

Notes as to the matter contained in the sub-joined
thesis.

In the description of the observations which will be found herein, & which have been quoted to provide examples bearing on the subject taken up, I must mention, that what is written, is the result of careful examination and observation of the cases of the different patients, as they came to the Cliniques from time to time, and what I noted down at the time of seeing them on each occasion.

The notes were taken from personal observations & questioning of the patients, while the Diagnosis of their cases was in every instance confirmed by Dr. Abadie & Darier at their Cliniques in Paris & St. Denis.

The few Ophthalmoscopic Sketches, accompanying the descriptions of some of the cases, were taken and drawn by myself at the time of examining the fundus, and as I have tried to make them as nearly accurate as possible, it is hoped that they will give a better idea, and more fully illustrate the nature, of the lesions and condition of the fundus, than could appear possible by a written description. The Sketches will be found where it seemed advisable, and was practicable, to supply them. They represent in each case the Erect Image of the Fundus.

Accompanying the descriptions of the Corneal re-
affections, also, some Diagrams have been added (which were drawn in the rough at the time of seeing the patients) to serve a similar purpose.

Red ink has been used in some places to denote headings &c., & to represent the Refraction, thereby, it is hoped, enabling one at a glance to see and compare

the Vision, whether improving or otherwise, during the progress of the cases under treatment.

In examining the patients' Vision vs. the Metrical Scale of De Wecker has alone been used throughout, both for distant & reading purposes, for the former the patient standing at 5 metres from the types, & for the latter an average of 20 to 25 centi-metres (i.e. 8 to 10 inches) was maintained as the distance at which the patients should read the reading types.

To facilitate reference, copies of the types will be found enclosed.

Robt. J. Pope M.B., Ch.M. (Edin.)

- Some Ocular Affections with their Therapeutics -

by Roland J. Pope. M.B. C.M. (Edin.)

Having been Senior Assistant to Dr. Daries of Paris, Oculist, at his "Clinique pour les Maladies des Yeux" (Private Hospital for the Diseases of the Eye) at St. Denis, Paris, and also Assistant at the Clinique which Dr. Abadie & Dr. Daries carry on together in Paris, for the last six months (October ¹⁸⁹¹ to April ¹⁸⁹², I have had during this time the opportunity of making a special study of some new methods of treatment of certain affections of the Eye which perhaps appear to constitute a real progress on the methods which until recently, within the last year or so, were formerly in vogue. In thinking also that it is best to relate the observations which I have personally made & collected, they have been embodied in the following work, always endeavouring to control so exactly & accurately as possible the results obtained, and comparing these with those obtained by what one might call the usual classic ~~the~~ methods of treatment.

As a result of the work which has been done, the observations of the patients' cases which have been taken, & the special study which has been made of the subject, one has only taken up in this treatise those cases & their treatment which may be calculated perhaps to prove an advance in their Ocular Therapeutics, leaving on one side other numerous affections & all that which enters into the customary routine of treatment.

The subjects then that will be found treated on will be

- (i) Certain Ocular affections treated by sub-conjunctival injections of Bichloride of Mercury -
- (ii) Trachoma & its surgical treatment -
- (iii) Certain Ocular affections treated by Massage with Lanoline Hydroxygysique, an ointment composed of equal parts of Metallic Mercury & Lanoline -

Firstly, then let us take up the subject of sub-conjunctival Injections as above -

It will be necessary to give a brief outline of the history & development of this method of treatment before proceeding to the description of the cases & the results obtained from personal observations which have been taken during the last 6 months where the injections have been practised.

For a considerable time the idea of combating certain local manifestations of a general or constitutional affection by local therapeutics has been in the mind of many, and it has been carried out in several instances, whether alone, locally, or combined with general treatment, with great success, for example with regard to Syphilis, it is well known that local treatment of local Syphilitic manifestations when combined with general treatment which is of course of the chief importance, aids the latter to bring about a much more intense & rapid effect than general treatment alone.

We shall have to notice later on in our remarks the local treatment of certain eye affections with its results, as also when it has been combined with general treatment, and when, after general treatment has ~~not~~ seemingly failed, (perhaps because it takes so much longer to act) the local treatment has produced such amelioration as to almost make apparent its superiority; while we are fortunate in having such an excellent field for observation as the eye affords when viewed locally as contrasted with the whole body.

It may be said that when it is found necessary in a local Ocular affection to dilate the pupil one does not think of giving Atropine or Eserine through the system, but rather by instillation locally, hence perhaps it appears that one might treat by local therapeutics a local manifestation of the eye (^{if it is} the only one) of a general affection e.g. Syphilis, (though of course it does not hold for Syphilis ~~except~~ in the Pothary form), Rheumatism &c., and that this is to some extent true will be seen from remarks later on in this work.

Let us assume then that the idea of local therapeutics for the eye is fairly reasonable, for it evidently was keeping this in view that led some of our great Oculists to devise a method of carrying out this local treatment, which as far as the simplest & most efficacious, viz. by Subconjunctival Injections.

Accordingly the first step leading to it we hear of is the endeavour, introduced by Abadie of Paris a few years ago*, to prevent the occurrence of Sympathetic Ophthalmia by Intra-ocular Injection of Bichloride of Mercury. He had successful results in several cases. Then later Raymond of Turin reported having successfully prevented Sympathetic Iridocyclitis by means of Sub-conjunctival injections of Bichloride of Mercury, but he had taken the idea from Gallenga & Secchi, the latter being due in Northern Italy all the credit of the introduction of the method, he having been the first to introduce and work at it there, while just at the same time Davies of Paris was also working at it, he having got the idea from Abadie's intra-ocular method of injection & from the local absorption by the Lymphatic channels of communication (which will be mentioned later.)

He therefore in May 1891 after having practised this treatment for 2 years & taken careful observations of the cases, presented to the Société Française de l'Ophthalmologie at Paris the first important treatise of "Sub-conjunctival Injection of Sublimated in Ocular Therapeutics", and later published it*.

This supplied Ocular Scientists with a new field for observation & research, as nothing had previously been given out as regarding this treatment in affections of the Choroid, Retina &c., but only of the Anterior

* Abadie, Annales Oculistiques, Paris, Nov-Déc. 1890.
 * Extrait des Archives d'Ophthalmologie, No. 5. de 1891. Davies.

