A full digest and Critical Exposition of the Syphilitic Diseases of the Eye and its Appendages, with some original observations.

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The reason I have selected the eye affection of syphilis for my thesis is because during the last twelve months I have been assisting the practice of the Royal Eye Hospital, Southwark, during which time I have had the opportunity of making many of the observations set forth in this paper.

At the same time I have referred to the following Text books and papers on the subject:


II. Strongy's "Handbook of the Diseases of the Eye"

III. Berry's "Diseases of the Eye"

IV. Jonathan Hutchinson's "Syphilis"

For the sake of convenience I have arranged the syphilitic lesions of the eye in a tabular form, dividing them into those occurring in Acquired, those occurring in Secondary, Syphilis, and subdividing the former into Primary, Secondary, and Tertiary.
Acute Plasitic Iritis
Diffuse Intussusception Keratitis
Keratitis Panulare Profunda
Neuro-Keratitis
Superficial ulcer of lid
Hamorrhagic Retinitis
Granulomatous Iritis
Late
Choroiditis
Serosa Iritis

Episcleritis with Deep Scleritis
Optic Neuritis
Retrobulbar neuritis

Optic Atrophy
Gummata
Epiphiaks
Malar paralyses.

Mucocle and Epiphora
Marginal Blepharo-adnütio
Infectious Keratitis
Iritis

Cataract
Choroiditis
Papillitis
Primary Optic Atrophy
Paralyses of the Eye Muscles
I. Acquired Syphilis.

(2) Primary—Primary Chancræ.

This may occur anywhere on the lids. The

situations most common are however: 1. on

the external surface of upper or lower lid, or

on the free margins. 2. The plica semilunaris

or Caruncle, 3. On papillary surface of lower

conjunctival sac near the outer canthus.

In 1. the eyelid is swelling and pimplish, with

marked swelling and induration. In 2 and 3

the swelling and induration is usually only slight.

The superficial lymphatics of the face, specially those

commencing at the inner canthus, are directed

obliquely downwards in the course of the facial

vein, and open into the submaxillary lymphatic

glands, whereas the lymphatics leading from

the outer part of the eyelid pass to the pre-auricular

lymphatic gland, which lies on the posterior fascia

just in front of the tragus.

If the chancræ is situated near the inner canthus

the submaxillary glands are the first to become

involved, if near the outer canthus. The pre-

auricular gland is the first affected. As the

chancræ increases in size, however, both sets

are usually involved. The glands are swollen

and indurated, fiercely movable (these being the

peri-auricular glands) painless on manipulation, and
do not tend to suppurate.

In most cases the eye is infected by the finger.

Since itching of eyelid or caruncle is so very

common.
Complications.

Epiphora may be caused by the chance involvement of the canaliculi, and subsequently giving rise to stricture of the ducts.

Sympathetic palsy may occur in the process of healing.

Phagedena of the eyelid is practically unknown (Juler).

Diagnosis.

It has to be diagnosed from Rodent ulcer, which usually occurs at the inner canthus and Harderian gland. In these three conditions the neighbouring lymphatic glands are not involved.

Primary chancres must also be distinguished from a tubercular ulcer of the preauricular or conjunctiva (Juler), which is a very rare condition, here the ulcer is not indurated, the surface is smooth, and the pre-auricular gland is enlarged, tender, and hot freely movable.

A positive diagnosis cannot be made until the induration of the pre-auricular and submaxillary glands latter place.

Treatment.

Black wash locally, and the use of mercury internally constitute the treatment, which must be commenced as soon as the induration of the lymphatic glands is recognized.
(B). Secondary stage

1. Acute Plastic Iritis

This is the most common syphilitic lesion of the eye - 50% of all such cases are syphilitic in origin.

It generally occurs 3 to 6 months after the initial lesion has manifested itself, and hence distinctly belongs to the secondary stage. The condition is symmetrical, one eye being attacked a little later than the other.

