Injections
Subconjunctival and Hypodermic
in the
Treatment of
Eye Diseases
The following conclusions have been drawn from cases treated during my term of office as House Surgeon at the Kent County Ophthalmic Hospital, Maidstone, The West Bromwich Surgical and Eye Hospital, and the Wolverhampton Eye Infirmary.

I have to thank my chiefs:

Mr. E. A. W. Hillard, F.R.C.S. (Eng) — Maidstone
Mr. R. A. Young — West Bromwich
Mr. A. E. Cheetham — Wolverhampton
Mr. R. B. Casland

The treatment of these cases was carried out during the two years 1904-5 to 1906-7 and was as complete as possible under the circumstances, depending chiefly on the willingness of the patient that the special treatment should be persevered with, and whether the progress was definite enough to warrant continued persistence.

Other factors to be considered were:

a) The state of the patient's general health.
b) The state of the eye.
c) Personal idiosyncrasies.
The drugs used were

The Cyanide of Mercury $HgCN_2$ in two strengths 1 in 2000 and 1 in 2,500, sterilized, filtered and kept in dark stoppered bottles used subconjunctivally.

Acorn [di-para-amyly-mono-phenetidin-hydrochloride] used with almost all the subconjunctival injections as a substitute for Cocain. It is less toxic than the latter [Quain 1899, p. 1372].

Bromine [Hydrobromide of Mono-ethyl Morphine] used as a 2 to 5 1/2 solution.

Sodium Chloride used as a 4 1/2 solution.

Adrenalin Chloride (Park Davis) 1:1000.

Cocaine was used too as Cocain hydrochloride

Pilocarpin Nitrate used in the form of tablets [367]
or as the Injicio (London Optical Co) 1:30.

Hygracrin Hydrochloride used as the 1 1/2 solution used with Acorn for the subconjunctival local injections.

Other drugs used were Ferrolycin, Brosinin, Nuttal paste, Jerosvin, Tropine. Oct. 29.03.
The cyanide of Mercury is preferable to the other preparations of Mercury as it is less irritating, causes less reaction, does not corrode the instruments, or much. It can also be repeated to a greater extent. The oxycyanide is also used. When commencing the subconjunctival injections the Perchloride of Mercury 1 in 5000 with 2½ Cocaine was used. But it caused intense pain and the chemosis was so great that the injections were invariably stopped — then Oxycyanide was used (1:1000) for a few times, and finally the (1:5000) cyanide of Mercury which has been adopted to as it has given uniform and satisfactory results.

It is always used now with 1% equal parts. In the case of the 1:5000 5 minims were used to commence with, and increased up to 20 or 30 in.

In the case of the 1:2,500 3 minims were used at first and increased gradually to 10 or 15 minims. These injections were given in one eye twice a week at first, then on alternate days, then daily. The time selected for giving the mercurial injections was generally after the patient's supper at 6:30 or 7 pm.

The patients were not necessarily put to bed.

It was used in all Syphilitic cases, actual or suspected, in corneal ulcers, in all uveo-cyclitis retinuous.
Tonicine - was used in great deal at the Kent Co. Ophthalmic Hospital for all external and corneal conditions and for Glaucomas. It was used both externally in the form of ointment or drops and internally as a subconjunctival injection 2 or 3 times a month. It was used together with silver nitrate and Salt Solution modified from Mountfort-Runcie's prescription for cases of Retinal Detachment. It causes after the first two or three applications - a great deal of chemosis, but not much pain. The chemosis easily subsides under warm fomentation.

In any case whether there is chemosis or not, warm fomentations are placed over the eye, as it is found, especially in the cases of Intestinal Retinitis, that the tissue changes are more rapid and the progress more marked.

In the K.C.O.I. it was used alone chiefly here it is used with Salt Solution and 1% acetic.

It is therefore used in

Intestinal corneal opacities
Retinal Detachment
Glaucoma
Acute & Subacute Glaucoma (together with Atropine, etc.)
Haemorrhages sub-conjunctival & intraocular.

[Signature]
Pilocarpine nitrate is to the subconjunctival fossa.

Cyanide injections what the warm fermentation, are to the poison injection. Pilocarpine by its complete action on the secretory system aids in elimination of products from the tissues. In most of the cases where Pilocarpine was used the change in the patient's condition was noticeable from day to day. It should be mentioned that Jaborandi extract, the substance or extract is very unsatisfactory and uncertain. The reason is supposed to be due to the fact that these preparations besides containing Pilocarpine contain an antagonistic jaborine, which resembles atropine in its action. The folk jaborandi in the form of a decoction used to be given at first but for the above reasons was discontinued and its place was taken by Pilocarpine nitrate which was made up so that 24 minims contained one grain that is 20 grains to the one.

It is perfectly harmless and if given with reasonable care can be most beneficial and it is a useful adjunct to the treatment with mercury cyanide. It is always safe to commence with a very small dose to get the measure of the patient so to speak one tablespoon or one tenth.
If a grain forms a very safe quantity to commence with, and from the manner in which the patient reacts to this dose one can form an idea as to what their next dose may be, the rate of increase and the time between the administrations. It is important to bear in mind that Pilocarpine does not in the ordinary doses interfere with the dilatation of the pupil, that is, with Atropine.

In the case of Retinal Detachment in old men, treated with the Pilocarpine Compound, if the reaction was too vigorous and the patient's cardiac system seemed somewhat depressed, the treatment was to give

Fr. Belladonna m x

Sft. Arumon: Ammon: m x

As: menthe: Pip. ad 3.88

To be given after the height of the sweating.

Pilocarpine is described as causing profuse salivary secretion, I can safely say that in no case where proper precautions were made for the patient to sweat freely was there profuse salivation, and this conclusion is drawn after injection into more than 100 patients.
The "proper precautions" consist of warming the room to be, for more closing the windows to keep out cold air, two or more hot bottles on the bed and several fresh blankets. Giving the patient a hot drink - milk was the given at first, but in this hospital we gave

Syr. Cannum. 3 x
half cannum. acet. 3 x
Aconitum 3 x

The acetate of cannum gives the
sought a peculiar odour, but the
taste is masked by the cannum. This
is given to the patient very hot. He
rests on his elbows while a nurse allows
him to sip it from a vessel or a
feeding cup may be used. There is a
red blush on the patient's face within two
minutes of the reception and within five
minutes he ought to feel hot and his
skin to be moist; that is, his
body has been a satisfactory one and
if proper provisions have been made
the lachrymal secretion is slightly
or not increased. The urinary
secretion not at all.
I have taken as my limit, or rather as the patient's limit, the symptom of sickness. This is due to increased gastric peristalsis. The dose is gradually and uniformly increased until the patient is sick; then the dose of the night before is given and adheres to; no further increase being attempted. In one case where this mark was accidentally overstepped there was vomiting, griping, and a feeling of depression which soon passed off. This mark should not be overstepped in patients with flabby heart muscle or indeed with any cardiac lesion or abnormally as the uneasiness and discomfort in the cardiac region is apt to be very distressing and sometimes alarming. The depression usually lasts from 24 to 48 hours in these heart cases. I should be remembered that hypodermic injections of Atropinum do very little good in these cases, the prescription above mentioned is far more effective.

It is remarkable in the cases of interstitial nephritis (epileptics), with deafness, how the latter improves decided by under the pilocarpine medicinal treatment.
In this hospital (W.F. Burroughs and Williams) tables have been used for the injections. They are reliable and constant in result.

The cases that were most benefited by the pilocarpine nasal nasal treatment were Trauma, Rheumatic and Gouty uveo-cyclitis with or without hypopyon.

In the cases of myopiaetic and Interno-mise-cyclitis - it was merely given as an adjuvant and as a stimulator and increases of tissue changes.

In the cases of corneal ulcers:

Toxic anaesthesia, Haemorrhage in the vitreus, Optic Atrophy, Subconjunctival ecchymosis.

It was not used.

In Subacute Glaucoma it was used with Adrenalin Chloride 1:1000.

It was therefore used in Corneal operations, and in all uveo-cyclitis condition widening sympathetic ophthalmia or Traumatic Induced cyclitis and also Glaucoma.

In Retinal detachment it was also used.

In all the cases the injections were carried out at a series of five except when the injections were on alternate nights.
in these cases the series was ten injections.

In the pilocarpin-mercurial treatment the series was also five—i.e.,

the cephalic-acrid injections were made every other night—the 1st, 3rd, and 5th

while the pilocarpin injections were made every night then there was a break

of one or two nights according to the

result and to the patient's condition.

In the cases of retinal detachment the patient was kept in bed six week.

During each of the six weeks there was a series of five injections—two

other two nights were free.

In effect in the pilocarpin treatment which the female patients especially never

fail to draw one's attention to is the increase in growth of their hair. The

growth is not only more luxuriant in quantity but also in quality.

The patient's also increase in weight and their general well being is improved.

The cases of congenital syphilis, diseases complicated with deafness all showed diminution

of the deafness after the pilocarpin-mercurial treatment.
Adrenalin Chloride was administered subconjunctivally in cases of chronic and subacute glaucoma, working on the hypothesis that the disease was due to an abnormality in the glaucomatous portion of the visual tract with a perversion of its secreta.

Together with adrenalin, stramonin was at first given; latterly, pilocarpine in very small doses has been given subconjunctivally with better result. Aching tenderness, high tension hemiopsia of the media all improved.

Parke, Davis' "Codreinice" (cocaine 1/2 + adrenalin) may also be used.

Streptomycin Sulfate was injected subconjunctivally in cases of toxic amblyopia and a few cases of optic atrophy.

It was at first given alone commencing with doses 1/1000 in grain but it caused so much pain that some 1/10 stramonin had to be injected with it.

With regard to the other drugs, atropin, tincture of sago and a few others they were given only on one or two occasions and definite conclusions could not be drawn about them.
Fibrinolysin was used along with Pilocarpin in a couple cases of Interstitial Keratitis. It is a compound of fibrinolysin and caustic salicylate. Ily attention was brought to it by an article in the R.M.J. of Nov. 1870 recommending it in cases where scar tissue is to be removed or softened. It is favourably mentioned in Kellner’s Hand book of medicine. At the R.C.O.H. I first gave it a good trial in a case of contractile contraction of the auditory ossicles. The result was indifferent. Here (the R.O.H.) I have used it in eye cases. It is injected along with Pilocarpin. Fibrinolysin will not stand exposure to the air. It is recommended by Kellner in skin disease.

The dose used for the eye cases was from 10 to 20 minims. It caused no disagreeable symptoms. It was injected in one case in the temple, but so it caused a good deal of pain there. In the next case it was injected into the loose tissues of the posterior triangle of the neck. The injections were made on alternate nights.
Saline Solution [4%] was always used along with Bismuth. It was used with bromin, with Adrenalin Chloride, and with Novocain on different occasions and in different patients. It was chiefly used in cases of Ophthalmia or Syphilitic Keratitis. It was also used to stop the changes, for example after a series of five subconjunctival injections of mercuric cyanide a change was made to Saline solution for five injections. In the cases where mercuric cyanide persistently caused pain and oedema, Saline solution was administered instead. The quantity injected varies from 1 to 2 minims. It was always customary however, to commence with 5 minims. At the H.C.O. Hoopse it was used alone for corneal ulcers chiefly the ulcer superficial or Syphilitic ulcer. For hypopyon ulcers the cyanide of mercury was used as recommended by Prof. Barier (before the Br. med. Association [Lausus Aug 17, 1901].

