to initiate a new comer into the ophthalmic state

With regard to the Prophylactic treatment no doubt there should be more isolation than it is at present practicable or possible to carry out. If instead of isolating the unhealthy, the healthy were to be isolated and the predisposed divided into two schools according to the severity - The cases from the Infirmary going from one to the other as in School Standards until they reached the healthy. Of course frequent inspect-ions would be required and any doubtful case would have to be remitted to the Standard below.

The Granular lids form a very delicate test of the state of health of any community not individually but more as to the purity of the air and satisfactory hygienic conditions. The Hygienic treatment must be directed to the following if they exist. Bad Ventilation - overcrowding - Bad Drainage, both house & soil - Want of Cleanliness - Bad or unpalatable food - Insufficient open air excercise & Defects in clothing -

The Cottage Homes described have none of these faults and the System is probably the nearest approach to perfection that has yet been tried. But whatever the system is it will, to be successful, require the utmost supervision from the medical officer & it will require a sufficient and efficient staff from the superintendant and matron down to attendants on the children.

In this description of the Schools it may possibly be considered that

the details are trifling and sup-
-erfluous but my apology must
be that I think that it is not
by any single method or treatment
but by the minutest attention to
every subject which has any
bearing on the case that we may
hope to free Institutions of the
kind from their present unsat-
-isfactory ophthalmic condition

Charles. I. L. Mansel

Brentwood
April, 1892.

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