**Symptoms**

Slight local pain in the eyeball, also referred to the frontal region, along the course of the supra-orbital, supra-hoebbron, and lacrimal nerves, also pain may be complained of over the frontal bone and side of the nose.

Vision is impaired, generally $\frac{5}{6}$ or less due to a cloudy aqueous humour or cornea, or lymph in papillary area, or on the anterior part of the capsule of the iris, or to vitreous opacities. Photophobia and lacrimation are present, but often only to a very slight degree.

**Signs**

The pupil is contracted and sluggish. The iris is muddy and discoloured from the hyperemia, a blue iris becoming greenish, and a dark brown one becoming brownish red. The pattern of the iris is indistinct. There is a marked pink circumcorneal zone of injected culciary vessels. In some cases there
In a typical sympathetic case much lymph is
thrown out, and may be seen organized on the
Anterior surface of the Iris. Heads of lymph
may also be seen in the papillary area.
With atrophy the Iris is found to be partially
or completely bound down to the Anterior surface
of the capsule of the lens (Posterior Synechiae).
If this posterior Synechiae is total, no lymph
can pass forward through the pupil from the
posterior chamber (Exclusion of the pupil).
Should the whole pupillary area be blocked
with organized lymph we get a condition
known as Exclusion of the pupil.
Either Exclusion or Exclusion of the Pupil
may give rise to a Secondary Glaucoma.

Pathology

There is great engorgement and distension
of the vessels of the Iris, with a rapid sa-
dulation of white and red corpuscles and
plasma into the loose connective tissue of
the Iris. This plasma coagulates to form
organized lymph, which attaches the Iris
to the Anterior surface of the lens capsule
and which also blocks up the pupillary area.
It may also lie on the Anterior Surface of
the Iris, partly causing the discolouration
Complications

Posterior Synechiae, Secondary Glaucoma
and Subsequent Hindrance, Cyclitis.
Choroiditis, and Retinitis

The Iris may spread to the Ciliary body and become chronic (Chronic Iris-cyclitis) with diminished vision of the Eye ball, following which the retina may become detached, and calcification of the lens, and Phthisis bulbi subsequently.

Diagnosis.

There is nothing pathognomonic of Syphilitic Plastic Indio in itself, but the following associated conditions help. History. Infection throat with superficial ulcers, Mucoconstrictors on tongue and elsewhere, etc.

Prognosis

The condition nearly always subsides under proper treatment, the vision being very little, if at all, impaired. There is little or no tendency to recurrence when once cured, in this respect it differs markedly from the Phthisic form, which relapses time after time.

Treatment

The local treatment includes the use of dark glasses, the medication of Atropine (which by acting on the 3rd nerve paralyses the Spincter-Iris and Ciliary muscle, and possibly also by stimulation of the Carotid Sym pathetic fibres in the Iris causes dilatation of the pupil with vasoconstriction, also breaking down the adhesions and drawing away the Iris from the Cello, so that new adhesions are not formed.
Atropine poisoning may occur, due to the passage of the drops along the lacrimal canals into the inferior meatus of the nose, and so being swallowed. To prevent this press the fingers 1/2 way into the maxillary canals during the instillation to occlude the canaliculi.

The symptoms of Atropine poisoning are: temperature running up to about 100°F, dryness of mouth, flushed face, dry mouth and throat, nausea, etc.

The hydrochlorate of cocaine may be combined with the Atropine with advantage, acting probably by stimulating the sympathetic fibres, and so aiding in dilating the pupil and in the desired vaso-constriction.

If Atropine is not well tolerated, Sulphate of Scopolamine (1/2% 3%)

After posterior synechiae have been broken down by the use of mydriatics, dots of brown pigment are often seen on the anterior surface of the lens, and indicate a previous drusis.

Apply leeches if the pain is severe; give mercury subcutaneously.