If (Saline injections) was also given in cases of Herpes Corneae Superficialis, Keratitis Profunda. Together with bromin it was used in one case of Sclerotising Opacity of the Cornea - it might be used in the rare cases of Conduct or nodular Keratitis and Spring Caries (examples: Night Scleria we had at the H.C.O.
The saline injections were used in many cases of
vitreal opacities — the result in these cases was
very marked, alone or combined with bromine.
The effect could be increased by increasing the
strength of the saline solution to 5% w/v or to
2% w/v and a "warm" fomentation on the
eye for one hour — while, in my mind, the greatest
effect of all was got with saline, bromine and
fomentations, with a series of pilocarpine injections.
This treatment cleared away vitreal opacities in
chronic and subacute cases — it was not attempted in
acute cases. The mode of action may be explained
by looking at it as a counter irritant or
as a means of treating vascular reaction in cases
where this is needed, although this is the usual
explanation. One cannot help feeling that
the lymphatic action must play some part
The injections used to be given in venous capillaries
but this is not necessary. Moreover, a large
amount cannot be given; whereas injects
through the upper fornix into the cellular
tissue of the orbit, as much as one dram
can be given this has been given.
I have not come across any instance of
inflammation, sequelae of the injections e.g.
ecchymosis, conjunctivitis, swelling of conjunctiva, or damage
of conjunctiva by injected.
To sum of salicic injections have been used in:

1. Chronic irral diseases - Choroidal inflammations
   Rheumatic & syphilitic & other Indurated, with the accompanying
   vitreous opacities.
2. Certain Cornal diseases - chiefly interstitial, non syphilitic
   Cases, ie. Stromalus, Herpes etc.
3. Alternately with Mercurii Calamine, in the pelocarpic
   mercurial series - in the syphilitic conditions.
The Preparation of the Patient

A saline enema was given each night while the injections were being given to ensure a perfectly free action of the intestines. The injection was made after the patient supped at 6:30 or 7 p.m. The conjunctival sac was cocainized with a couple drops of 0.5\% cocaine hydrochloride about twenty minutes before the injection at intervals of 5 minutes. Another drop was instilled immediately before the injection. The sac was washed out with 1 in 40,000 mercuric perchloride lotion by means of the "lusine" all glass eye-bouche [Down, 1870].

The syringe used was Down's all glass subconjunctival syringe. At my suggestion they made me some platinum-cadium needles curved to \( \frac{1}{6} \) of a circle, like the curved of Prof. Chene's surgical needles. This curve renders the subconjunctival injection, the easiest operation imaginable. It is the most suitable curve for penetrating the upper fornix. The nurse or other assistant retract the upper lid with a De-Maries retractor - the syringe needle is taken in the corresponding hand - the right hand for the right eye and left for left, standing on the same side of the patient.
The patient is instructed to look downwards and outwards towards his R. or L. shoulder, as the case may be; the needle is applied to the globe in concavity on the convexity of the eyeball. It is pushed upwards into the upper and outer corner of the orbit—until it is felt to penetrate the mucous membrane of the fornix—the injection is then made.

If the injection be over 10 minutes it is advisable to change the direction of the needle towards the upper part of the orbit, without entirely withdrawing it from the mucous membrane.

In corneal cases a fomentation is applied to the eye—\textendash in the phlyctenulam\textendash meniscal cases the patient after getting their subconjunctival injection go straight to bed, in a room already prepared for them.

[The advantages of this specially curved needle over others are many with a straight or only slightly curved needle the lid is often pierced, it takes longer to cut off the fornix injection may be made into the lower fornix with a straight needle]
With one, too curved — over the top of the ellipse may be penetrated. With the sausage curved the case and speed with which the injections may be made are remarkable.

The rheumatic sub-cyclical cases were usually kept in bed for the first series of five injection — the same preparation was made; the injections were given with the patient in the prone position.

Those getting mercuric cyanide injection 1:250 or 1:2500 were nearly all given silver and potassium nitrate injections. An interval of half to one hour was allowed. Then the posterior triangle of either side of the neck was cleaned with soap and water, then with ether and finally with a broad wong of 1:20 carbolic acid lotion.

The room was previously warmed by a fire or other means to keep the patient warm, that bottles 200° were placed around the patient. The hot water bottles or bags were covered in flannel wrappings. Rooms with fireplaces were most acceptable as they allowed of better and more continuous ventilation. As a rule, the patient's temperature was taken before the injections. The patient was kept between blankets in every case.
The injection was then made into alternate posterior triangle each night. In one case where fibrolipin was used the injections were made in the temples.

After the injection the patient was given half to one pint of a hot drink either hot milk, hot water, hot tea or hot lemon water along with the 60 to 90 minutes of Leucon Aminoniaci Acetate or as mixture. One hour after the injection the patient was thoroughly dried with a hot dry towel and then their blanket changed.

The patient were allowed up at the usual time the following morning, with the exception of the cases of fatal detachment.

The first dose was always small, e.g., a tablespoon. As a rule it was increased until the patient showed signs of sickness, depression or cardiac uneasiness was treated with the prescription above mentioned.

Excessive sickness was very rare, where it occurred draughts of lukewarm water were given by mouth and a hot water (rubber) bag was applied to the epigastric.
If there was much pain in the eye after the subconjunctival perineural injections of iodoform or belladonna fomentations were recommended, especially if there was much oedema. If this did not relieve pain 1/5 to a grain of morphine was given hypodermically.

The oedema usually came on two or three hours after the injection; the pain came on soon after the injection.

The patient's vision was taken after each series of five injections.

Age. The patients were between puberty 12–16 and 70 years.

The heart and lungs were always examined before the first series of injection.

Only two or three patients made any attempt at active resistance to the treatment. In these cases, the patient was firmly held down—Clarks Eye Speculum was introduced the globe fixed by a fixation forceps and the injection made as above described.

It will be seen that in ordinary cases an Eye Speculum was not used, because firstly it was inconvenient but also secondly it prevented the injection from being made directly into the fornix and rendered it a very difficult matter in many cases.
The diseases treated were

Diseases of the Cornea

Keratitis Interstitial (Syphilis)  \( \text{Hydro} \)

" Profunda, "

" Tuberculosis Strumous "

" Ulcera, etc. "

Corneal Ulcers  \( \text{Hydro} \)

" & Hypopyon "

Diseases of the Urinary Tract

Hyzaulis  \( \text{Silica} \)

Indurated  \( \text{Silica} \) & \( \text{Sulfur} \) & \( \text{Hydro} \)

Choroid. Indurated  \( \text{Silica} \)

" Inflam

Sympathetic Ophthalmia

Other Diseased Conditions

Glaucoma  \( \text{Silica} \)

Retinal Detachment  \( \text{Silica} \)

Utrous Opacities  \( \text{Sulfur} \)

Forie Amblyopon  \( \text{Sulfur} \)

Optic Atrophy  \( \text{Sulfur} \)

Hemorrhage Subconjunctivae  \( \text{Sulfur} \)

" Intravascular  \( \text{Sulfur} \)
Conclusions:

The following conclusions are based solely on the results achieved after treatment of my own cases. They depend not entirely on the actual improvement of vision before the patient leaves hospital but also on the appearance of the eye — healthier look of cornea, iris, etc., improvement in tension of the eye, general improvement of the patient himself, increase in weight, increased hopefulness, and regarding his condition, etc.

I have made very few references, and these are nearly all from current medical literature, e.g., with reference to the use of Isopropin.

I quote from B.M.J. of Nov. 1872 — Hauncet Med. Soc.

References are also made to the meetings of the Ophthalmological Sections of the Br. Med. Association, as reported in the hauncet, e.g., Aug. 17th, 1874 — Sept. 26th, 1876.

In the latter of which mentions is made by Dr. Brencham of the use of this compound treatment in Sympathetic Ophthalmia; and Jones of Cambridge, of the use of 0.25% Sublime of Mercury injections (conjunctival) for the same condition.
It may be concluded that

Saline Solution is useful in all cases,
when the nutrition of the eye is below par
and when it is apparent that an increase
in tissue change or a lymphagogue action
would be beneficial — in any case it is
a harmless and painless treatment and is
a desirable adjunct to other lines of treatment
both general and local.

The effect is intensified by ionic, by
Pilocarpine and by increasing slightly the
strength of the Saline Solution.

the nutrition of the eye invariably
improves after a course of treatment

in the anterior keratitis the specific
becomes less dense and the improvement
of vision is "fair".

in the "specific" cases it may with benefit
be given alternately with the Hyoscine
Pilocarpine series

Ceratitis, macular retinæ, sclerometà resulting from
some traumatic ulcers are not at all benefited.
Conclusions (cont.)

That corneal interstitial opacities are very slowly removed with $\text{Hg(CN)}_2$ injections, the process is tedious, and the results disappointing.

The effect is not increased by electrolysis of the cornea, both forms of treatment applied together are equally disappointing.

The cases of keratitis-icterus, where an artificial coloboma of the iris has been formed, the nutrition of the eye seems somewhat increased after several series of saline injections alternating with mercuric cyanide.

Corneal ulcers improve considerably under treatment with mercuric cyanide injections and these cases with hypoppyon, chose these hypoppyon very quickly. The speed with which a loose deposit like a hypoppyon is removed, is markedly noticeable.

It is possible that the hypoppyon acts here as a counter-varicose exciting vascular reaction. In bad corneal ulcers with hypoppyon subconjunctival mercurial injections give better results than paracentral section, drainage with horse hair, tapping or multiple puncturing of the cornea.
All forms of leucosis are improved by injection of Mercurii Gly pra and Pilocarpine nitrate—what I shall refer to as the "Mercurii-Pilocarpine treatment."

This improvement is especially marked in the cases of "Sympathetic" Ophthalmia, which commences as a definite leucosis and is said to be caused by a definite bacillus (V. Report of Ophthal Society, meeting, Sept 1908). The "sympathetic ophthalmia" or infectious cyclitis. The aetiology becomes clearer; the leucosis disappears and the vision although it does not improve in the same proportion does not follow the retrograde movement. It otherwise would.

The mercurii pilocarpine treatment is therefore a most useful adjuvant in the treatment of this intractable disease and it is deserving of persistent and in every case of infectious cyclitis.

The treatment must be prolonged. It must extend over many months. The injections should be made in series with a slight break between and these series should be in act with a longer break between each set series.
The most rapid improvement has been seen in the cases of Rheumatic and Scurvy bedsore treated with the Mercuric Pilocarpine series of injections - the benefit was unusual to be their aided or annoyed with drugs.

An opportunity was offered for having a control case which was treated by every other treatment except the Mercuric Pilocarpine series - the patient was treated with Salicylates then Mercury - then Soluroel [ArM]

the treatment extending over many months.

one is confident that if the patient had been allowed to have the Mercuric Pilocarpine series, he would have benefited considerably. If however serves as a good case for comparison with the other Gouty and Rheumatic cases treated with the Mercuric Pilocarpine series. In every case both in the control and the others, the local treatment was the same, viz. heat, ointments, and hot Eidi Boracici.

It can almost be definitely stated that to treat these diseases with disregard for this line of treatment is to neglect doing the best for one's patients.
The same remarks apply to cases of Rheumatic and Ptyalitic diseases without Oedema. To get the best results the treatment must be commenced during or after the first or second attack.