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segment of the ocular globe. (Acroni, Reynolds &c), and it has led me to make a special study of what may perhaps prove to be a great advance in the therapeutics of some Ocular Affections, whether as an improvement on former methods of treatment, or to fill a void in many cases where up till very recently we have been so often compelled to say "Treatment is of no avail." With regard to this local method of therapeutics the idea was that where the case was of an infectious nature or origin (i.e. due to any virus or germ etc) the best way to combat it was to bring the medicinal agent (in this case Sublimat^{*}) as nearly as possible to the seat of the pathogenic agent; in fact in contact with it if possible which has been brought about by the sub-conjunctival injections, and this is proved, perhaps, by the results of experiments made & published by Pflüger of Berne, showing the communication between the sub-conjunctival space and the interior of the eye-ball by means of the lymphatic channels. It has been found that the lymphatic system of the eye consists of spaces & channels, and concerning this work, that the sub-conjunctival space and the Tenon's space communicate with each other and with the supra-choroidian space, as well as deeper with the vaginal spaces which surround the optic nerve & establish thus a communication with every portion of the structures of the globe of the eye & with the Cranial cavity itself. This has been demonstrated

* For brevity & convenience we shall always hereafter speak of the Perchloride of Mercury as "Sublimat."

by Pflüger who found that colouring matter injected under the conjunctiva penetrated into the Cornea, into the iris, lens, & choroid &c.

One therefore, reasonably perhaps, concluded that the medicinal agent (in this case, sublimate) which under ordinary circumstances we know to have the power of destroying certain bacilli, virus &c, & therefore of arresting the infectious process, when brought into contact with the structures affected in whatever portion of the eye would be the best means of combating the affection, and that the agent if in a suitable form could get right to the seat of the disease, and that it was brought about best by sub-conjunctival injections (the intra-ocular injections obviously presenting certain dangers). It may here be noted that agents acting at the conjunctival dose only are used, while the cases which at first seemed most indicated for this method of treatment were those which demanded mercurial treatment constitutionally, or which seemed to be of an infectious origin, but, as will be seen later on in this treatise, it has since proved of great & marked benefit in many other cases.

The active quantity of the medicinal agent (sublimate) introduced into the eye, although apparently infinitesimal is nearly 100 times stronger than that which penetrates into the eye from the hypodermic injection of 1 centigramme of sublimate (the ordinary dose), the dose per sub-conjunctival injection being $\frac{1}{20}$ of a milligramme of sublimate, one-twentieth

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of a cubic centimetre of a solution of sublimate
at one to 1000. Whilst admitting that the
sublimate enters into the general circulation stream,
there would be for every cubic centimetre of
blood, at the rate of 5 litres of blood in the body,
scarcely 0.000005 of sublimate (from the hypo-
dermic injection), while that locally from the
subconjunctival injection ($\frac{1}{20}$ milligramme) is 100
times greater.

This is only to show that the dose of sublimate
in the latter though superficial quantity is not
too small to have a medicinal action as might
perhaps at first be thought, and we probably
therefore possess in this method a most valuable
& scientific means of noting the action of a medicinal
agent (in this way dosable as to speak) which
from a practical point of view is so much more
vivid than any theory could be; while it may
be pointed out here that in the general treatment
of Syphilis e.g. when a patient is ordered general
unctions on the flanks &c. although told to use
a certain amount of Mercurial Ointment, or that
it may be therefore dosable, that is the quantity
used to be regulated by doses, we cannot tell
whether they get the whole quantity ordered
absorbed into the skin or not, either because
they do not apply it properly, or because of
the varying absorptive powers of the skin in
different patients. It is therefore doubtful if
we can in this way note the dosable action of the
medicinal agent, whereas we know how much
goes into the eye or the system as above & can
therefore note its action by doses.

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With regard to the local therapeutics, we know that the propagation with generalisation takes place by the lymphatic channels, in the majority of infectious processes, and hence it appears best to irrigate the lymphatic territory around the local manifestation, which seems to be most rapidly & efficaciously brought about, in the case of affections of the globe of the eye, by sub-conjunctival injections.

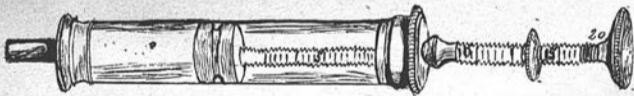
The Treatment of the affections of the Eye which are described from observations made upon ^{the} lalic on, is the introduction of sublimate into the eye to the seat of the affection by sub-conjunctival injections, the sublimate penetrating by the lymphatic circulation. The quantity introduced is the twentieth part of a milligramme of sublimate, and its ~~its~~ vehicle or to speak is water, that is, when we inject ^{one} twentieth of a cubic centimetre of a solution of sublimate 1 to 1000, regulated by the springs of Pravaz, $\frac{1}{20}$ milligramme of sublimate has been introduced.

The action of the Mercury in the affections afterwards described must vary greatly. For instance in Syphilitic affections of the Cornea (Interstitial Keratitis) Iris, Choroid, Retina &c. it must act as in Acute Syphilis, as a Specific to this virus. In infectious cases of the Cornea (Ulceration &c), Iris &c. by extension, &c. it seems to act in virtue of its absorptive and antiseptic

properties, destroying the bacteria, and thus arresting the infectious process, at the same time absorbing & carrying off the infectious products. In those affections of the choroid, retina & optic nerve &c. which we cannot trace to any infectious origin it is difficult to understand the "modus agendi" of the Mercury, other than ^{by} the absorption of the inflammatory products & by its giving tonic to the tissues.

It has produced very satisfactory ameliorations & sometimes cures of Rheumatic & Contagious conditions of the Osseous, Iris, Choroid &c. where general treatment by Alkalies, Salicylates, Colchicum &c. have failed, though given good trials, but it is very difficult to explain how it has acted, though very satisfactory, clinically only speaking. In all forms of corneal ulceration it has caused the most speedy growth of new epithelium over the ulcerated portions of any form of treatment we have so far seen, probably acting by its antiseptic & absorptive properties & thus placing the tissues in the most favourable condition for nature's work.

The method of application is very simple, and carried out by means of the syringe of Pravaz resembling an ordinary hypodermic syringe, but the needle is so modified as to be very fine, of the lance-like form of a cataract needle. This makes it quite easy to pierce the conjunctiva, the extreme point being always kept very sharp. The patient is first cocainised, it being found



most practical to put a drop or two of cocaine (3 per cent solution) in the eye three times during 20 minutes; the syringe being adjusted so that a twentieth part (the piston being graduated into 20 divisions) only can be injected at a time, and this represents $\frac{1}{20}$ milligramme of sublimate contained in a twentieth of a cubic centimetre of liquid, equal in size to about one large drop of liquid. When one has acquired the practice, which is soon done, there is no need for either forceps to fix the eye ball or speculum &c. A repair of the needle is of course of prime importance, it should be used only for this, & for no other purpose, when not being used it should be suspended in carbolic glycerine (5 per cent.) Before using it may be held till at a red heat in the flame of a spirit lamp to sterilise it, which is very convenient & very safe against sepsis.

After trying several, the best results have been obtained with a solution of sublimate at one to 1000 (the solution being made with boiling water & filtered without the addition of alcohol.)

Though there is no pain at the time the injection is made, when the effects of the cocaine have passed off, some patients complain of a burning or prickling sensation for a few hours but not longer.

The injections are usually made every second day for the first two or three weeks, if it is necessary to carry them on so long as this, and afterwards twice a week for a fortnight about & later once a week & even once a month, according to the progress of the case.