Should the drusis become chronic an upward therapeutic iridectomy is indicated.
2. **Diffuse Interstitial Keratitis**

Is extremely rare in acquired Syphilis, only one case having been reported in this country (Jukes), and that by Dr. Stanford Morton in the Ophthalmic Hospital Reports. On the other hand it is very common in Inherited Syphilis.

3. **Keratitis Punctata Profunda.**

A condition described by Jannetzen, in which small dots of infiltration are found in the True Corneal Substance, and not on the posterior surface.

As in Keratitis punctata, these dots are not individually distinct, but run together in a striped manner.

4. **Greco-punctiata**

Is an uncommon condition, a case is recorded by Mr. Jonathan Hutchinson (Syphilis, p. 140) as occurring in the 7th month of acquired Syphilis, hence belonging to the Secondaryes.

On examination with the ophthalmoscope, the margins of the dots were indistinct, and the adjacent retina, over a very large area, opaque and of a dull grey colour, the whole of the yellow spot region was involved in this turbid condition — the retina of the other eye was almost healthy, and her vision in it good.
5. Superficial ulcers on the lid margins.

This may occur during the secondary manifestations. It is followed by loss of lashes.

The treatment is similar to that of like ulcers occurring elsewhere under such conditions.

6. Hemorrhagic Retinitis

In acquired Syphilis this affection occurs in three different stages.

I. Coming on 6 to 12 months after the primary lesion.

The eye is involved first, and the other a little later. It is characterized by failure of vision, with floating bodies before the eye, due to "dust-like" vitreous opacities. There is also night-blindness.

On ophthalmoscopic examination floating bodies are seen in the vitreous, and some of these may be also observed by oblique focal illumination to be distinctly red in colour, showing that they are due to small hemorrhages. Small hemorrhages, round in shape, may best be lying in different layers of the retina, with white streak along the course of the blood vessels.

II. It may occur in connection with Chorioiditis and is described under that heading.

III. It may occur in the tertiary stage. There are also conditions of Chronic Purulativeness
which occur in connection with tertiary Syphilis, e.g. Chronic Interstitial Syphilis and Lazoaro Disease, and a hemorrhagic retinitis maybe secondary to either of these diseases.

7. Gummatous Iritis.

Occurs in connection with late secondary or even tertiary Syphilis. It is termed "Intra papillara" by Alexander.

It is characterised by the occurrence of grey, or orange-coloured, effusion, the base of a hemorrhoid, at the papillary margin, or in the substance of the iris, indicating a pseudogummatus iritis. They are rarely found at the periphery of the iris.

This condition nearly always leaves at least one well marked posterior Syphilus after it has cleared up. Occasionally, gummnatus nodules are so large that they touch the posterior surface of the Cornea.

This condition must be distinguished from Tuberculosis Iritis. This latter is however, rare, and is characterised by the formation of white or red, not vault-coloured, tubercles at the periphery of the iris, these tubercles tend to run together, pain is absent, irinina is diminished, and iodide of Potassium has no effect on this condition.
8. Chorioiditis or Plastic Chorioiditis.

Ocurs both in Acquired and Congenital Syphilis. In the first case it rarely occurs before twelve months after infection, and nearly always within eighteen months, and hence belongs to the period of early secondary or "reumers." The
Thomson Hutchinson records a case of chorioiditis in an infant of 5 months old
(Syphilis, p. 234).

Symptoms:
A slow progressive failure of sight, with
dark specks floating in front of the eye. With
the eyes closed in the dark the patient may see
blue or red phosphenes, due to the circulation
of the rods and cones by the inflammatory
exudation. The outlines of objects are distorted
(SSallophoraia)

Pathology.
In the early stage there is a round exudation,
remitted, with plasma, from the vessels of
the choroid, coagulation of plasma later place,
leading to the formation of organized chorioid,
which is seen on the choroid as pale purplish
yellow spots. The inflammation then spreads
to the neighbouring layers of the retina, i.e., the
layer of pigment epithelium, the rods and cones,
the internal limiting membrane, and outer
nuclear layer. The localized inflammatory
exudation causes proliferation of the hexagonal
pigment cells, hence at first much pigment.
occurs in the inflamed area, atrophy of other parts occurs around this area, showing as cobalt patches with retinal vessels passing over them, the sclerotic showing through the atrophied choroid and retina, around these atrophied areas the pigment from the retinal pigmented epithelium may be seen deposited irregularly, this condition resembles one of the Isrealian Palatinusons description of a condition seen in the tongue in Ypsilidio.