Traumatic subcapsules also improve under this treatment but the result is not as marked neither is the improvement so rapid.

Conclusions have not been formed with regard to treatment of diseased conditions of the choroidal portion of the liver tract. It may however be inferred that inflammatory Endoats or Choroiditis with lymphatic deposits or Endoats would be improved satisfactorily.

A good deal of the benefit derived from this treatment in cases of Infective Oedema is due to the removal of Endoats, depositions, or infiltrates from the liver tract, in the ciliary body and choroid.
Primary Glaucoma

"Glaucoma" is closely connected with the last named diseases with the exception that it remains at the first stage of inflammation i.e. congestion. Glaucoma is a condition of presbyopic shift, and it may be etiologically referred to as Congenital Presbyopia and a Presbyopia that is abnormally high for the person's age.

The condition usually comes on in small hypertensive eyes in flabby or phlethoric women or men whose hypermetropia and Presbyopia have been allowed to remain uncorrected. Congestion is the important factor, and this congestion first shows itself in the uveal tract and especially in the ciliary portion of it.

This congestion is responsible for the excessive secretion from the ciliary glands also for the perversity or abnormal secretion; for the vitreous opacities; for the malnutrition of the lens and its subsequent degeneration; for the blocking of the corneal angle with its accompanying high tension, venous stasis, ciliary nema-tite. Most of the other symptoms arise from the high tension which we have seen comes primarily from the
swelling and congestion of the ocular process and muscle - this can be seen macroscopically. Accommodation is considerably reduced this puts a further strain on the patient's eye causing further congestion - and this it continues in a vicious circle.

Any extra exertion e.g. stooping to wash, excessive near work, worry, anxiety or mental anguish causing congestion; want of proper rest, indigestion in meat, all will suffice to increase the congestion and bring on what is called an acute congestive attack.

All this has been written with a view to showing in as brief a manner as possible the reason for the administration of Adrenaline Chloride and Scopolamine or belladonna in acute or subacute cases.

The conclusion one has come to is that the treatment is of undoubtedly benefit in acute and subacute cases. The majority of the cases in which it has been used have been sub acute cases.

Parke, Davis' 1:1000 Adrenaline Chloride is the preparation used.
It consists of Adrenalin Chloride 1 part
Phyloplastic Sodium Chloride Solution
with 0.5 per cent Chlorate 1000 parts
This has given better results than
Oppenheimer's Solution of Adrenalin or even
Barron's Oellen's Adrenalin — The latter
has however been used comparatively
infrequently. Codrinine has been recently introduced
The patient is prepared in
the same way as for other subconjunctival
injections — he aconit is given with
the Adrenalin Chloride which by itself
causes little or no pain, and if given
with Bronic it is highly anaesthetic.
The usual dose to commence with
is 3 minutes of Adrenalin Chloride 1:1000
+ 5 mm. of Bronic.
or if the injection is intense 5 minutes
of Adrenalin Chloride are given.
This is given every day once in the
day. On the 2nd day 5 mm. each
On the 3rd day 5 mm. Adren. Chlor.
+ 5 mm. Bronic.
On the 4th day the Adrenalin
is increased 7.5 to 10 minutes or even 15.
In this condition one is apt to get small subconjunctival haemorrhages due perhaps to puncture. The enlarged deep veins have been noticed in many other cases but the glaucomatous ones.

The benefit of the injection are very apparent. Latterly Adrenaline Chloride has been given subconjunctivally alone and Pilocarpine given subcutaneously. This treatment cuts the attack short the patient can then either submit to surgical treatment or else persevere with it. Russian ointment for some time. The patient are all warned too, to live an even life to prevent congestions. Proper non-stimulating diet is also recommended. Presbyopia is fully corrected as well as Hypermetropia. There has never been any untoward effects from the Adrenaline treatment. One patient complained of giddiness after the first injection. Subsequent injections were not followed by this symptom. Rarely are more than five injections needed.
With regard to the Plonearpine and Bronin treatment of Retinal Detachment, the conclusions are not so favorable — the opportunity has offered itself of using the treatment in more than a score of cases, but although the immediate result was fair or good still the after result hardly warrants the prolonged and exacting treatment. Some of my chiefs have been enthusiastic about the treatment and have claimed brilliant results, but I have not seen these cases.

The method of administering the Plonearpine is fully detailed above. The patient's intestinal tract is kept in activity — the rest is light. Some patients object to be absolutely supine and resume to be propped up by means of a bed rest. Most patients do not mind lying in bed for six weeks.
Vitreous opacities have been very successfully treated by means of sub-conjunctival injections of saline solution with bromine 1% or saline solution with bromine 2% or alternately.

Pericarpine injections are made hypodermically.

This treatment has been known to clear away not only fine punctate deposits but dense fibrous masses; in one case a sheet-like mass hung from the upper culinary region and waved about like a flag in the fluid vitreous. There were dense deposits round the lens and only a pale funiculus reflex, after three series of injections sub-conjunctival and hypodermic these dense opacities cleared away and a good fundus reflex could be got.

The disc and fundus details could be well seen. Very favourable conclusions of this treatment have been formed.

Fine dust-like deposits indicate a sulfanilic origin and Mercury cyanide should be used instead of the Saline Solution.
Optic atrophy have been treated with

Streptomycin hydrochloride and sulphate

as mentioned above. With regard
to the latter condition unfavorable
conclusions have been formed while
with regard to the former the results
have not been any more marked and
the progress no more rapid than in
the cases treated with streptomycin and
magnesium sulphate by the mouth.

The advantages are that the exact

dose is administered

it can be uniformly increased and
the increase observed and
unfavorable symptoms noted.

The drug is also thrown into
close contact with the diseased
nerve.

The disadvantages are that the
administration is not so easy as for oral
and that even with from
the administration causes considerable
pain and frontal headache.

The conclusion formed is that it is a
valuable method of treating those
conditions of the optic nerve.
The advantage of administering bromo subconjunctivally [alone or with saline solution] in cases of subconjunctival haemorrhages are unmodified. These haemorrhages, if left to themselves, take on an average three weeks before they clear away, and even then a haematinic stain is left for some months. Blood however clears the haemorrhage away in less than half the time.

This applies with somewhat less force to intraocular haemorrhage, chiefly haemorrhage into the vitreous. Retinal haemorrhages have not been treated.

The opportunity has not offered itself for treating hyphemas. One however suffers from the above that considerable benefit would follow as a result of this subconjunctival treatment.
Intestinal Keratitis

J.D. 13. Typically eruptive, depressed, nasal bones, hooded forehead, deaf.

Magro's mouth, mouth - all definite, signs of congenital syphilis 
was admitted (M.E.) first with acute interstitial Keratitis both eyes. The 
subsided, he was again admitted with diffuse interstitial corneal opacities.

He was treated first with

Salt Solution 1/8

Bronn 2.°

Chrom 1.°

1. what is 5 minims were injected every other 
night for five injections in the left eye. 
There was no distinct improvement.

The fingers at one foot with difficulty.

2. Second series of 10 minims in left eye 
on alternate nights. On the intervening 
nights, he was given Sepia cepae injection 
5.° to. 5.° 5.° 5.° 5.°

The improvement was noted through slight

The change was now made to Kreon

Patient got Pil Hydrarg. Cert 9 in 12.
Uncumulium Hydram & Belladon was used into the temple and workers on alternate nights.

There was a break of two nights, then Ambreine Garamide injections were commenced with Belladon. The same night ambreine garamide 1 50a with Acorn ½ was used. The injections were made on alternate nights.

1. 1st night 3 minims HCl (80%) & Belladon ¼ ½
2. 2nd. " 5 " " 8 ḥ 4 α*
3. 3rd. " 5 " " 6 ḥ 2 ḥ 5
4. 4th. " 6 " " 8 ḥ 5
5. 5th. " 7 " " 8 ḥ 5

* On the night of the second injection the Belladon was increased to 6 ḥ 1 ½, but as this caused sickness the dose of the foregoing height was given and adhered to.

Two 8th doses were given one in the 1st and one in the 2nd eye.

After each a distinct improvement in the vision was noted:

<table>
<thead>
<tr>
<th>LV</th>
<th>60</th>
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<tbody>
<tr>
<td>LV</td>
<td>36</td>
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very indistinctly, not improved by spectacles.

After a break of two nights a series of five injections on successive nights.
was made of

Abroplein + Eloparpin M xxx v g. f

Electrolysis of the Rt. cornea was suggested by the honorary surgeon, but an incision was performed instead. The Rt. eye has remained stationary since. The left eye has however improved considerably. The opacities are less diffuse and there are clear areas in the cornea above and below. Patient's deafness has also decreased to a marked extent.

The five series of injections were spread over two months. Patient had to be discharged as the hospital committee objected to patients being kept over that time except they were very urgent cases.

The increase of vision in this case was certainly good and justified the time spent over the speceial treatment. The pupil was kept under Abroplein and the patient got Cod-liver oil and Iron tonics. Patient's general health was marvellously improved.
W. F. is female. Central interstitial keratitis, non-specific. The general health and social conditions of the child were exceedingly bad. Both eyes were affected to an equal extent.

Before the injections

24 6:00 | objects appeared blurred

LV. 6:36

Three series of five Mercury Cyanide injections were given. No belladonna was given.

The 1st series was given every third night R.

The 2nd ... on alternate nights L.

The 3rd ... every night L.

3 minutes during the first

5 ... 2nd

7 ... 3rd

The reaction after these subconjunctival injections was always intense. Fomentations were applied after each injection, for all that she had to get a sleeping draught. In her case the pain became intense towards mid-night. Belladonna fomentations relieved the pain. The next morning the oedema was almost marked.
Some patients seemed to react more easily than others. At the termination of the injection

RV 6\frac{1}{2}" with difficulty.

LV 6\frac{1}{2}"
clearly.

Patient was sent home, to attend as an out-patient. The opacities decreased in intensity, they now occupy the centre of the cornea, but are smaller in size and much fainter.

RV 6 clear.

LV 6\frac{1}{2}"

Partly. A usual reduction in the height is contemplated.

the pupils were kept under.

Atrophic, patients general health was improved by Dr. Morton's firm.

In this case the keratitis undoubtedly improved under the mercurial injections.

The family history in this case was very bad, pointing to a Tubercular Streakiness. Patient had 70

Bottles and sisters three died of some form of Tubercule as well as the father.

with well marked unilateral keratitis left eye.

Mother healthy. 12 children alive no eye affections, no miscarriages in mother.

Past personal history.

Patient was fairly well developed but
cut face with a little suggestion of congenital
talipes. Phthisis pulmonis and ocular pain
were present. Left eye was the worse.

There was a salmon patch on the cornea.

Treatment was Atripia Sulph. Sulph.

25th Oct. 82. Phthisis pulmonis.

Subconjunctival injections were made
3 minutes in each eye every third day
for 10 injections.

The left

improved but the right continued

to get worse - a salmon patch

developed. After six weeks it began to
decay also. Both corneal remained

hazy for some months.

Both improved well under the
treatment. In this case the
dose of the injections was kept at
three minutes. There was little or
no reaction.
W. J. act. 16 was a similar case. One series of 5 injections was made with very poor result. 3 mmm. were injected, there was never any reaction.
Mrs. Intestinal Keratitis B.S. act 23, Braze
Potshen

For about 8 months past has suffered from intestinal keratitis since 1939. Has been inpatient before was discharged with slight improvement. But vision was so bad that he was unable to do his usual work.