It is important to use discretion in choosing the portion of the conjunctiva for piercing with the needle in order to make a s. c. injⁿ. When the conjunctiva is normal for example, one makes the first injection above the cornea (as far away from it as possible), the 2nd below, the third to the outer side of, the 4th to the inner side of, the cornea; it must always be done as far away from the cornea as possible, as in a few cases before experience had shown it to be wrong, when the injections were made near the cornea, an oedema of a pale yellowish-white colour of the conjunctiva resulted, whereas this has not been noticed since practicing according to the above method. It is also always desirable to pierce that portion of the conjunctiva which in the natural open state of the eye is covered & protected by one or other of the eyelids. After several injections have been made, one must use one's own discretion as to the site of the next, choosing a portion which presents a normal appearance, as after recent ones there remains for a few days a slight oedema. Immediately after the injection, a small bleb remains containing the solution of sublimate, which becomes absorbed in a little time; this bleb causes no trouble to the patient who is ignorant of its existence. With regard to the syringe needle, it is made of metal composed of Platinum & Iridium & is therefore very durable while allowing of being heated to red or white heat without sustaining injury. When both eyes are affected similarly, one makes the injections alternately in each eye, so far, never in the two eyes on the same day.

The form of sublimat^e which is used in the Hypo-
dermic injections is made up specially for the purpose
as follows

- Dry pulverised Peptone
- Chloride of Ammonium $\bar{a}\bar{a}$ 15 grammes.
- Corrosive Sublimat^e 10 grammes.

then 0.45 (i.e. 45 centigrammes) of the above in
10 grammes of Distilled water gives a solution
of sublimat^e by which when an injection of
1 gramme of it is made, then 1 centigramme i.e.
about $\frac{1}{6}$ grain of sublimat^e is injected into the
tissues.

This solution is called Peptonat^e & the hypodermic
syringe contains 1 gramme, so that when
the syringe is filled with the Peptonat^e solution
it contains 1 centigramme of sublimat^e in 1 gramme
of Peptonat^e which is the quantity injected.

The site chosen is, in the case of males, the
Gluteal region, in the case of females, the inter-
scapular region. The injections are usually
given 3 times per week, and as their chief,
perhaps only, indication is in specific cases,
a prolonged course is always necessary.

The Mercuric Cyanide may be, and has been,
employed instead of the Bichloride of Mercury,
if desired, the same amount ($\frac{1}{6}$ grain) being in-
jected as usual; while for the sub-conjunctival in-
jections $\frac{1}{20}$ milligramme similarly.

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The affections of the eye which have appeared to derive the greatest benefit from the treatment by sub-conjunctival injections of Sublimat are amongst the following -

1. Various forms of Choroiditis & Retinitis -
2. Forms of Neuritis Optic & Retrobulbar -
3. Forms of Optic Atrophy -
4. Forms of Keratitis -
5. Affections of the Iris & Uveal Tract, with Sympathetic Ophthalmia, Iris-Choroiditis, Iris-cyclitis -

With regard to the first three, results of varying kinds have been obtained, such as

- (i) Complete recovery as to vision and anatomical lesion -
- (ii) Recovery as to vision but not as to lesion -
- (iii) Amelioration in both, or in one of the two, vision, but not in lesion without vision.

As to the latter two heads (4 & 5) Keratitis &c. the results have been so satisfactory as to surpass in rapidity & intensity those obtained previously by any of the former methods of treatment.

It will be well now to give some brief accounts of the observations which have been made & taken of the cases of patients which come under the above heads & which appear to have special reference to this subject -

- Macular Chorooiditis -

M. Y.... 38 years of age, formerly an Officer in the French Army. History of Gout in mother, while he is Rheumatic & has had several attacks of Gout. No history of Syphilis in parents or self. Patient came to us first on Dec. 14th 1891 com-
plaining that his sight was becoming weaker & that there was a mist always before objects at which he looked. His vision was

R.E. $V = \frac{1}{2}$ (weak), reads No. 2 at 35 centimeters.

I.E. $V = \frac{1}{3}$; reads No. 4. " " "

this with $\times 1.75 D$ - Dec. 12th 1891

without glasses it was R.E. = $\frac{1}{3}$; I.E. = $\frac{1}{4}$.

Ophthalmoscopic appearances :-

A few small whitish spots of exudative Chorooiditis in the macular region of each eye. The papillae; & fundus of each eye, appeared normal.

After one subconjunctival injection of $\frac{1}{20}$ milligramme of sublimate the Vision was

R.E. $V = \frac{1}{2}$ reads No. 2

I.E. $V = \frac{1}{2}$ reads No. 1

} with glasses.

the S-conj. inj. having been put in the I.E. After a second one the Vision was about the same, and remained so for another 2 or 3; upon which it was decided to give hypodermic injections of sublimate & discontinue the S-conj. inj.^{ns}, but the result after 20 such hypodermic injections was a retrogression

R.E. $V = \frac{1}{2}$ reads No. 2

I.E. $V = \frac{1}{3}$ reads No. 2

} with glasses.



LE.

RE.

S-conj. inj.^{ns} were then resumed and after 5 weeks
in each eye (the hypodermic inj.^{ns} being discontinued)

R.E. V = $\frac{2}{3}$; reads No. 1
I.E. V = $\frac{1}{2}$; reads No. 1 } with glasses.

Feb. 26th 1892.

The case remained stationary at about this for a
time the S.-conj. inj.^{ns} being continued only twice
a week and later once a week, but a month
later, there was still further improvement

R.E. V = $\frac{2}{3}$; reads No. 1.
I.E. V = $\frac{2}{3}$; reads No. 1. } with glasses. March 27th

In the Fundus -

R.E. The upper portion of the whitish spots
had disappeared from the macular region, while
the lower ones were very much smaller & not
nearly so distinct

I.E. The spots were also much less distinct.

Eight days afterwards, the next time the patient
came his vision had returned quite to normal

R.E. V = 1; reads No. 1
I.E. V = 1 reads No. 1 } with glasses -
at 25 cm

April 4th 1892.

while he told me he had read his newspaper
that morning for half-an-hour without his
glasses, a thing he had not been able to do for
5 years.

This case seems to illustrate the advantage of the
sub.-conj. inj.^{ns} over those given hypodermically,
and to mark the benefit derived in cases which
are not of a syphilitic nature -

I have noticed that Choroiditis in Gouty or Rheumatic patients takes seemingly a characteristic form, sometimes we find a defect in the vision without any apparent cause in the fundus, nor is there anything perhaps in the Refraction to explain it; it seems to be probably a latent form of macular choroiditis which later develops, and one notices a reddish macula with a small somewhat pinkish spot in the center & which later becomes white, leaving no doubt of its being choroiditis - Sometimes the Choroiditis takes the form of small white spots or patches in the macular region, most often between the macula & the papilla, as in the case of M. Y. just previously given.