"On the same tongue two sets of lines may be seen, one the Macula tuberola, due to a hyperplasia of the normal papilla of the part, and secondly, the bled patches due to atrophy of the papilla"

The inflammation may spread from the retina to the vibrissae humour, the degeneration of lymphatics brings about giving rise to the black spots complicated of. If the posterior part of the eye be also involved, a posterior star-shaped calcareous will be produced. The thinned atrophied patches may bulge and form a posterior staplytoma, associated with Phagoria.

Chorioiditis may be followed by Secondary Glaucoma.

With the Penumbra the patient's vision field shows destructive scotomata.
There are four varieties of optic neuritis due to syphilis. The disseminated form, the central, the bulbar, and the diffuse, according to the video of the affected portion.

In the diffuse variety, the inflammation spreads to the retina, giving rise to a chronic diffuse syphilitic choroido-neuritis. In this condition, the optic papilla becomes congested, and its margins indistinct, its foci are dilated, while the arteries remain normal, boat-like, or hereditary opacities may be seen floating in the fluid vitreous. Occasionally, a posterior polar cataract is present, which in this condition of the eye is a local transparent opacity on the posterior surface of the lens, with processes radiating towards the periphery.

The characteristic symptoms are failure of vision, an optican sense is diminished. There is distortion of objects, the field is contracted, and nystagmus is usually present.

Retinal pigment is seen irregularly scattered in the periphery of the fundus, hence this disease closely resembles Retinitis pigmenta which is a non-inflammatory pigmentary degeneration of the retina, often hereditary and prone to occur in the offspring of consanguineous marriages. This commence about the age of puberty, and is characterized by nystagmus, and a contracted field of vision and is generally held to be non-syphilitic in origin.
Note the pigmented deposits are small and irregular in shape, with threadlike processes striking out from the central mass, having the same arrangement as the lacunae and canaliculi in a section of hard bone. These are choroidal atrophy or vitreous opacity.

Treatment

A rule noted glasses, the institution of atropine every night to prevent accommodation. Iodinization internally and Iodide of Potassium internally. If the condition is acute, as shown by ocular pain with diffuse vitreous haze in addition to the above symptoms, circuses should be applied to the temples.

In each of the four varieties of choroiditis it is to be noted that there is some disturbance of pigment, showing that the inflammation had spread to the retina. Dr. Jonathan Hutchinson, however, describes a case of gumma of the choroid occurring about the 21st month after coagulation. In this case yellowish-white nodules were scattered over the surface of the choroid of the right eye only (the vision of the left eye was not impaired at all). There were no pigmented changes seen, and the optic disc was normal, so that it was inferred that the retina was not implicated in the mischief.

(Syphilis, p. 228)
9. **Serosous Iritis** (OcHexeulcitas, Karatida\nPunctata, Indo-cyclitis).

Mr. Tucker suggested the term "Sero-plastic Indo-
cyclitis."

This affection arises during the late secondary
or even in the tertiary stage of Acquired Syph.

The chief symptom is hazy vision

The signs are as follows: the pupil is
slightly dilated and sluggish. The anterior
chamber is deep, and the aqueous humour is
hazy. A triangular area of dots is seen
on the posterior surface of the cornea, lying
on the posterior elastic lamina of Descemet.
The apex of this triangle lies towards the
centre of the pupil, with its base at the
implan angle below. This arrangement is
partly due to gravitation, and partly to
a mechanical result of the motion of the
eyeball (Swamye). The iris is usually
but unorganized. Lymph is not seen upon it.
A slight circumcorneal zone of injected
blood vessels is frequently found. The
clear part of the cornea is hazy. If some
lymph is thrown out between the iris and
the lens, this will be posterior synechiae,
but this is unusual.