On re-admission the left was the worst it was severely affected. The right was clear centrally. Patient had the appearance of a typical congenital syphilitic keratitis. If "60 < 6/60 in left finger with light. This could not be seen through right corner which was densely infiltrated and very injected than was considerable photophobia.

In this case the first series [3] was given without Acon. This caused intense pain and irritation. The second series [3] was given with Acon 1/5 there was very little pain and the improvement was marked. He was now discharged to attend as an outpatient.

His vision was now RT 6/60 L 6/60.

The injections were given in the right eye only if they were given in alternate weight.
There was no sign of congenital syphilis in this case. The patient was however treated with sub. 1-5000. mercurialem injections and mercury internally for about a fortnight - no apparent change took place. Injections subconjunctivale of Hyosc. Per. without cream was tried but the first two injections caused such pain that they were discontinued.

The Cyanide of Mercury + Acon 1-5000 + 1/2 was then used for 5 injections every second day. The result was very good. No further treatment was carried out.

John D. 17 met face, marked by syphilis, typical sore teeth, mouth, forehead.

Infiltration of both cornea not very severe. Union barely to be seen. One series of 5 injections were given. There was little or no improvement. The cyanide of mercury + Acon 1-5000 + 1/2 was used.
A healthy looking lad with


doubtful signs of congenital syphilis

admitted to W.E.I. with interstitial keratitis

of left eye with circumcorneal injection

salmon patches large deposits in Descemet's

membrane and on ant surface of iris also

with posterior synechiae

Subconjunctival injections of Clonamide

Glycade and Acorn (normal strength) were given

The injections were well borne - the

RT eye became affected while the

patient was in hospital. Five serie

of 5 injections were given, the first

two in the Left and the remaining 3 in the

Right - the attack in the RT was aborted

Patient was in hospital 6 weeks

the RT became affected after he had

been in weeks at the end of the 6

weeks both eyes were in similar

condition and the vision of both

with a close minus sphere equalized 6

It is quite possible that had

the injections not been given the

attack in the RT would have

been similar in severity to the

one in the Left
Annas P. 20  Intestinal Ulceration on well marked

Pt. slight; admitted (1931) for condition on the
left—no signs of congenital epithelio
Glary and conjunctival injection marked, some
vitreos, hidden by a dense salmon patch
phakphobia. Family history suggestive
Mother had miscarriages and one sister suffered
from the same kind of eye condition—her
brother is deaf. The Lt. became affected
while patient was in. Patient developed
severe atrophic irritation of the right
Scopolamine and Homatropine were used, when
five series of 5 injections were given
One in left and one in right
Patient was discharged for unsatisfactory
behaviour. Left improved. Lt did not

Ellen R. 13  L. Stromous Keratitis. Duration
3 weeks, no previous attacks
Glary and conjunctival injection and intense
weserular corneal infiltration. Mercuric
Oxamide 5.000 and Acoum 1/6 subconjunctivally
5 injections gave rapid and marked by good
result. Infiltration became much less
been and collected more toward the
centre of the cornea.
Maria L. age 28. Intestinal Keratitis L. Endura.
4 months subacute. Diffuse infiltration in cornea. Patient has been two cases of congenital Syphilis. One series of injections with the Gyans of mercury and Arsen was given with slight improvement.

A.J. Intestinal Keratitis L. Endura. Healthy child, evidence of mectets but no evidence of congenital Syphilis. Subconjunctival injections N0. (Bl) were given every 3rd day on L: A patch of episcleral developed on outer side of left eye. The day after each injection in L: Eye cornea is unmistakably clearer and vision better. Two series were given.

J.J. & Bone Lumen in R: Following corneal ulceration several series of subconjunctival injections were given without definite visible improvement. This is typical of a great number of cases where lio was tried with a view to lessening the opacity. In some cases pilocarpine was used and in a few Salt Solution alternated with the Mercury Gyans of Arsen. In some cases the patient thought there was improvement but in no case was there definite visible benefit.
Hills W. J. Interstitial Keratitis B.E. — another typical case of Diffuse Interstitial Syphilis; disease of the cornea, commencing at the periphery and extending towards the centre, no ulcer was apparent. The child was anaemic, growth stunted, flat nose, cutaneous at angles of mouth, deaf, had Hutchinson teeth. Ophthalmoscopic of mercury was used here, 1-3mm.

3 series of five injections on the left and 2 series of five injections — right. During the course of the 5th series on the Lt. the patient for some unknown reason developed a hypepyrexia in the eye — it cleared away in a day or two.

2v. P. 12. Keratitis Profunda Rt. The patient had an infiltration in the cornea or deep layers of the cornea toward the centre. There was no spreading towards the margin. There was no sequel of Conquering Syphilis. Subconjunctival injections of Saline Solution and Mercuric Cyanide were given on alternate nights. Bismuth was included in both cases. Two series of injections were made with considerable benefit.
Maud C. 15 Access. Intestinal Peritonitis

With resulting haemorrhage, patient was admitted into the Hospital for the purpose of trying the effect of subconjunctival injections on these haemorrhages. Both eyes were affected.

Patient had been treated for some time for Congenital Syphilis.

Subconjunctival injections of

1. Saline Solution + Bovine albumin 4oz. 2oz. 1/2 oz

2. unst. guinea f. mercury 1-5 000

were administered on alternate nights.

3. Thrombopoeic injections were also given every night.

After 5 series of J.5 injections into the worst eye the R.E. the improvement was not definite enough to warrant the patient staying in over the 6 weeks (hospital) limit.

Patient however, attended as an out patient and a fortnight after her discharge there was an unnoticeable improvement, but not with regard to the dense haemorrhage. That cleared away was the punctate interstitial deposits around the haemorrhage gave the latter its hazy, undefined edge — a visual iridectomy was contemplated.
I a W 8 Schoolgirl admitted into W 8

suffering from R t. Intestinal Keratitis, no sign of Congenital Syphilis. There is very little vascularization of the cornea. Duration was four weeks prior to admission. Patient was treated with Subconjunctival injections of Carvacryl with Atropine 1/1000 Hydragyl 0.3% gtt b.i.d. In this case after one series the infiltrate was reduced more dense to an a small white patches in the deeper layers of the cornea were all that remained — only one series of five injections were given.

Patient was readmitted soon after, with the same condition in the left cornea, heavy subconjunctiva, vascular with white scar patch in the center and lower side Subconjunctival injection were given in 5 series 25 injections in the left. The cornea cleared very quickly especially at the centre and lower part — the most difficult part to clean was the centre.

Rx 1/60 not improved by spectacles

Rx 1/60 slightly improved by minus sphere

It was decided to complete the treatment with two series of Beline Solution and Chlorocresol. But patient's departure interrupts the first series of five injections.
Ann W. 64. Intestinalile Keraítes admitt to 16th
with the history that a week ago she was at school and was unable to see the blackboard and copy book. Then the Rt became inflamed. The Lt was previously inflamed in the summer.

Left eye was enucleated when patient was 3½ on account of Staphylooma of Corner.

Phthisis expected, no signs of fungus present.

Pt did well. No signs of recovery. Several times the case was thought to be one of Sympathetic Ophthalmia. Dr. Hunter examined her. For some time with mercury, alcohol, etc., but the operation the incision pain and the photophobia increased. Subconjunctival injections in series of five were now commenced, from this time onwards the condition improved wonderfully.

After two series the corneal haze was very much less. The slight centrale 'marea' was the portion that was most difficult to remove.

Rt. 6/20. 3 - 2 = ½. Shortly after her discharge the vision improved to
6/12 and T. 10.

In this case it is mentioned that some resolution of the leucomata was obtained.
Elaie S. age 74. W. S. O. admitted with the diagnosis of vascular keratitis. There were well defined deposits of lymph on the posterior surface of the lower part of the cornea which was firmly infiltrated. The iris was tied down supero-nasally and on either side of that when treated it had the appearance of a triangle with the apex upwards. There were also yellowish deposits on the iris. The posterior synechiae were not loosened by Atropine.

The condition was present 3 months before admission. There was slight pain and much photophobia. This was the first attack. The left had never been affected. Patient was treated with Atropine and Paludrine in acute. Then with a course of a series of Atropine and Mercury injections alternating with Salt Solution. The series of Saline Solutions were accompanied by hypodermics of Mecamine. The strength of the Atropine Mercury in this case was 1.2500 with 10-3 minims were given at first then two 4 minims and five 0.5 minims. There was a good deal of reaction after these injections. The improvement was slight. The Saline solution contained two per cent of Mecamine and 1% Iodine.
Annie L. sent into W.E. with the diagnosis of vascular keratitis and punctate keratitis. Patient was 15 years old, but all examined. There was a history of the same kind of condition 2 years ago. On admission both eyes were affected, the left being the worse. There were very few subjective symptoms, there was no pain only a gritty, burning feeling.

Left cornea very hazy. The haziness not being equally distributed there was marked circumcorneal injection. There was large flat deposit on limbus, membrane, pupil small and irregular; anti-chamber deep.

Pt. in the same condition as the left only less marked.

There was no family history. Importance, her father was not alive but the cause of his death was unknown. He died of syphilitic disease or tuberculosis.

RV 6/24, \\
L.V 6/20.\textsuperscript{1} Acuity = \textfrac{2}{20}.

With difficulty, not improved by glass.

Patient remained in Hospital a little over two months. She was treated with subconjunctival injection from the very first day after admission.
The first week she had a series of 5 injections into the left (the worst eye) of sodium chloride solution:
5 m. 5 m. 6 m. 7 m. 8 m.

The second week a series of 3 injections into the right eye of the same solution, with better results:
10 m. 10 m. 11 m. 12 m. 13 m.

The third week a series, 3 injections into (same) right eye [13 m.]

At the end of this series, the improvement was marked. Patient could see 6/18.
No injections were given for a week, the right eye then became very inflamed, and the cornea was decidedly hazy.
There were however, in further deposits on the posterior corneal surface.
It was now suggested to use mercury.

The fifth week a series of five injections of mercury cyanide, 1 scw was given in the right eye.

Posterior: Membrane 3. 5. 7. 8. 9.
This caused great improvement in the right eye which was surprisingly clear, and the deposits in the posterior surface of the cornea were almost entirely absorbed.

The eighth week a series of five injections was administered in the left which was in much the same...
Condition as on patient's admission. Grymde of mercury (with Acorn) 1-2500 was used. Pilocarpine nitrate was administered hypodermically each night after the subconjunctival injection.

The result was definite.

The seventh week a series of five injection of

Grymde Eyamide 1-2.500 (with Acorn) was administered with Pilocarpine nitrate.

The result was equally good. The devermato was much less.

During part of the eighth week Pilocarpine

injections were given alone.

Besides these injections Hydrosol 0.5% was given three times daily into both eyes. Al Stigrace 0.1% was given twice daily.

At present R. 6/18

L. 6/20 early.

She now became an outpatient.

The yellow ointment of mercury ointment was given to her to use at home.

Patient had no symptoms of mercurialisation. Her general health also improved. Especially after she had the Pilocarpine hypodermic injection.
Mary S. 12. Admitted into hospital suffering from
Pterygium Keratitis — duration — two or three
weeks. Several crops had come out at
the cornea scleral margin and on the
cornea. The child was delicate and obviously
underfed, there was much photophobia, lacrimation
now and culinary injection.