Macular Choroiditis -

M. L. aged 22 years - no history of Syphilis, or Gout; probable (from patient's account) Rheumatic tendency - For 5 years he had not seen so well with his R. E.; but quite well with his I. E. until 2 years ago when he found his sight much diminishing & when he came to us he had very imperfect vision

R. E. $V = \frac{1}{7.50}$ (1 metre) reads No. 2 at 10 centimetres
 I. E. $V = \frac{1}{10}$ (1 metre) reads No. 2. at 10 " "

Jan. 29th 1892.

He had been examined, when he went for treatment to them, by 3 Oculists in Paris at different times, but no one had seen him for nearly a year before he came to us, he had derived no benefit from their treatment, and he was told by each of them that

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there was no visible cause in the fundus of the eye for the defect of vision. On very careful examination of the macular region, one noticed the following Ophthalmoscopic appearances:

R.E. a reddish macula with whitish spots in the centre, while around it several small white foci of chorioiditis.

L.E. a somewhat similar condition but not so marked.

The natural conclusion was that the affection had been latent when he had been previously examined, and that as already described, there was the defect (or marked in this case) of vision, while the lesion came out later.

Sub-conj. inj. ^{no} were begun and after two had been made one in each eye the Vision was

R.E. $V = \frac{1}{7.50}$ (metre) reads No. 1 at 10 centimetres

L.E. $V = \frac{1}{10}$ (metre) reads No. 1 " " "

Feb. 3rd 92.

For some reason or other the patient has never since returned to us, so that we cannot record his case.



100



L.E.

R.E.

Macular Choroiditis -

M. A. Paged 45 years. came first time on the 15th January 1892, complaining that for a fortnight he had noticed a mist when he looked at an object, and gradually his sight was becoming defective.

R.E. with -3 D. V = $\frac{2}{3}$ - reads No. 1.

I.E. " " " V = $\frac{1}{4}$ (weak) reads No. 1.

} 3 D. of myopia.

His history of Syphilis - Has been gony for 12 or 13 years having had 3 or 4 attacks in the great toe ankle & knee. Otherwise good health, & says always abstemious as to Alcohol &c. Nothing abnormal in the urine.

Ophthalmoscope - 15th Jan. 1892.

R.E. Nothing abnormal observed, papilla perhaps a little reddish.

I.E. In macular region to the inner side of the macula, between it & the papilla, were some small whitish dotted patches of choroiditis. The reddish spot of the macula was distinctly seen. The papilla was slightly reddish, infiltrated with slight inflammatory swelling.

The treatment consisted of Sub-conj. inj. only. After the 2nd sub-conj. inj. a great amelioration has taken place in the Vision.

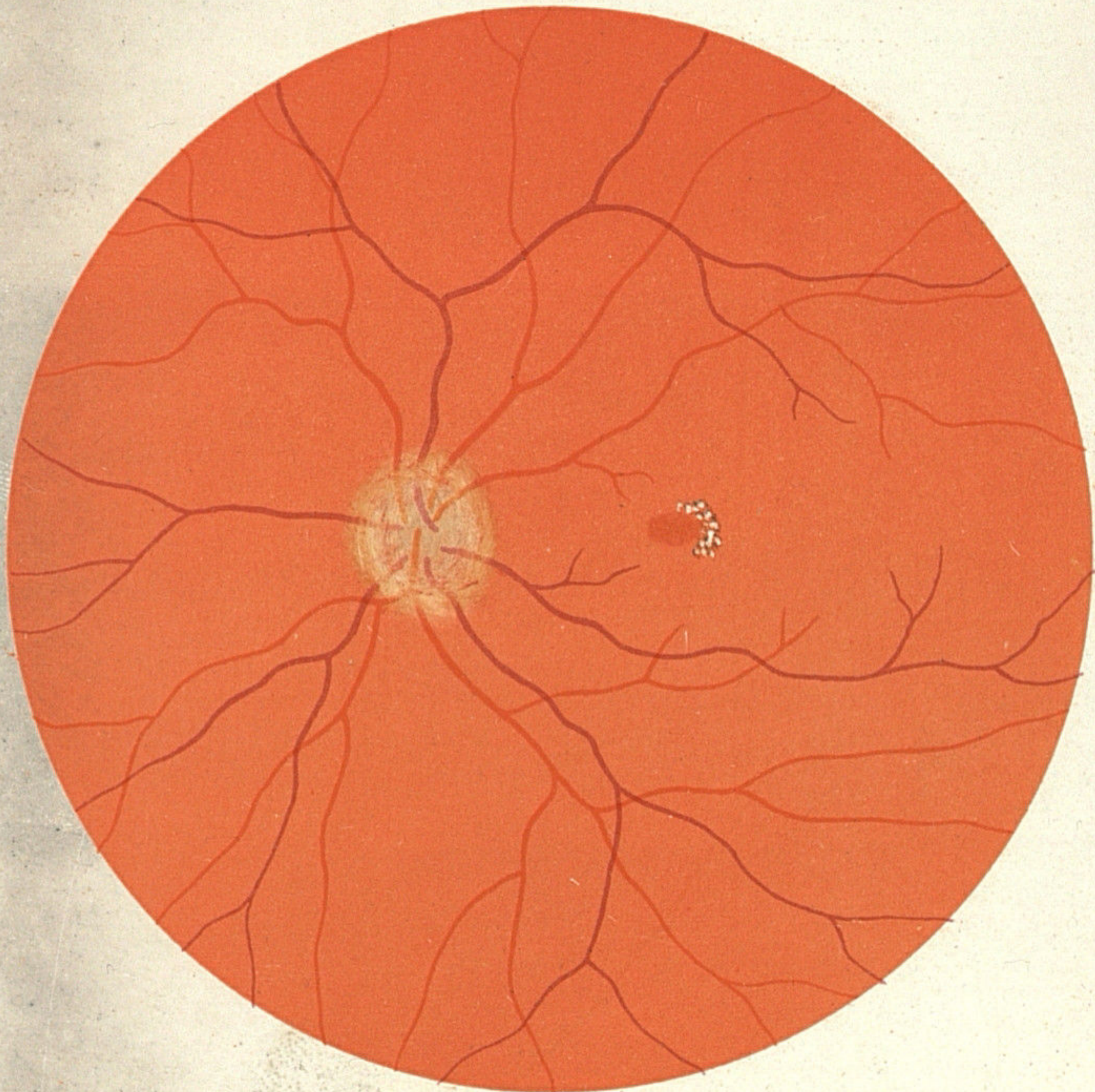
I.E. V = $\frac{2}{3}$ (nearly) Reads No. 1. at 20 centimetres - while the mistiness before the eye had completely disappeared.

Ophthal:

The white patches of choroiditis were not anatomically diminished or altered.

After the 3rd, 4th & 5th S. conj. inj. the Vision remained stationary, but changes took place in the fundus, e.g. after the 3rd S. conj. inj.

Ophthal: R.E. Papilla slightly reddish still.