The tension of the eyeball is usually
increased.
Pathology.

As there is in all cases some Cyclitis it is
supposed that the condition continues as a
Primary Cyclitis or Acute Cyclitis, with a
Secondary Cyclitis from the pleura of the Ciliary
body. This Excitation passes forward from the
posterior into the anterior chamber, and then
to the anterior chamber.

Another view is that the Cylindrical dots are due
to a proliferation of the flattened epithelial cells
on the posterior aspect of the iris, and
in this connection it is well to remember that
these epithelial cells on the posterior surface of
the Cylindrical are directly continuous around the
anterior
surface of the Iris.

The inflammation of the Ciliary body spreads
along the anterior part of the cornea back to
the Iris, then along the ligamentum verticis
round the Iris, causing an
inflammatory excitation to take place into
the Canal of Schlemm & the Spaces of Fontana,
and so blocking the filtration angle. This par-
If the ulcer has existed for any length of time
the neighbouring sclerotic becomes thinned, so that
the dark colour of the healthy body may be seen
through it, or the thinned sclerotic again may
bulge and form a chronic staphyloma.

Treatment.

Locally, until absorption of the ulceration
is not increased. If it is increased, Sarcine
must be substituted for it.
Mercury and Iodide of Potassium should
be given internally.
A therapeutical Indications may be
required.
We now come to the eye affection of the Tertiary stage of Acquired Syphilis.

1. Episcleritis with deep Scleritis

It occurs in adults during the Tertiary stage. Either one or both eyes may be involved.

It is characterized by the formation of a yellow nodule, or a circumscribed red patch close to the margin of the cornea, under the conjunctiva.

There is slight pain in the eyeball, increased by pressure on the inflamed area. The inflammation may spread, and involve the deeper layers of the sclerotic, and when this clears up, a localized thickening of the sclera often remains, which may bulge and form a staphyloma of the anterior part of the eyeball.

If the disease affects the whole of the anterior part of the sclerotic, a complete anterior staphyloma may result. This is especially seen in the cul-de-sac region, where the neural inlet may be seen through the thinned sclerotic, giving a greyish appearance.

If the scleritis is severe it may be associated with Keratitis, Phlycteni or Secondary Trichiasis, Cyclitis, or Chorioiditis.

Treatment

The use of dark glasses, the institution of atropine, pain should be relieved by hot fomentations. Silver nitrate, and Podophyllin, internally.
2. Optic Neuritis

Syphilitic Optic Neuritis may be conveniently separated into two groups: I. Syphilitic Papillitis and II. Syphilitic Retrolubar Neuritis.

I. Syphilitic Papillitis

or inflammation of the optic papilla and nerve. May either be due to Central Involvement such as a gumma of the brain (generally cerebellar) or Syphilitic pachymeningitis or it may be due to the second place to displace in the orbit, when it is generally secondary to a retrobulbar neuritis, and may be unilateral.

It is a remarkable fact that in a case of double Optic Neuritis the vision may be unimpaired or only slightly so. I remember seeing such a case in a boy of 14 (due to lead poisoning) when the vision was 2/2.

With the ophthalmoscope the optic papilla is seen smooth and edematous, red and hyperemic, the macular hazy from infiltration with lymph cells, the central vein is atrophied and tortuous, the central artery normal, or slightly contracted. Flame-shaped hemorrhages may be observed in the inner three layers of the retina, and in some cases white spots may be seen arranged in a stellate manner round the Draculca Puncta.
II. Syphilitic Retrobulbar Neuritis

May be due to a Syphilitic periostitis around the optic foramen. In such a case the chief clinical features, according to Mr. Gunn, are as follows:

"Rapid failure of vision, usually in one eye only, then may be tenderness and pain in the neighbourhood, absence of any opthalmoscopic sign, and a tendency to recovery."