After a week of tonic treatment and
Atropine sulphate to the eye the condition
improved. The ulcers caused by
the Pterygium did not however
clear away, it was therefore decided
to give her some injections of
Acridide of Mercury 1/5000 with Atropine 1/10

A series of five injections was
given to the left eye with good
result. The photophobia became
much less. While patient was in
the hospital the Right eye became
affected as though an attack was
coming on it, but it was possibly
only a conjunctivitis as no
Pterygium appeared.
Ada J. aged 13 another case of Chylemennea Keratitis present in both eyes on admission.
Duration 2 months – patient had been treated for two months at the Walsall District Hospital without any benefit. On admission to the hosp it was a marginal ulceration condition of both lids. There was conjunctival injection and there were fine punctate ulcers near the corneal margin with some vascularization. Patient's visual condition was fair.
She was an unhealthy looking child. She was treated with Tonic treatment. The left eye virtually down under treatment but the right eye became worse and an ulcer serpens developed. This was an ulcer with a well-defined crescentic growing edge – growing vertically across the cornea. It was also very deep.
Subconjunctival injection was used. Patient did not get a whole series of injections as she was improving rapidly.

At 6 1/4.

Patient is much improved in general health.
C. I. male Sept 26. Strato - mates 13th Eyes
Patient confessed to having contracted Syphilis a couple years before. He remembered having a rash, a sore throat, etc.
The lymphatic glands behind his sternum were hard nodular and movable.
On admission conjunctivae inflamed, bilateral ciliary injection.
Cornea mushy with small deposits on the posterior corneal surface.
The iris was very irregular, shaped like a right-angled triangle. On its anterior surface were numerous yellowish, round deposits near to the free edge then the fixed edge.
No fundus details were obtainable.
With oblique illumination, the deposits on the iris could be better seen and spots of pigment were noticeable on the anti- surface of the lens.
There was mild, much pain or unconscious.
The condition was similar in both eyes. The patient was kept well under mercury. Both temples were bleached from time to time. This reduced the congestion.
The series of sub-conjunctival injections was given without any definite benefit. In the mean time, injections of mercury were tried and continued up to the time of patient's discharge from the Hospital (K.C.O.H.) no change had taken place in the size or position of the deposits. He was given the order of mercury to take while at home.

The vision of both eyes was 6/60. Slight, but noticeable. It is probable that had the ill-timed eyewash injections been persevered with, the process of resolution might have been quicker, but the eyes reacted considerably as the treatment went along. The discharge, the lid became edematous, etc., and the condition of the eye seemed aggravated so it was decided to allow the acute stage of treatment to remain until the acute or subacute stage had passed off.
Corneal ulcers with and without Hypopyon

Charles E., miner, age 30, struck in left eye
with a piece of coal, attended to B. R. Hope
two days after the accident with an
ulcer directly in the centre of his cornea.

The ulcer was as large as a 6 mm. pupil
and was fairly deep. The whole eye was
inflamed and very irritable. It looked as
if he might have a hypopyon at
any moment.

The conjunctival sac was cleansed out.
The ulcer irrigated and an injection
of 5 minims of 1,000 E. of
chloramy was made into the lower
 fornix. This was repeated for five
days - one injection a day.

It was with surprise that one
noted the rapidity with which the
inflammatory condition subsided.
The injection both chemically and conjunctivally
was most readily less the ulcer,
was practically healed - only a
very small amount of Atropin 0.50
one drop three daily warm pads
were used after the injections.
William H. Act. 17. The ulcer
with an infective ulcer of the cornea. The ulcer
proved most intractable; everything as
tried the actual cautery, the galvanic
cautery, chlorine water, absolute alcohol
acetopheone (Benzyl-Acetvl Peroxide)hydriume.
but the ulcer made no attempt to heal, indeed
at the end of the 3rd week a well-marked
hypopyon appeared, the whole eye was inflamed
and exudative. Patient was put
in bed and a series of subconjunctival
injections of mercuric cyanide was
commenced. Atropine was continually used.
that is during the 2nd week. The stay in
hospital he had five injection
m v m v m v m v m v

Along with the subconjunctivals he had
Acetocarpine hydrocortine injected hypodermically
for to go 1/8 8 1/6 go 1/4 6 1/3

The eye improved considerably, the
Cornea became less hazy except
in the immediate vicinity of the
ulcer, which was a small deep ulcer. (In n.80)
to the temporal side of the centre
of the cornea.
The injection of the conjunctiva was continued and the hypopyon was entirely absent. The patient's health was excellent.

The following week, the patient's 6th week was spent in hospital. She was given a series of pilocarpine injections alone for $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$, $\frac{1}{7}$.

After $\frac{1}{3}$ of a grain was given, it was found that the patient's limit had been reached so that a drop was made to $\frac{1}{4}$, which did not cause paresis or depression.

During the following week, the 6th week patient had subconjunctival injection of mercuric chloride ($\times 8$) every other night and pilocarpine each night for five nights.

At the end of this series the eye was quite acute, and the patient was normal in appearance. The ulcer had practically healed, a few vessels from the temporal side of the limbus went towards the ulcer. Patient was discharged at the end of the 7th week. The ulcer was healed. The infiltration into the layers of the eye was around the ulcer had disappeared.

$11 - 10 = \frac{6}{24}$ slightly improved by + cyclo.
June 3rd. Act 76 enucleate right adnexa (w.c. 2)
with a very cold hypophyseal needle. She complained
of considerable pain. She was dashed & dashed
to left temple. The area which was a
broad, faint, superficial ulcer, below centre of cornea
was cauterized with Pure Carbolic. The
hypophysis continued to increase until the
anterior chamber was three-quarters full.
Subconjunctival injections of 0.1% of
Mercury and Aurin 1:2000, 1/8 were
administered with little or no immediate
benefit. (4) Three injections were given.
The Honorary Surgeon then decided
to drain the anterior chamber by means
of a horse hair drain. Corneas from one
angle of the anterior chamber to the other.
Patient was kept in bed. This
heroic treatment was well borne
and seemed to have some good effect
on the hypophysis which slowly but
surely disappeared. The ulcer healing
leaving a dense scar. The eye
still remained very irritable. The
result was remarkable seeing the old
underfirm patient was, especially
when compared with the last case
Handley John admitted at the same time as the previous patient suffering from Corneal Ulcer with Hypopyon.

A fortnight before admission his Rt cornea was scratched by a piece of straw he had found. For a few days after which he again became anonyg of a similar nature to the same cornea. He was admitted with marked chemosis of the Rt eye and a hypopyon of the Rt cornea.

Subconjunctival injection of Cuprarg of Mercuric were commenced early in this case, but the hypopyon continued to spread so that the Junior Honorary, Mr. G. T. M., decided on the 3rd day to drain the anterior chamber. Patient had only 3 injections. The result in this case was disastrous. The entire cornea sloughed and was replaced by a vascular membrane which incorporated the remains of cornea and lens. The whole eye shrunk, vision was entirely lost.

In neither of these cases did the mercurial injections get the opportunity of showing their good result.
The following case occurred a few years ago. A man named John was struck by a horse while walking in the street. He fell to the ground, and the horse stepped on his head. John was taken to the hospital, where the doctors diagnosed a severe head injury. John was unconscious for several days, but he eventually regained consciousness.

The doctors were concerned about John's condition, and they recommended that he be kept in the hospital for several weeks. John was given a lot of rest and medication, and he slowly began to recover. After about a month, John was discharged from the hospital and was sent home to continue his recovery.

John was fortunate that he survived the accident, but he was left with permanent disabilities. He had difficulty speaking and had trouble with his balance. John was unable to work and was forced to rely on his family for support.

The doctors were hesitant to discharge John from the hospital at first, but they were certain that he was recovering well. They believed that he would eventually be able to return to his normal life. John was grateful for their care and support, and he was determined to make a full recovery.
Many more cases of Corneal ulcers with subconjunctival injections especially when the treatment first came into general use but in the majority cases only one or two injections were given and the usual treatment was pursued with a that it would be impossible to draw definite conclusions concerning these cases.

The same line of treatment was carried out after the operation for corneal traction when the wound became septic there were unfortunately a number of these at West Bromwich District Hospital.

It was usually noticed on the 3rd or 4th day when the eye came to be looked at that the wound edge was thickened congested, covered with lymph - that there was little or no anterior chambers. The propensity with which these eyes degenerate is remarkable at work, within 10 or 15 days the corneal traction then eyes were converted.
Chas J. aged 75 suffering from Senile Cataract (double) admitted to W B 0 11 for preliminary induction. The lenses were of a similar degree of opacity and the Sr. honorary was of the opinion that a double induction would be of some visual benefit until the lenses reached complete maturity. Induced preliminary induction was performed in each eye. The Rt pursued a normal course; the wound of the left lens healed well on the 3rd day it looked decidedly irritable. The injection with conjunctival and cellular was marked. The edge of the wound was brushed with 1:2000 peroxide, with no distinct improvement. On the 4th day the victim was worse. Subconjunctival injection were now commenced — four injection were given with great benefit. The iritis subsided and the wound edge looked healthier. The ptosis induction was however not removed so that the pupil was tied down to the anterior surface of the lens.
Case 71 admitted 6th to 13th Feb.

This extraction, the combined operation was performed. The patient was very anxious at the time of the operation, and after the operation, he refused to have a pad on his eye. He very likely rubbed his eye with his fingers. On the second day, the wound looked very irritate.

The edges of the wound were touched with pure Carbolic - on the 3rd day there was intense chemosis and a marked hyperopyon.

Subconjunctival injections were now commenced - 3 minims of 1:2500 Mercuric Cyanide were injected every 36 hours into Tonic Capsule. The injection was however, too venileut to be combated and a paranphthalamin set in which proved disastrous to the eye.

Four injections were given in this case. Inunctionation of Equal of Belladonna were used. Leeching was not

Resorted to
John S., age 72 admitted 10/13/24 with double simple cataract - mature.

Patient was obvious a bad subject for operation. The combined operation was performed on the left eye. After the operation, he had to be allowed to sit up on account of his bronchitis.

All went fairly well until the 4th day when a haziness of the cornea was noticed and the iris was contracted and turbid. The tension was raised. This was relieved by the edges of the wound opening. Ciliary injection was well marked.

Subconjunctival injections were successfully resorted to in this case. A series of five injections was given of (Sublimate) perchloride of mercury 1:5,000 with acris.

The reaction was marked at first. Minims 5 were given at each setting. In this case, however, the vision was reduced by the plastic evagination. It was proposed to do an induction in the course of time.
Ann E. was admitted to the ward complaining of some

Calcutta. Left ear was acute. Pt was unwell.

The vision of the left had been nil for

the last two months before admission.

Patient was an oldish woman, fat, and

not in very good general health. It is

also important to note that there was

some epiphora in left eye, only.

Compression of the l. lacrimal sac

cured a regurgitation of clear fluid

(probably tear). There was no mucus and

no pus. The extraction was done under

Cocain and Aronin 1\% + 2\%.

Patient could count fingers after the

birth of the lens. Everything progressed

favourably until a week after

the operation when some hypopyon

was noticed, and this came on

without any warning. In the

following day, hypopyon waned

marked, and the eye was tender to

pressure. Atropine and tetracaine

were used. On the 9th day after the oper-

ation, the hypopyon was less

acute. It was now well marked.