L.E.

I.E. Papilla a little infiltrated with a reddish haze - Striated patches between macula & papilla of what seemed to be a fatty degeneration of the choroid very slight - The reddish spot of the macula was no more to be seen. Feb: 1st 1892.

The patient came very irregularly, and had the S. c. j. inj^{ns} about once a week only. After (six) inj^{ns} in 5 weeks the Vision had been brought to normal

R.E. V = 1, reads No 1 } Feb. 23rd 1892
I.E. V = 1 reads No. 1 } - 38.
Myopia unaltered.

while with the Ophthalm.

R.E. Papilla slightly infiltrated still, and one noticed ^{now} some small silvery-white spots in the retina, which seemed to be a little raised, from an oedematous condition.

I.E. The papilla was much clearer.

The patient kept on going well, and when he last came, March 8th both papillae were almost perfectly clear, while the patches of choroiditis in the I.E. were much diminished, and the apparently oedematous condition of the Retina in the R.E. had disappeared. March 8th 92

He had not had a S. c. j. inj^{ns} for a fortnight his Vision was quite as good as last time & he considered himself completely cured.

This case illustrates the benefit derived from Sub conjunctival injections as sole treatment.

In connection with this last case it may be mentioned that after the 5th sub. conj. inj. (only 5 having been given during as many weeks) the patient complained of the metallic taste in his mouth, salivation having been produced, yet only the usual amount $\frac{1}{30}$ milligramme ^{of sublimate} had been injected each time; this not only showed how powerfully this minute quantity can act locally, but made one wonder if it were not well supported in Gouty patients & cases, and calling to mind the previously described case of M. Y. who was Gouty, it must be stated that he, after two months or more treatment, was troubled with severe boils on the neck & over the lower jaw, yet in each case the Urine & Lesion were so remarkably improved. The opportunity did not, unfortunately, offer, to study the effect of S. conj. inj. of sublimate in Gouty cases, & time & experience will be necessary to clear this important point up.

Latent macular choroiditis -

M. A. Ingham - aged 43 years.

In November 1891, ~~three~~ months ago, patient noticed the sight of his R.E. failing gradually, a mist shrouding the objects looked at. This increased till he could scarcely see at all with this eye - His L.E. has always been good as regards sight.

History as to parents good - Denies syphilis, but has had slight throat affection & skin eruptions at times. Is Rheumatic, having suffered especially in the hands & feet & knees, otherwise health good.

In November he consulted an Eminent Oculist in Paris (Dr. Sarrand) whose diagnosis of his case was "Central Scotoma from lesion of the Macula", and who treated him by Mercurial Inunctions on the legs ^{daily} & ordered him 3 grammes (45 grains about) of Iodide of Potash per day, which treatment he carefully followed for 2 months, but without deriving any benefit, so he gave it up & a few weeks later (18th February) came under our notice. No record of his acuteness of vision having been kept while he was under the care of Dr. Sarrand, we have only the patient's word that he did not improve under the treatment. Below however will be found the record of his case as it was when he came to us & how it progressed under treatment by sub-conjunctival injections -

R.E. V = 2/3 at 1 metre - reads No. 7 at 25 centimetres
 I.E. (normal) V = 1. reads No. 1 ~ ~ ~

= Vision when he came to us. Feb: 18th 1892.

When he looked at e.g. a sheet of white paper he noticed a dark shadowy haze, but on scanning him for the colours, there was no central scotoma. There was however the phenomenon of Metamorphopsia, the outlines of objects appearing distorted to the patient.

Ophthalmoscope -

Each papilla was reddish, ^{but} though no lesion in the macula or macular region in either eye was apparent, though in the R.E. the macula was markedly red & distinct.

After 2 O.c.j.inj. his vision for near work had improved

R.E. V = 2/3 at 1 metre, reads No. 4 at 25 cm.

& the dark haze before an object had entirely disappeared
 Feb: 22nd 92

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Then after a 3rd injection

R.E. V = $\frac{1}{4}$ at 5 metres reads No 2 at 25 cm.

which was a marked improvement to take place in a week.

On the 27th Feb. '92

R.E. V = $\frac{1}{3}$ at 5 metres, reads No 1. at 25 cm.

Ophthalm.

The redness of the macula was still apparent, while in the very center of it there appeared a very faint pinkish white spot, only discernible with difficulty & care. The papillae were clearer.

The metamorphopsia had disappeared on the 2nd March, the Vision being as at the last time, but on March 5th when the Vision was

R.E. V = $\frac{2}{3}$ at 5 metres reads No 1 at 25 cm.

the patient had developed Micropsia, all the objects he looked at with this eye appearing smaller than normal, than they did with the other eye.

Ophthalm.

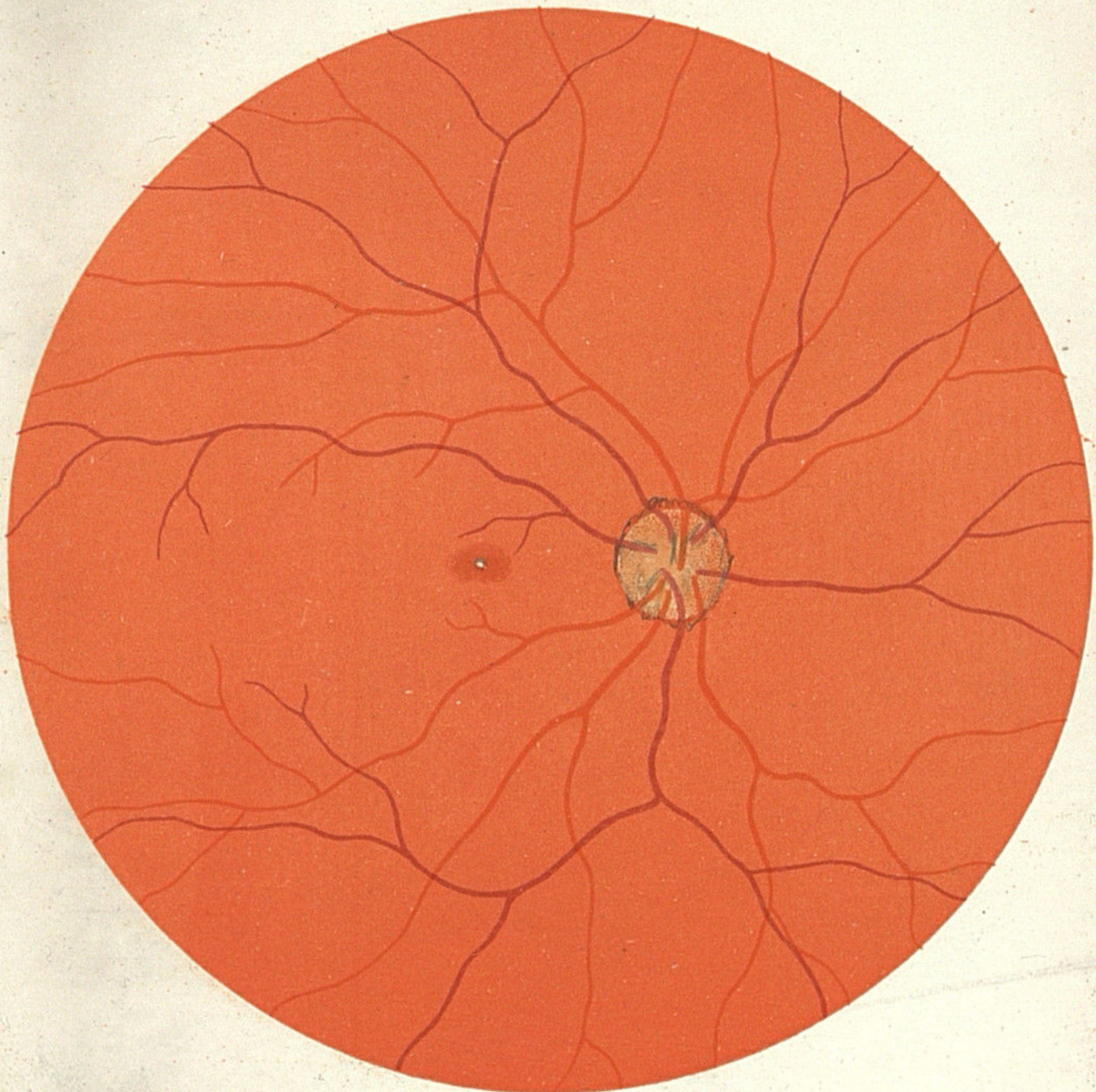
The macular lesion is no longer latent now, there being a very small whitish spot of choroiditis in the center of the macula which still shows some redness.