There is frequently a central absolute Scotoma (Teler), or, it may be, a syphilitic intrascleral optic neuritis.

It is a rare condition, and may occur in Acquired or in Congenital Syphilis.

Mr. Teler describes a case which commenced directly behind the optic papilla, but later involved the papilla itself, causing true inflammation, and not merely oedema, of it.

The treatment of both these forms of Syphilitic Optic Neuritis is by the subcutaneous administration of Mercury and Iodide of Potassium.

3. Optic Atrophy.

In Acquired Syphilis two forms occur:

I. Primary, directly due to Syphilis, or associated with Tumor or Tumor or General parasitic of the Brain, (both of which conditions may be due to Acquired Syphilis).

II. Congenital Atrophy, following Syphilis of the optic neuritis and Papilitis.
It is important to distinguish between these two forms.

I. In Primary atrophy the disc-marginal is well defined, the disc itself being grey or white, the lamina cribrosa is readily seen, the vessels are normal or only slightly contracted, and no white lines of atrophy are seen along them.

II. In the Consecutive form the disc-marginal are indistinct, the disc itself quite white, and the lamina cribrosa not seen. The veins are tortuous and distended, and colute lines are usually seen along them.

The chief symptoms of this condition are progressive failure of vision, gradually becoming complete. The fields of vision are early contracted first to the nasal, and later to the temporal, side. Colour vision is also affected. Progress is in all cases slow, but treatment should be tried, Mercurius and Ignudi of K internally, also 1/30 or 1/20 pr. Strychinis mor, daily, and galvanism.

5. Gummatum.

May occur almost anywhere in the eye in tertiary syphilis.

I. In the Iris, usually a single growth the size of a large pea, light brown in colour, it commences growth in the iridic angle, and grows forward into the anterior chamber.
II. In the Ciliary Body and Choroid.

Acute iritis are relatively rare in this situation. Those in the choroid occur 2 to 14 years after the primary symptoms. They are usually of small size, and are scattered on the choroid, when absent they leave atrophic patches on the fundus.

III. In the Eyelids.

Rarely seen in this situation, they may break down and give rise to the characteristic deep ulcer.

IV. In the Orbit.

A gumma may occur here, giving rise to frontal neuralgia, and proptosis (or protrusion of the eyeball), or papilloedema (or inability to close the eyelids).

If the inflammation spreads to the neighbouring muscles, impaired movement, or paresis of one or more.

The usual position is at the inner surface of the bony angle of the frontal bone, probably because this is prominent, and more liable to injury. In this situation the eyeball may be displaced downwards and forwards, causing a certain amount of diplopia. Paresis may also occur.

E. In the Caruncle.

Has been known.

F. In the Nasal Sack.

May occur, and if it breaks down may cause a lacrimal fistula.
A condition known as a diffuse syphilitic infiltration of the lids has been known to occur. But it is very rare —

A case of symmetrical enlargement of the lacrimal glands, which disappeared under treatment with mercury and Jodid of Potassium, has been described by Mr Johns, who also stated that Guanemata, and diffuse syphilitic infiltration atrophy of the lachrymal gland are as a matter of fact unknown, and that the cases described as such are probably Guanemata growing from the ponsistem, and, as already stated, the commonest situation of these ponsistem in the orbit, is just under the lateral angle of the frontal bone, in the neighbourhood of the lachrymal gland.

6. Epiphora

May follow a syphilitic ectropion, the result of cicatization, or it may follow a mucocele associated with a chronic dacryocystitis, due to stenosis of the naso duct, due to and secondary to a syphilitic perforation of the bone forming the naso canal (i.e., the superior maxilla, lachrymal, & inferior turbinated). The inflammation having spread to the fibro-mucous lining of the duct. This condition is often associated with abscess of the bone involved.
7. Ocular Paralyses.