On the 12th day, the inflamed condition was be-
but the lesion was raised almost to the
was considerable infra-orbital pain and redness
Toward night.

On the 14th day subconjunctival injections
were commenced — Five injections were
given with considerable improvement.
At the end of the series, the cornea was
brilliantly clear, wound healthy, hyperemia
entirely removed, the eye as a whole was
quite quiet. The iris was however
fixed down and besides some faint
edematous there had been some profusion.
Of capsule cells (Hygrom.) 5 minims
drops, was used.

Subconjunctival injections have been
used with good result in five other
cases where the wound healed instably
in the 3rd day after the cataract
extraction. It is possible that they
aborted an infective process. From
this limited experience we would
recommend that this line of
treatment be carried out early
in all suspicious cases of possible
wound infection after cataract
extraction.
Glaucoma

J. W.; female, 50, was attending the surgical out-patient department of the W.B.D. Hospital complaining of frontal headache, giddiness and general malaise.

She was treated for some time with "Mixture Potassii Broom" without benefit, ultimately she was given the "Mint Saloon" of the hospital Pharmacopoeia containing Valerian, Asafotida and Gentian. At length it was noticed that there was some cilium injection, and on testing the tension it was found to be +1.

She was a flabby plethoric person.

On admission fields of both eyes were contracted, central vision was good 1/6.

Her social conditions were bad.

She had to do all her housework washing, cleaning, etc., and besides that nurse an invalid husband.

She had small eyes with brown irises.

Under treatment with resorcin and cocaine, 30s, and gr. N. ad 31, frontal headache was relieved slightly. A hypodermic of morphia improved the headache.
still further and the subjective feature of the eye was less. On palpation, the tension was still apparently the same. Sub-conjunctivally, 1% adrenaline, chlorate, and cocaine were commenced.

Five minutes of the 1,000 Adrenalin +

two – – – 2⁰/₅ Cocain Sol.

were injected into the upper fornix, the needle pointing towards Sermon's canthus. On subsequent nights, the injection was made at different parts of the fornices and the doses increased from minimum 5. 7. 9. 11. to 15.

By this time tension was practically normal much to the surprise of the visiting ophthalmic surgeon. The patient was discharged as cured at the end of the first week. She was told to continue with the

Ecstasy: 200 grains. & Cocain

She did not return for further treatment.
She had been treated at home for 3 months by her Dr. for a supposed influenza attack - the head intense headaches involving the entire head, sickness, vomiting, and great depression.

No history of a temperature or definite pulmonary symptoms.

On admission 1. Eye was in the state of absolute blindness. Iris atrophied, dilated, lens yellow and pushed forwards. Vision nil.
2. Eye flushed easily and was very painful.

Right T + ? Some cutaneous injection.

Nasal field contracted only. Two excavates.
Operation was recommended, and performed on Rt.
Adrenaline Chloride and Brown's injections were unsuccessfully tried on left.
3 injections only were made of 3 min.
Posterior Sclerotomy was recommended, but not performed.
R.S. Male 58  patient was admitted on 27.8.19

With the history that five days previously, he was struck on the left eye towards outer canthus with a piece of wood while working at his occupation of key-turning. The piece of wood was about the size of a large marble. On the day after his accident, his eye was red, painful and full to the touch. He went to his doctor. He put Broken Sulphate drops into the eye and told the patient to continue the same at home. Patient declares that each instillation of the drops seemed to increase his already intense pain. He found his sight rapidly deteriorating. He used various concoctions (bread, potato, milk, sweet oil, and things of a like nature) without benefit. He was forced to come to Dr. J.

On admission, he complained of a blinding neuralgia on his left eye. Both pupils were very defective vision. General health good, has had no worries, no anxieties, has undergone no extra exertion.

There is no other cause for his condition but the trauma from.

Objective exam: He had slightly puffing Conjunction injected - well marked choroidal exudation. Enlarged tortuous sphenoidal veins. Anti Chamber very shallow. Corneal edema.
Pupil 5 m.m. stationary - well-marked black segmentary ring at inner margin.
No spontaneous movements when compared with R.
With ophthalmoscopic media very hazy.
O. Disc barely seen, sclerotic ring not made out.
No definite buckling of vessels towards nasal side. The veins seemed engorged, but the view was too obscured to note whether there was arterial pulsation or not - no cupping could be marked.
Field of h. Eye narrowed to 30° round macula.
Central vision foggy barely 6/60.
Jaccard and Cincinnati were not present.
On admission - In the evening Atropine Chloride 1 in 1000 5 min. were expected.
On the following day (2nd) pupil was 4.5 m.m.
Injection less marked. Subconjunctival administration of 10 minims was carried out on the 3rd 1/16 7 1/2 days. On the seventh (7th) day he was discharged cured - there was no difference between his left and right.

K.V. 6/12 [corrections] Hrn. +1. = 6/9
+ V. 6/12 [corrections] Hrn. +1.5 = 6/9

His improvement was wonderfully rapid and complete. Tension, pupil into chamber media conjunctive etc. all returned to the normal. Subjective symptoms disappeared.
He was told to continue with the Sulfur Ozenum 
& Geani and as he inclined towards sleeplessness 
he was given directions how to overcome that 
symptom. He did not return for further 
treatment.

This case is remarkable in that 
the undoubted Glaucomatous attack was 
due to an injury causing congestion of 
his orbital region with its consequent effects. 

It is also remarkable for the rapidity 
and completeness of the return to the 
normal except for the slight excess 
of Presbyopia. The vision was quite normal.

This case may be used to demonstrate 
the fact that medical treatment should 
be persevered with as long as possible 
or as long as the results are satisfactory, 
while surgical treatment should be 
kept in its proper place and used when 
or if medical treatment has failed.

If this is not done and surgical treatment 
be sought from the outset one has nothing 
left to fall back upon except the temporary 
form of relief viz. Sclerotomy.
Jones Sarah 54. [5.2.2] admitted with a history of constant neuralgic pain in left eye. Six weeks previously she had a similar pain in right eye.

On inspection, clear injection marked. Pupil slightly dilated and suggest reflex.

Iris abnormal in appearance and darker in tints than left.

Anterior chamber shallow T+?

Treated immediately after admission with Adrenalin Chloride and Brome as in above cases. Six injections were given, on six successive days. The last injection was 1/10 of Adrenalin Chloride and 8/6 Telocarpin nitrate.

After the 6th injection the improvement was very marked and after the sixth the eye had settled down to its previous normal condition.

\[
\begin{align*}
\text{Rx.} & \quad \frac{6}{24} \\
\text{Hm} & \quad \frac{1}{10}
\end{align*}
\]

Patient was given her full correction and told to use Esacunice ointment and on horse sensee was used while she was in hospital.
The male 50 was a fairly acute case. Sy.

With typical symptoms — high tension 241,
field contraction, media hazy, irides, oval
pupil, ciliary neuralgia, insensitive cornea,
ciliary injection slight conjunctival redness.

Patient had been feeling depressed for some
little time. Duration of symptoms was
three weeks although the severity of
the condition was not uniform. He stated
that recently he had to get his reading
silas changed twice because of
his inability to see.

On admission above symptoms were
verified. Patient was put on
morphine 5 gr., bi. in. ore, and
Butter Chloroform 5 times in ore.

This failed to relieve the symptoms.
So injections of Adrenaline Chloride
alone were tried & injections
commencing from 10 minims and
ending with 20 minims were made.

In this case there was some goodness
after the injections but not enough.

To give him any serious worry.
I. I. male 76. - a workhouse patient admitted with chronic glaucoma in R. and absolute in left. He never had an attack of severe pain. Tension of both eyes were increased.

R. 22 centim. L. 36 centim.

Patient had been in once before with R. eye but had not made up his mind to have surgical treatment carried out. He was really admitted now for that treatment to be performed.

It was thought however, that a trial might be made of the extracapsular Adrinalin treatment. A few injections were given, but with no different results.

Surgical treatment was resorted to in a case like this. It is probable that the ciliary processes were undergoing an atrophic degeneration, Adrinalin must act in this case if Chronic non-congestive glaucoma.
Mrs. S. A. Smith Aged 61.

Admitted to W.E.P. with Subacute Glaucoma of Rt Eye. She had many attacks of neuralgia pain in the same eye. Home in left.

The first attack in the Rt was more than 10 years ago. She gets depressed very easily and worries constantly about this. The sight seems to get worse after each attack. Ten years ago she had a blow in that (Rt) eye which abrasion the cornea and caused a shallow corneal ulcer, which healed fairly quickly. Patient was very stout until recently. Lately she has been losing flesh, and this has especially been the case since she had an operation at the Women's Hospital. (Operation unknown)

No family history of importance.

Aqueous injection marked T+1.

Aqueous neuralgia, painful iridescent media, hazy, cornea stenosed. Patient was put on ephrine which reduced the I slightly and improved the look of the eye.
The eye looked very unhealthy. It had a jaundiced, yellowish look.

Two injections of Adrenaline Chloride were made - the first at 9 minutes and the second at 10 minutes.

On the morning of the sixth day, papillary membranes had disappeared.

Media clear, fundus well seen.

O. Disc cupped, scleral rug present.

R.V. 1/8 1 trim + 2.5 = 9
L.V. 6/12 4 mm + 2 = 6/9

Tension perfectly normal, indeed on this day the note reads that the tension was slightly raised in the other - the left eye.

Injection was absent. There was one subconjunctival haemorrhage about 6 millimetres in diameter, due perhaps to puncturing of an inferior scleral vein.

Subjective symptoms were now absent.

Patient felt bright and more hopeful - she was told to note any alteration in the left eye and to come for treatment if necessary.
A. W. 30. admitted to 1st day complaining of pain in and around Rt eye. He knew it was caused by his eye as his vision was periodically defective, but saw haloes round lights, and if he looked straight at person he saw none of their surroundings.

Tension of Rt eye was slightly increased media were not very clear.

Patient was put on Saccharum prim. and Mucina Allba of the Homoeopathic Pharmacy. Two injections of Adrenalin Chloride were made, as patient symptoms disappeared, he did not wish the treatment pursued with.

There are a few examples of the cases treated with the Adrenalin combination - how it is part of the routine treatment:

Gargitation, Adrenalin Chloride, Drowning, and Béconia locally. If the iris is dilated, morphia of the meralgia is necessary. Pilocarpin and cocaine drops to continue with.
Indo-cyclitis

The following are a selection of cases of Indo-cyclitis treated by subconjunctival injections.

Frank, R. A. aged 22 years, admitted to W. E. S. on the 19th with the history of having been struck by a piece of tin (not metal) in the left eye. There was a small clean cut wound 4 mm long on temporal side of corneal-segment margin. The accident took place two days before patient sought advice at the hospital. He was admitted in the afternoon; there was no hypopyon then; at 6 p.m. there was a well marked hypopyon. There was no suppurative focus or ulnar body. Although, the wound was incised, with penetration. There was an incision, cornea misty, aqueous hazy, no view of fundus.