So far the patient had had only 6 s. conj. inj^{ns}.

On the 30th March '92

R.E. V = 1, reads No. 1 at 25 cm.

normal vision, after 6 weeks treatment. The macula now presented an almost quite normal appearance, the whitish spot diminishing to a spec & being scarcely visible. ^{The papillae were now quite clear.} The patient had but 8 sub-conjunctival injections, and if we



RE.

could rely on the patient's statement, about the general Mercurial treatment, also Bodide of Potash, not having done him any good or improved his vision, then this case would show the advantage of local over general treatment for local manifestations, as regards the eye, of a general condition; thus supporting the local therapeutic ideas. It certainly shows the efficiency of sub-conjunctival injections in affections of the Choroid & Retina etc.

Chorio-retinitis -

M. V. G... aged 39 years -

had complained of his eyesight failing him gradually for 4 or 5 years, both eyes being affected. No history of Gout, and the patient denied any knowledge of Syphilis in himself or parents. He said that he was decidedly Rheumatic. Notwithstanding his denial of it, on examination of the fundus, the case appeared to be of a syphilitic nature. He came to us first in June 1891 when his Vision was R.E. $V = \frac{1}{3}$, I.E. $V = \frac{1}{2}$; but did not return for some reason or other till Jan. 16th '92 and then

R.E. $V = \frac{1}{3}$ } Jan. 16th '92 till March 9th '92
 I.E. $V = \frac{1}{3}$

On Jan. 16th '92 the case being considered specific he was given hypodermic injections of sublimate three times a week up to the 9th March but without improvement (7 weeks treatment), the case remaining stationary.

The Ophthalmoscope

revealed the papillae to be slightly infiltrated, hyperaemic, with indistinct margins. In the macular regions there were some disseminated choroidal changes, yellowish white patches with pigmented outlines & some with pale margins, also some patches of black pigmentation, while at the periphery of the fundus, in each eye also, were choroidal & pigmentary changes.

On the 9th March it was decided to make Sub-conjunctival injections of sublimate in addition to the hypodermic, and after the first one, in two days the result was striking:-

R.E. V = 2/3 reads No. 1 at 25 cm. } 11th March 1892.
I.E. V = 2/3 reads No. 2 at 25 cm.

while three days afterwards, after the 3rd s. cj. inj.^{ns}

R.E. V = 2/3 reads No. 1. } 14th March.
I.E. V = 2/3 reads No. 1.

and on the 16th March, about the same thing, the vision of the I.E. being slightly better than that of the R.E. Patient did not come then for 5 days so on 24th March after 4 s. cj. inj.^{ns},

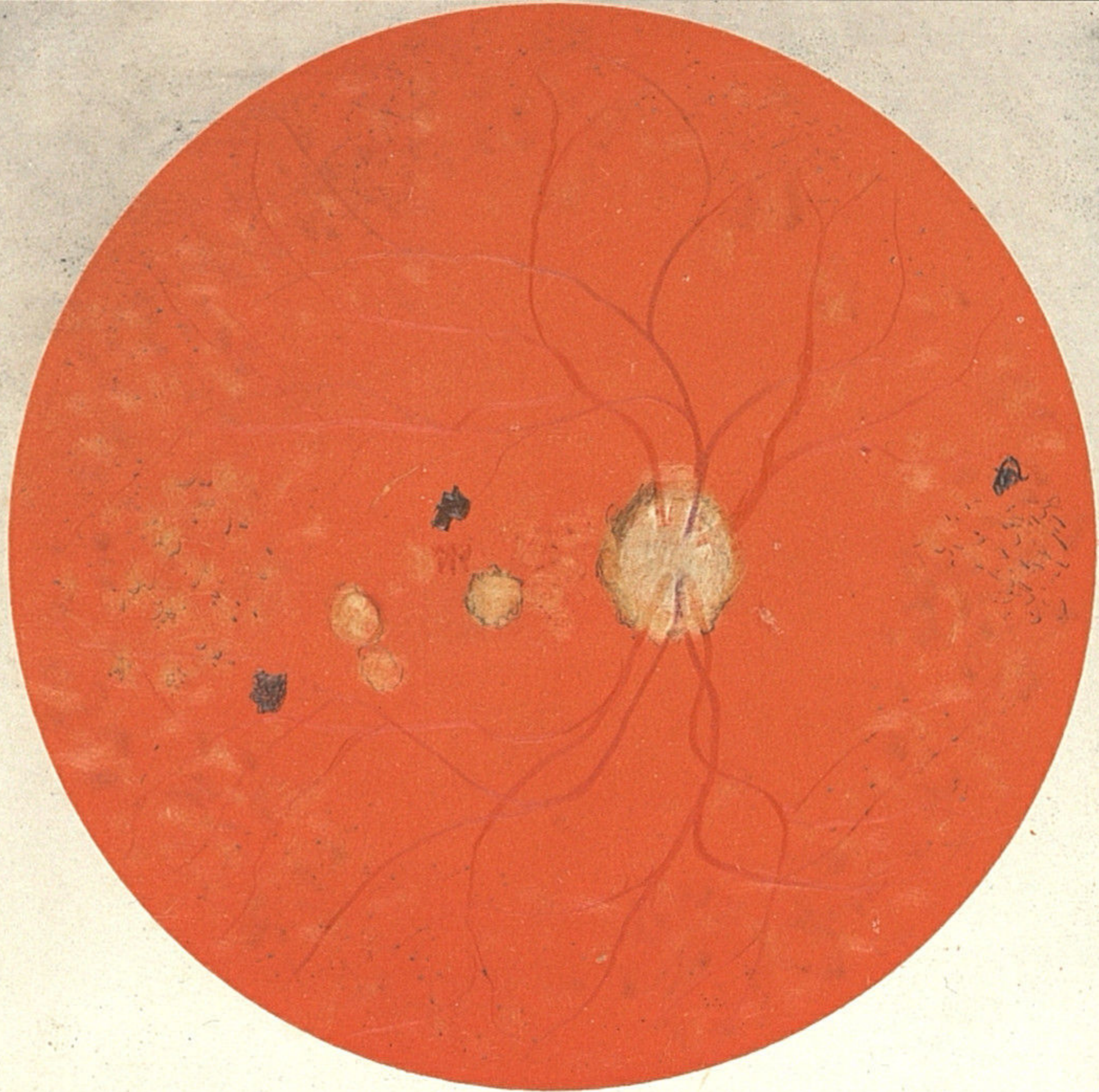
R.E. V = 2/3 reads No. 1 } 21st March.
I.E. V = 1 (some better) reads No. 1.