The common in connection with F.Argsyphilia, the 3rd, 4th, or 6th nerves being the most usually involved. The lesion may be central or nuclear, but in far more generally peripheral in origin in Syphilia. Being generally a sequel a involving the nerves at the base of the brain, or in their course to the muscles, or a syphilitic paresis of the Spinal cord causing involving the nerves as they pass through.

The 3rd nerve is the one most usually involved, and ptosis is the first symptom to be observed.

Ophthalmoplegia Interna.

Is characterized, according to Mr. Jonathan Hutchinson, by loss of accommodation, since the circular muscle is paralyzed, the power of accommodation, since both the sphincter and dilator iris are paralyzed. Mr. Hutchinson has localized the disease in the Edinger-Westphal ganglia.

In many cases the disease has remained stationary, and compensatory atony has not followed.
1. **Ephelora** and **Macrole.**

Associated with Macrole, or a blocked nasal sac — It may be due to structure of the nasal duct

"Snuffles" occurring so frequently in children with Congenital Syphilis is due to a Chronic Specific rhinitis, which may spread first to the peritoneum of the bony nasal walls; and secondly to the submucous membrane lining that nasal canal, actually causing structure of the dura itself.

2. **Marginal Blepharo-aditus interstitialis.**

Syphilis interstitialis is a rare condition which occurs in Congenital Syphilis. It is characterized by inflammation of the lid margins, and also the glands, in both upper and lower eyelids. The term "interstitialis" is applied to this condition because the lashes fall out and are not replaced.

3. **Diffuse or Interstitial Keratitis.**

Is a chronic inflammation of the whole cornea which usually occurs in inherited Syphilis, very rarely in the acquired form.
It is more common in girls, and generally occurs between the ages of 6 and 15 years. or even in some cases as late as 32 years. It commonly begins as a gray opacity at the point of the corneal margin, with a localized injection of the ciliary vessels.

The signs and symptoms are as follows:

The conjunctiva is congested, the circumcorneal zone is readily seen at the spot where the cornea is becoming opaque. Not uncommonly the cornea is uniform and smooth, but distinctly hazy, having the appearance of the smooth side of ground glass. Thus may be a salmon patch.

Photophobia and lacrimation are only slight, or may be well marked and associated with blepharo-scleritis. Pain is not a constant symptom, and proptosis as hot is absent.

The iris is usually seen, or may not be visible at all.

The eye is generally attacked first, but in from 3 weeks to 3 months the other follows suit. Eventually the disease is nearly always symmetric.

In most cases, for the time being, the vision of the globe is slightly lowered.

The condition generally lasts from six months to a year, or even longer. The first clearing up occurring at the margin, and the central opacity being the last to disappear.

To complete the diagnosis of Syphilitic Cataract should be looked for. Such as the following:
The child is usually thin and stunted in growth. The skin is dry and lacking, and often anemic. The tympanic bulla form skull may be found. Calcification at the corners of the mouth indicating old poisoning from an infancy dermatitis may be observed. Swollen glands of nose. The tympanic condition of the upper central incisors. The arch of the palate is usually high. Growth from involvement of the habit at face is also common. There may be smooth atrophic patches at the base of the tongue (present in about 50% of the cases). There may also be a chronic squamous cell syphilitis in one or more of the large joints (especially the knee joints). This squamous cell syphilitis being characterized by much effusion and little or no pain. Syphilitic nodes are found on the face, and there may be a pronounced affection of the long bones, causing a late overgrowth in both length and breadth.

When inquiring into the history of the disease, the family history may be of assistance.

The chief complications areiritis and cyclitis. There is nearly always some peripheral choroiditis, of that rarity which is so often muscular for Retinitis pigmentosa.

Vitreous opacities are nearly always present. Occasionally this is optic neuritis.
Pathology.

The condition is practically always secondary to a primary inflammation of the ciliary zone, that is, the ciliary body and adjacent sclerotic at the ciliary corneal margin.