Patient has had a blow on the same (left) eye four or five years ago. Treatment was commenced with healing, atropine & tincture and continued for three weeks. During this time, the eye felt gradually worse. Hypopyon increased, desaturation...
fumetula was evident, iris was contracted, an extensive and fibrous-like deposit of lymph was observed behind the lens. (by oblique illumination)
Sub-conjunctival injections were commenced at the beginning of the 6th week. This was accompanied by Pilocarpine in alternate series, i.e. during 1st week, Mercuri cyanide (M. 2) (C. H.) was given every day with Pilocarpine intrate in increasing doses, during the 5th week Mercuri cyanide (C. H.) in increasing doses was given alone.
M. 7. 9. 11. 13. 16.
During the 6th week, Mercuri cyanide (C. H.) 1-500+1/6 was given with Pilocarpine hypodermic injections
By this time a remarkable change had been produced in the eye, the hypopyon that could not be removed by any other treatment retired before the sub-conjunctival injections. The cornea became clear, the huge vitreous, slate-like deposits
And he seen between them, at times the clear fundus was seen.

In the 7th week a series of Alconarpin injections was given alone.

This cleared away most of the vitreous opacities and thinned down the huge sheet-like mass at the back of the lens. The fundus was still clear.

Patient was discharged at the beginning of the 8th week - he attended weekly as an outpatient.

1st Week: Pupil fully dilated.

Fundus vessels more clearly seen.

Opacities getting less.


2nd Week: Improvement continuing.

Treated with Atropin gr. 111

Plasmo iodi gr x 1/10.

3rd Week: Slight exacerbation.

4th Week: Vision 2/20 fundus almost clear.

5th Week: No change. Patient intends commencing work as a tin smith.
The 4th 67 admitted with the history that he had
received a severe blow to his left eye. There
was a small corneal rupture in corner
3 mm. long. There was no prolapse of iris
but there was a 7 mm. mass of lymph on the
posterior surface of the wound. The injury
was done with a piece of coal.

The eye reacted badly to atropine
The lens became opaque owing to some
injury to its anterior capsule. Tension was
raised. A fortnight after his
admission hypopyon appeared and the
whole eye was in a very irritable condition.

Hydrocortisone and subconjunctival injection
of acetylsalicylic acid 1/10 grain 14th
were given. The 14t h and accompanied
by atropine the 2nd alone.

The eye improved very much. The
hypopyon disappeared and the eye became quiet.
Patient was discharged by his own desire. He attended the out-patient 4 & 5
for a fortnight - the condition had not
progressed favorably. He received no slight
injury to the eye, an extensive hemorrhage
was the result. He refused to be
re-admitted.
David M. aged 60 admitted to W.B. with.

Gouty Indoratitis. On admission coma, hyper, achaetous, only well marked
hypopyon, with not very marked, esteon opthalmia.

From muriaria region, opaque lens

Corneal corneal excavation Tension - ?

Slight hemiparesis to admission - a fortnight.

Patient was obviously, greatly. The

were deposits of sodium acetate over his

nural bones or on his pelvis.

There was history of an attack

in his great toe.

Patient was lected in admission and

put on Atropin gr iv ad 6.

and flowers the following mixture

B. 2 cocksure 40. ml

Potass. Bicarb gr xx

Soda bicarb gr x

Inf. Bucaris ad 35. ten in ore.

On the second day of his admission

Treatment was commenced with Mercuric

Cyanide 1/5000 rhum 1/10 and Pilocarpine

intraocular injections. Two doses were

given one of mercuric cyanide and

Pilocarpine and one of Pilocarpine alone

This entirely cured the condition. Patient was

discharged in the 4th week.
Frank F. commission agent aged 70.

admits for Rheumatic Indocyclitis of Rt eye. This was a typical case of Rheumatic Indocyclitis followed by cycles of

Duration five weeks (previous to admission). Symptoms were severe aching pain at back of head and pain radiating from

Rt E. to toes fingers barely. Patient has suffered from Rheumatism all his life. He thinks he had Rheumatic Fever when a child.

On admission intense corneal corneal injection.

In fine vision. Anterior Chamber deep.

Aqueous contains flakes of lymph.

Aneurysm over alear region Subcunpunctum.

Treatment commenced immediately, accompanied by Placaraine hydrochlorate injections, 50

otherwise treatment except Atropine Sulphate drops.

Two series of injections were given.

1st

M. N. + 20 \% 

M. N. + 50 \% 

M. N. + 90 \% .

6th

M. N. + 90 \% .

6th M. N. + 90 \% +

Placaraine hydro.

2nd This was followed by Placaraine alone 90 \%, 75 \%, 50 \%.

The condition was much improved pain

free, exitis better, injection absent.
Shoebe M. - aged 24 married, and had rheumatic subject. Admitted for well marked rheumatic fever with suggestions of acute iritis of left eye. This was her second attack. She also complained of pains in her hands and joints.

On admission - iritis, circumcorneal injection, few small, horizontally oval, cornea fairly clear. aqueous slightly turbid.

Iris - lustreless, edematous, green, marked-alar pain.

Luminal obscure vision left.

Patient was commenced on Atropine drops and Solochrome tablets; improvement was slow, accordingly, one course of Solochrome injections was given.

From - 6/10 to 6/8, S. and S.

The result was very satisfactory. Patient was discharged at the commencement of her third week in hospital.

She attended as out patient. Her improvement was maintained and vision improved to 5/10. S. and S.
Artium 73. Act 35. Admitted to 1673. 8 w. with
Indigibles of both eyes. There was some
difficulty in deciding whether it was
Rheumatic or Syphilitic. He did not contract
Syphilis. He however worked for 6 years
under trying circumstances because his employer
compelled him to stand in the damp
ground, and there was no roof so that
rain fell in on him continually. To make
matters worse he worked mostly by gas-light
and as a crew turner he had to use his eyes
continually.

The condition commenced with a general
dimness in one eye with redness and slight
pain. He was treated by Dr. Young. At first
he was given Atropin sulphate drops.
This first attack was in Mel 1902.
He had pain in his joints at that time
He was a non-smoker and only drank
moderately.

Family history unimportant. No Tubercle
or Syphilis in the 5th generation.
Second attack Feb 1904. This attack
took much longer to cure, over 1 year.

Same eye.

At the end of 1904 he got an attack in
Left eye.
He was treated at Birmingham Eye Hospital.

The vision was, however, not completely restored in 1906 July. Both eyes were painful and again sent to Young of W.B. & H. who gave him Atropin drops with very little effect. He attended for 21 weeks then he had a wound at the eye hospital in the Midlands but felt no benefit. He returned to W.B. & H. and was admitted.

He was put thoroughly under the influence of mercury

On admission both eyes were injective. Left pupils contracted and irregular. Left eye very unstable.

The attacks of pain (according to patient's statement) seemed to shift about from eye to eye. The pain at the height of the attack was intensely severe.

Vision was only light perception. He could not locate direction very well.

Several of cocaine and nitrate injections were administered with very poor result.

He was discharged at the end of the 31st week and went to the...
county for a change. Patient declared that a change of climate always improved his vision temporarily. He was taken into hospital, on his discharge he could walk with some difficulty, yet about alone.

One feels fairly confident that had the mercurial-pilocarpine treatment been commenced earlier, the result might have been better. It is probable too that the faecal conditions under which the patient worked for 8 years had a great deal to do with his condition. He stated that one of his fellow-workers, in his special department developed subacute rheumatism, and many others left the job on account of its danger. Indeed, he was the only one that stuck it so long. Before the occurrence above mentioned he had noticed various peculiarities, for example, different parts of his field. He has forgotten this until he was asked about it.
Nelson B. Clerk in General Office and to remain
admitted to W.E. D. with Rheumatic Ind. eye.
This was his 3rd attack and
his third admission.
2nd attack two years ago accompanied by general
rheumatic pains
3rd attack two months ago both in same
eye - left.
4th this third attack appeared to have been
an exacerbation of the last as which
could not have been properly cared.
The first two attacks were healed with salicylates, Solurol, Atropine.
The attack was complicated by a
well marked hypopyon. The cor.
was greenish, cornea oedemous with
fusious ulcers. iritis, edema, pain, marked
Corneal corneal injection intense
Therapy injections were given during
this attack, very small dose had to
be given as patient's heart muscle
was exceedingly defective. 4 Phloracetic
injections were given and next morning
Gyande 1 1000 (0.001) injection
Fortunately this was enough because a
definite improvement which was well maint
Art. 77, 29. Married to Mr. J. 1st add.

Indo-cables, possibly syphilis.

Family history - Questionable

Personal history - First child still born

Second child, puerperal fever, followed by a miscarriage

Social conditions might be improved.

On admission: Ablan's injection

Eye contracted irregularly

With deposits of yellow lymph in tarsus.

T-? Pain over cervical region

Furuncles observed, vision nil.

The condition proved very intractable.

The complaints of pain and motion of vision in fit at times.

Treated with mercury internally and by injection locally with Atropin drops.

A series of mercury subconjunctival injections was given with indifferent result. Silic carbine was not given.

She was discharged and treated as an outpatient, with mercury iodide internally and injection of tarsal Hydrom on temple.
Sympathetic Ophthalmia

I have had the good fortune to have had four genuine cases of infective cycitis to treat with the mercury-pilocarpin treatment and six more cases of sympathetic irritation.

Culter Hoare was admitted to W.E.D. with a wound in the conjunctival region of the left eye caused by a pen knife which did not penetrate the globe. The patient did not come to hospital straight away, so the wound was given a chance of becoming infected. He came in the following day. There was some fulness of iris which was replaced and some iritis was instilled, and everything went well until a fortnight after. Then it was noticed that the pupil was contractile, the aqueous clouded, punctate dots on Descemet's membrane and corneal infection present. Mercury and silver injections were commenced immediately (4 drops were instilled) and a series of 4% injection were given with very good result. The sight was considerably at the outset. Vision of 6/18.
Dr. Spence in 1904. He C. O. H. stabbed in right eye by his brother with a pair of scissors. There was a fast from centrum of cornea to scleral region. Iris prolated. This was replaced on admission. An attempt was made to keep the eye. After a fortnight, the left eye showed sympathetic irritation i.e. contraction pupillary dilatation, flushing on palpation or examination. The parents did not give their consent immediately for removal of the affected eye. It was, however, removed after a week. The irritation seemed to leave the right but it was noticed that the aqueous was turbid, and the eye still flushed on examination. The fundus was assessed. There was no definite keratitis punctata.

Subconjunctival injections were given in this series of 5 injections. There was, the first, from the second and seventh. The media became much clearer, but the pupil did not dilate. It was quite regular. The iris was edematous at first, but this improved while the injections were being given. Vision improved from 6/6 to 6/20. Finally, one series of injections was given, in the right socket.
Guest Sarah amy 17 Occupation: Bookkeeper.
Mechanic (Jack Cattell) while at work
was struck in left eye by a piece of steel which
penetrated the globe. The cornea was rupture
below 12 temporale side. Iris was prolapsed
and there was considerable hyphema.
The prolapsed iris was replaced and the
Magnet (Hulse) put between the lid of the
wound without any result. Patient
was kept in bed as there was a great
deal of pain.

During the second week after the accident
the eye was examined by the Dr.
Hollway Mr. A.E. Chesshie who found
no traumatic cataract,
no view of sinus.
The patient remained in a month without
any improvement. The vision
remained very bad — nearly, light
perception and on examination
Hyaline was mapped. There was
swellness on palpation. It was then
suspected that a foreign body must be
in the eye, and enucleation was advised.

This course was definitely urged
because patient began to complain
of times, if vision of the R.t. eye, which became flushed towards night. There was no contraction of right pupil.

Left was enucleated five weeks after the admission - a soft body a fine jelly. I in length was found perforating the sclera behind at about the centre of the eye to the inner side of the orbit near entrance. This did not improve the R.t. attachment steadily worse from day to day. Attention was now entirely directed on the eye.