and later

R.E. V = 1 (weak) reads No. 1 } 30th March.
I.E. V = 1 (weak) reads No. 1

Up to this date the patient had had 8 sub-conjunctival injections & 33 hypodermic.

The patient has been once since, and his vision has improved, become clearer, while the lesions in the fundus were markedly diminishing, some



R.E.



L.E.

small patches having almost entirely disappeared.

This case perhaps illustrates the rapidity & intensity of the action of sublimate when introduced under the conjunctiva, and the seemingly slow action, & not beginning to act till some time after, when introduced hypodermically.

Chorio-Retinitis -

M. E. Cox aged 42 years.

This patient came complaining that his eyes were red & inflamed, and that because of it he could not see well. A condition of Episscleritis was found in each eye, an old leucoma of the cornea in the left eye, while as he complained of not seeing well during the last 10 days, since his eyes became red, his vision was taken & found to be

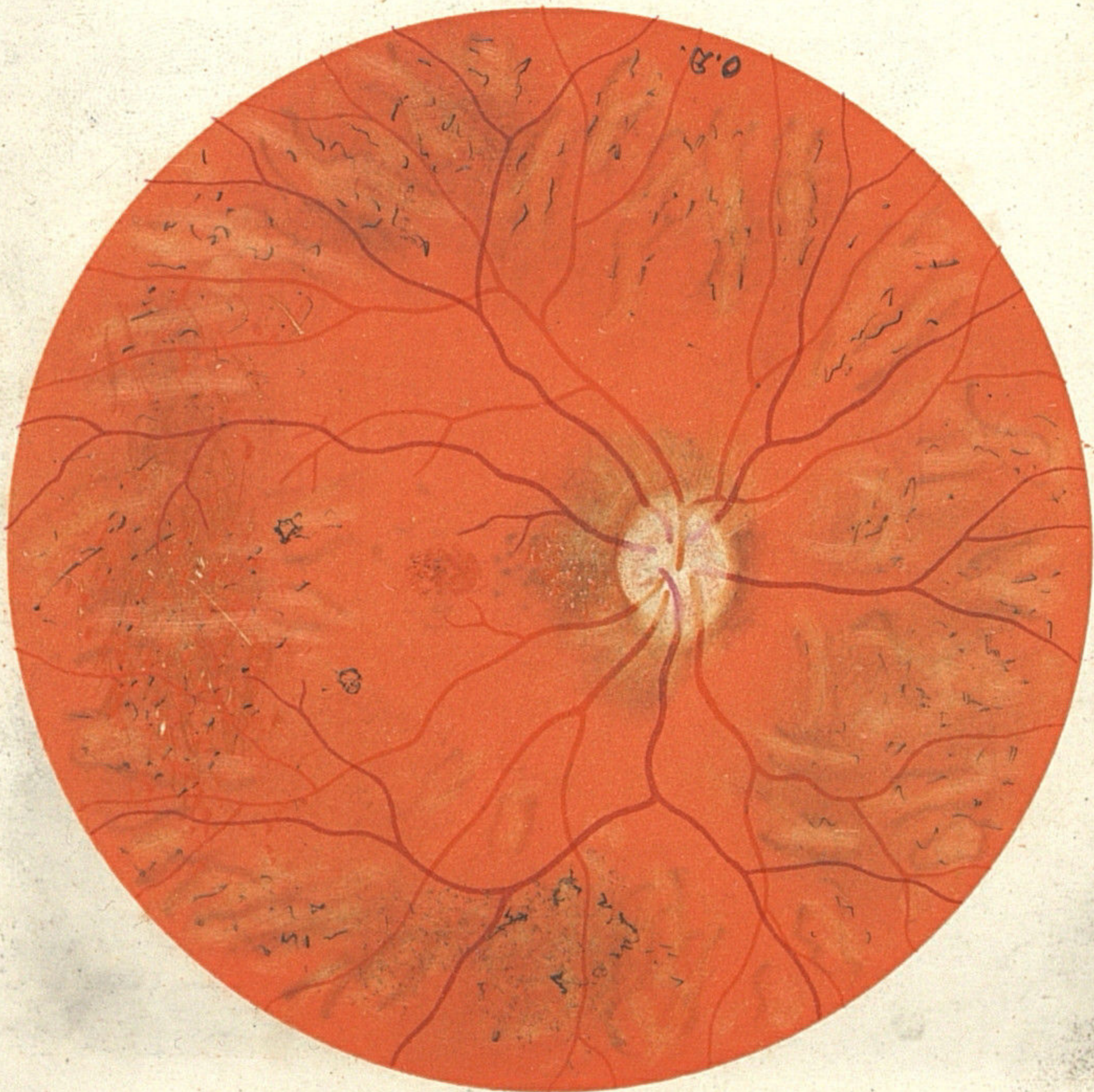
R.E. $V = \frac{1}{4}$; read No. 3 at 25 cm. } 28th March
 L.E. $V = \frac{1}{10}$; read No. 4 - - - } 1892.

why so defective was, in the case of the L.E., explained by the old leucoma of the cornea, but the vision of the R.E. led us to examine the fundus, and the following conditions were found

Ophthalmoscopic appearances -

R.E. Nothing appreciable in the papilla itself, but a slight fading of the retina at its margin from top to bottom, extending a little in the direction of the macula; and between the papilla & macula, nearer the papilla a little scattering of small whitish brilliant points, probably an alteration in the pigmental lining -

In the macula itself a granular, reddish, condition without any pathological change.



R.E.