There is a chronic inflammatory exudation of leucocytes into the substantia propria of the cornea, i.e., the fibrous tissue and lymph-spaces. This exudation first occurs at the sclero-corneal junction. It is these leucocytes which invade the cornea and produce its dull ground glass appearance. In bad cases an inflammatory deposit may occur on the posterior surface of the cornea, producing the condition known as Keratitis Precinata.

After a time colored corporcles get out into the lymph spaces along with the leucocytes, these lymph spaces practically now act as blood vessels, and show through the superficial hazy layers of the cornea, forming the "salmon patches".

Later the cornea may become thickened from the chronic inflammation, and opaque, from the formation of fibrous tissue, giving rise to the nebulous cornea. In which, by the use of a magnifying glass, remnants of the newly-formed blood vessels may be made out. There is no tendency for the cornea to ulcerate, and deep necrosis forms.

Prognosis.

A remarkable feature of this disease is its tendency to recovery, and recurrence is very rare. At the same time, a guarded prognosis is usual.
showed at first be quin, for showed the other coats of the eye become involved the condition may pass to one of complete blindness—showed the inflammation of the ciliary body cause atrophy to follow. The term is a Cataract of the lens. Often Cataractous in nature.

**Treatment.**

A shade or neutral-tinted glasses.
Institution of Atropin drops night and morning.
This treatment acts as a sedative, or to the ciliary and sphincter muscles, and prevents the formation of posterior synechia.
If the pain is severe Corain should be used with the atropine—
Mercury should be administered by the mouth, or by means of injection, until the gums are touched—
Counter-irritation behind the ear, or a blister in front of the ear are of use in some cases.
Later, Corneal trephine may be absorbed by the use of the yellow mercurial ointment

4. **Initis**

This may occur in Infantile Syphilis. It may occur in three distinct periods

I. In infants, in which case later in life the worse segment may be seen on the iris capsule

II. The conjunctival form, seen a few hours after birth

III. The infantile form, which occurs, on an average, about 5 months after birth.
Of the cases reported, females are the most usually affected. One or both eyes may be involved.

The symptoms are usually slight, but tend to great danger to the sight, the lens is often involved, a secondary cataract resulting.

In most of the cases other signs of inherited syphilis are present—posterior synechiae may be demonstrated by the instillation of atropine.

Treatment consists in the use of Sulphate of Atropine, and to get rest and a nutritious diet, and to improve the general condition of the child.

5. Cataract

Apart from glaucoma, which may cause opacities on the anterior surface of the lens, congenital cataract may be caused by inherited syphilis (Hechtman). The condition being secondary to cyclitis or to diffuse choroiditis.

6. Choroiditis

Choroiditis often occurs in congenital syphilis. It commences peripherally, and bears a striking resemblance to Retinitis pigmentosa, and usually makes its appearance about the same time that interstitial keratitis does, and is often associated with that condition. Choroiditis disseminata and Centralis
as described under Acquired Syphilis may also occur. A condition called Purulent Chorioiditis may occur in children suffering from Congenital Syphilis. Purulent exudation taking place between the Retina and Choroid, and may even involve the vitreous humour, spreading forwards it causes a purulent Uveitis with a well marked hypopyon - the anterior chamber is shallow from the increased pressure from behind. The cornea is hazy, Choroisis is marked, and the aids are swollen and congested, the pain is acute. This condition is a Har. Ophthalmicus, no fundus visio can be obtained, there being a yellow fundus reflex.

Choroisis is followed by a thinning of the coats of the eyeball, and scirrhus occurs during the growth of the globe. The coats rapidly yield to the intra-ocular pressure, causing staphyloma, with high myopia.

7. Papulocytis.

In Congenital Syphilis, may be caused by a Syphilitic Keratitis (Tulor), a Summers, or Syphilitic keratitis in the orbit being rare.

8. Primary Optic Atrophy. May occur associated with a defective brain.
   Rarely occurs in Congenital or Infants Eyeballs