She was brought under the influence of mercur. internally and by injection. This was continued for a fortnight after the enucleation. I left with no improvement. She was then given salicylates internally in 20 grain doses, then subconjunctival injections were commenced. Previous to this she was cured in R.t. temple.

The injection was commenced the 3rd week after the enucleation.

At the commencement of the injection pulp was pustular, irregular, vascular with new formation of vessels.
Acetate corneal injection marked

Some are consisted of Mercure Cyamid 1/1000 in 2 cc.

Other 1/3

The doses were Monday 3, 5, 5, 6, 7.

At the end of this series, cones and aqueous

were still hazy. fundus not

seen, with the retinoscopy mirror

a grayish reflex was obtained

The injection state marked

vis observations concluded

itself apparently

The second series was combined with Pilocarpine

Nitrate injection

The doses were

HCl: 1/100 m in 1/100 2/10 \( \times \) 3/10 4/10 5/10

Pilocarpine 9/10 – 8/10 6/10 5/10

At the end of this series, above symptoms

were somewhat less marked

vision was less than 6/200 with

weak minus often, it was

brought up to 6/40

The third series was Pilocarpine

nitrate injections hypodermically

Saline solution 4/10 and Brown 2/10

both 1/10 but conjunctivally.

The doses were
This was followed by marked improvement
with minus 3 lenses -2.5 -4. Vision improved
by 6/24.

The 4th series consisted of salt solution alone
without brown glaucon in alternate eyes.
And pilocarpine nitrate given every night.

1) Mxx + q. 1/4 4) q. 1/4 7) Mxx + q. 1/3
2) q. 1/4 5) Mxx + q. 1/2

In spite of narcotics but healthier looking.

Pupils fairly well dilated, aqueous
and cornea clearer. Visioncame as above.

The 5th and 6th series were mercuric cyanide
1.5 cc. every 10. Left 5 pilocarpine nitrate

5 cc. were Mxx + q. 1/3

The 7th was mercuric cyanide alone 1.25 cc.
with glaucon. 50 pilocarpine was given.

Loss. 3, 3, 4, 4, 5.

There was a long rest between
the 6th and 7th series, so that

the seventh series was commenced in the 70th
week after the operation of the second eye.

There was a slight vascularization at this
time. The eye was most corneal.
The 8th and last series consisted of Salts Solution 4\textsuperscript{0},

brown
Acid 2\textsuperscript{0}
Acetate 10\textsuperscript{0}

This was given together with pilocarpine nitrate 3 to every other night.

At the end of the series the vision was wonderfully good despite the difficulty one has in seeing the fundus.
The reflex is still grayish.
The vision is 6/9 partly with -3.5.
And Jaeger is slowly.

The eye was apparently quiet.
The pupil well dilated, and the aqueous and cornea clear. The irides brilliant.
95% of keratitis funicata was still present. It was decided to discharge the patient for the time being.

The flushing was absent except when patient cried too much.
The injections never caused any reaction, not even when 2X minims were administered.

Patient reacted very well to the pilocarpine treatment. Her hair and general appearance improved.
William well. He was admitted to 10.3.26

a subluxated lens the result I am accident to his eye. An attempt was made to
extract the lens which proved unsuccessful. Patient was very uneasy and refused to
keep quiet on his eye. The right eye developed secondary glaucoma. Patient
then had a severe attack of cataract.

Ophthalmitis (Pneumococcus) in both conjunctiva cases, this prevented any operation from
being done. He was discharged and
readmitted in a month. The right eye was becoming
gangrenous. The left cornea and
auricles were very muzzy and vision only
fingers. Patient looked 20 years
older than he was coming to this state
condition nothing before could stop it.

Injection of Mercuroxy cyanide
were made into cellular tissue of
left orbit, they had to be made three
the skin of lower lid as the
inflammation was always
full of muculent matter.

This series of 1-2,000 mg Co. M.S.
were carried on an alternate day.

Patient was supported with homoeopic
result was very poor.
Intracranial Hemorrhage

Emma M. S. Admitted 8-20-29 with
Punctured wound of left temple
Pt. hypermetropic astigmatism
History was struck in left eye by a spar
from the fire owing to the bursting of
a piece of wood

General health good

Pt. X 46.5 6/12 +3.5
Pt. x

L.V. P. C. Temporal field best

Post projection towards this side
The punctured wound was to the outer side
of eye from cornea scleral margin
Considerable hyphema - hagmat was
without any reaction
Atropine 0.1% instilled twice daily

Large hemorrhage in vitreous

Injection of Mercuric cyanide (2 series)
was used with only fair result
Vision still slight perception
returns slightly less opaque
eye erect.

In this case had Saline
	promptly been used the improvement
might have been more marked.
James P., aged 20, occupation: Redcliffener. Admitted to W. & J with the history that she was struck on the eye between globe and eyebrow with a piece of metal 9" by 2" by ½" immediately after the blow vision began to fail. The diagnosis was extracocular and probably orbital haemorrhage. The strip of metal was taken out by patient herself. She declares that no pain remained in the eye or orbit. Iris reflex gave no active reaction.

Patient is otherwise healthy no previous eye trouble.
On admission T-1 m. left.
Patient complained of pain on looking directly upwards or downwards.
A small puncture wound visible in centre of left eyebrow, in this wound left upper lid a little oedematous and unhealthy darker than right.
Lid oedema in pressure over supra and infraorbital region.
Left eye considerably injected with deep and superficial vessels.
Pupil dilated moderately under Atropin.
Cornea clear, no trace of fungus, less mucus and clear; but behind it is a greyish opaque mass giving no red reflex. Subjective symptoms were prominent; shooting pain over eyebrow, no occipital pain.

Subconjunctival injections were used at first with some improvement. After the first five injections, fundus reflex very slight; masses of synchiae were seen in vitreous; no trace of fungus. Dextro-1/10 a dim red reflex could be made out.

The injections were for:
1st Series. Salt solution 1/8 Brux 2° Brux.
2nd Series. Bromine (Jodure) 1 Brux 1 ml.
3rd Series. Salt Solution 1 Brux 1 ml.

Calcium Chloride 1 ml. per ear, was given internally.

By this time the improvement was very marked. Fundus details could be seen. Optic discs looked very pale and vision was only slight perception. However, the large mass of hemorrhage into the vitreous had been entirely cleared away.
Kelly A. 18. Admitted to W.B.M. with a very inflamed eye and the eyeball raised by striking the eye against the edge of a door while moving about in a dark room.

Ocular and conjunctival injection marked.

Cornea clear.

Accommodative full of blood.

Lense and iris not seen.

But, vision 4/6 was used.

On the 1st day, hyphema was less than it was seen that the vitreous was full of haemorrhage.

Injection into conjunctival of bromine 2%. Salt solution 4% were commenced. Also, eye drops was now used instead of brown drops. Two doses were given with very good result; at the end of the 2nd day, fundus details could be distinctly made out.

Many other cases of intraocular haemorrhage often treated with one or two injections of saline solution bromine or occasionally with Atropine hypodermically.
True Amblyopia

Henry Jones 60, Public house keeper, has smoked and drank for a
considerable number of years, very often
excessively so.

Was lately notice vision deteriorating
With his near and distant vision was
reduced. Some difficulty in recognizing
Red, colors + green

Pr. 6 0
L. 4 0
R. 7 0
J. 8
J. 10

Was treated with subconjunctival
injections of Stramonium Sulphate
first then Stramonium Sulphate
and then

Dosage: M. 1/20 M. 1/20 M. 1/20 into

Two injections given twice
weekly on Tuesdays and Saturdays

Improvement was very slight.

Pr. 6
L. 6
R. 8
J.
J.

Magnesii Sulfas: 3 x x x each

Sodi Sulphas... was given

twice daily. Other drugs looked

very pale.
Other cases of

Tonic Anisocoria

& Ophtic Atrophy

were given one or two injection

of Hyoscine Sulphate with

indifferent result
Retinal Detachment

Alfred H. Leue
PT old retinal detachment
Myopic and myopic astigmatism
Left recent detachment

Jet black and high myopia
Pt was detached 7 years ago patient
came to W. S. J. entered fund to submit
to treatment

First day ago patient first
noticed the appearance of a few
fluffs or cotton on the right
and was noted on nasal side. The
next day it was the same (as above
descrived) in the morning by afternoon
the detachment was complete.
No history of heavy strain at work

One year ago. PT 6-5.5
= 50
LV. 6-16.
= 5

At present. No light perception.

2. Finger with difficulty.

Slightly to temporal side

Pt. Quest: Iris does not react.

Pupil occupied by a white mass
Possibly of same age

Left. Quest: a large detachment

Of retina edges fly up and slightly
Patient left temple was (bleeding)

he was kept in bed with only one

fever during the time that the

injections were being given.

known improved to 60

Patient was in hospital 6 weeks.

At the end of that time

Dr. and

L.V. 6 to 60

found clearer detachment
June 7. 28.  Annecy

Pt. Detached Retina. Synthapy on

Left. Synthapy on

Patient has always had poor

Distant vision, never worn glasses.

For days ago she noticed to find

Vision of Right eye almost gone.

Previously to this she felt as

uncomfortable, irritable and

inclined to water at times.

Local health good. Nursing an infant

of 6 months.

Dr. Shadows.

L.V. 20 J 2

Pt. a.m.: normal looking. Large

Detachment in the upper end

inter quadrant, nearly complete

from 8 o'clock. Zonula

Contents of fundus unexamined.

Treatment: Patient rest; flat on back

in dark room.

One series: Mercury Cyanide 1 grain. 1-son

Mr. S. I place, then 1/10 N, 1/10 N

Intraocular Chloride 5% x

A second series of Salt solution 4% Brown 22

Aurum 10%. Mr. J Medocchi 10.5
After 1st injection:
P.V. for 4 m at their feet

After the 2nd dose:
P.V. 0.5 = 6 oz no cylinder used

Now P. is not admitted to rest
for external extraction. There
was some loss of vitreous at the
time of operation. This was
unfortunately followed by
vomit.
On examining the patient prior
to giving his rest, discharge
an detachment was found above
and to temporal side

An attempt was made to
place with Thiorarbic but
the patient, heart muscle was
not in very good condition

The whole series was not administered
so saline injections were given
Vital was not and not uniform

There was no pain

or discomfort
John Present Oct 70  admitted 8/26/29
with extensive fluid detachment of
Retina above  and 6 outer side.
Patient was not nystagmic. He thought
he might get a blow on the eye.
He noted first a mistiness, then he
thought that was a piece of dust in
his nose. He kept on seeing a
black mass in that direction.
Although he when he looked in the
glass he found nothing there.
Suddenly after a fit I conjunctiva
(Patient had a bad cough) his
whole lower field was obturated.
He was treated on the usual line.
He was given two doses of
Pilocarpine hydrochloride with
subconjunctival injections of Saline Solution 40% in K.

Mr. Pilocarpine injection was
more of 1/80, 1/64 1/32 1/16.
After
1/6, 1/5 1/3 1/2, 1.

Patient could barely endure the 1/2.
Vision was now too poor to be 20
with difficulty. Retina was partly
Reflued, he remained in bed a week longer, that is for three weeks altogether, on getting up and moving about. The detachment became as extensive as before. Patient had to be allowed up as he was frail.