In the Equatorial regions, upwards & outwards especially, this dotted appearance is much more marked, & there are small distinct pigmentary corpuscles, deposits, on a yellowish-pink background. It was not the typical aspect of pigmentary retinitis but there were some pigment spots about the size of a pin's head & a little larger. The choroid in these regions was nearly white.

I.E. Difficult to examine on account of the leucoma, but it seemed that the lesions were more advanced in this than the R.E., there being one white focus of choroiditis surrounded with black pigment larger & more pronounced than any in the R.E. which otherwise very similar generally.

As was expected the case was specific, the patient telling a history of syphilis in himself, he also said he was Rheumatic, having suffered in one knee, but this may not have been Rheumatism. He came for the Episcleeritis not knowing of the changes in the fundus of the eye.

He was given Sub-conjunctival injections of sublimé and told to rub in "Onguent Papulitani" (i.e. Unguentum Hydragyricum caeruleum B.P.) to the temples, round about the eye, till a piece the size of a nut (of an ordinary Paracelma nut) was all absorbed, morning & evening.

After the 1st S. inj. in two days the vision had improved from
R.E. V = 1/4 ; read No. 3
I.E. V = 1/10 ; read No. 4 } 28th March

to

R.E. V = 1 (weak) read No. 2 }
I.E. V = 1/10 ; read No. 2 } 30th March.
at 25 cm. i

29

and 5 days afterwards, three s. c. inj^{ns} in all

R.E. V = 1, reads No. 1. at 25 cm. } 4th April.
I.E. V = $\frac{1}{10}$ (leucema), reads No. 1. ")

So far however, no diminution in the lesions of the fundus was apparent, though from experience of many other cases it is very probable that later they will become very much modified & some entirely disappear.

Chorio-Retinitis -

M. A. J. aged 25 years.

a specific case, the patient giving a history of acquired syphilis. He had had the eye affection for 4 years, during portions of which time he was treated by his Medical Practitioner by mercurialunctions (general), by hypodermic & sub-conjunctival injections of sublimate. These latter two forms of treatment were commenced in June (1st) 1891, about 8 months previous to his coming to us, by which time he had had 60 hypodermic & 10 s. conj. inj^{ns}, the latter being given 5 from the 1st June to 11th Aug. 1891, & 5 from 12th September to 6th December 1891, there being on an average about 10 days between each, the first series of 5 being injected into the left eye, the second into the right eye. He states that for 2 or 3 days after each s.-conj. inj^{ns} there was a marked improvement which had however disappeared before the next one.

He first came under our notice on the 19th Feb. '92

R.E. V = $\frac{1}{3}$ reads No. 1 (weak) at 15 centim. dist.

I.E. V = $\frac{1}{3}$ reads No. 1 (weak) at 15 centim. dist.

The colours were well seen & distinguished.

Opthalmoscopy

R.E. Numerous floating bodies of varying sizes in the Vitreous - Papilla swollen, infiltrated, indistinct in outline - Veins a little tortuous - Above the papilla, a floating body of blood attached by a filament to a vessel of the retina, this body appeared red with the indirect, black with the direct method of examination, while there was a larger one higher up the fundus like a red cloud (indirect in eye) Behind this red cloud the choroid was less coloured than the rest - There were small hemorrhages in other places - Downward, a large black floating body, & some small foci of choroiditis toward the periphery, were seen. The extremities of the retinal vessels appeared smaller than usual -

I.E. Papilla much swollen & hyperaemic, larger than R.E. Many floating bodies in Vitreous. The vessels from the papilla were thin & slender. There was a small white filament in the vitreous in front of the papilla - Two foci of choroiditis seemed to be behind some of the choroidal vessels, while there were many small patches of choroiditis at the periphery, not all behind the vessels, & some of these foci were surrounded by hemorrhages.

The patient was given Subconj. inj^{no} and Hypodermic inj^{no} of Sublimat^e for treatment, and 5 days afterward after two such of each the Vision was

R.E. V = $\frac{1}{3}$ reads No. 1 (weak) at 15 centimeters

I.E. V = $\frac{1}{2}$ reads No. 1 (weak) at 20 centimeters

24th Feb. '92.

Continuing

R.E. V = $\frac{1}{2}$ reads No. 1 at 20 cm. } 4th March
I.E. V = $\frac{2}{3}$ reads No. 1 at 25 cm.

This was after 6 such inj^s, and the patient ex-
pressed himself delighted with his progress, saying that
it far exceeded his expectations. The case further im-
proved

R.E. V = $\frac{2}{3}$, reads No. 1. at 25 cm. }
L.E. V = $\frac{2}{3}$, read No. 1 " " " } 17th March.

after 8 s.-cj. + 9 hypodermic injections.

On the 17th March without apparent cause,
the patient found the sight of his R.E. again
diminishing, and on the next occasion of seeing him
it was found (March 25th) that a relapse had
taken place in that eye, the L.E. remaining as before,
Vision now

R.E. V = $\frac{1}{10}$, reads No. 9 at 25 cm. }
L.E. V = $\frac{2}{3}$ read No. 1 " " " } March 25th

S. cj. inj^s + hypodermic were all along continued,
the Fundus (Papilla) was scarcely visible, while
the Vitreous appeared dim & of a reddish tint.
In a little more than a fortnight however under
the continued treatment, the Vitreous had cleared
up, Fundus became again visible and the
Vision brought to what it was before

R.E. V = $\frac{2}{3}$ reads No. 1 at 25 cm. }
L.E. V = $\frac{2}{3}$ read No. 1 " " " } 10th April '92.

Since this date the patient has gone on most
satisfactorily without check of any kind.

Disseminated Chorio-Retinitis -

M^{lle} S. D. aged 19 years. Complained of defective vision for the last 2 years, but did not present herself for treatment till a year ago Feb: 1891. She has always had good health, & looks very strong & healthy, has very good antecedents as to history, there being nothing in the way of Rheumatism or Gout, nor can any history of Syphilis be elicited. The vision of both eyes was very defective and the lesions in the fundus very numerous & pronounced.

When she first came

R.E. V = $\frac{1}{6}$; reads No. 1 at 20 cm. } Feb: 16th 1891.
I.E. V = $\frac{1}{8}$; reads No. 6 at 20 cm.

Her treatment at that time was hypodermic injections of sublimite twice & sometimes three times a week when after 3 months there was an amelioration as follows though it was slow

R.E. V = $\frac{1}{4}$ (weak) reads No. 1 at 20 cm. } 23rd May '91
I.E. V = $\frac{1}{6}$ reads No. 3 "

after 40 hypodermic injections.

During the ensuing 5 months (May to October 1891) these injections were continued though not so regularly or frequently and at this time

R.E. V = $\frac{1}{6}$ reads No. 2 } 27th October 1891
I.E. V = $\frac{1}{8}$ reads No. 5

a retrogression; she then had between this last date & the 12th December 1891 20 more hypodermic injections but there was no improvement or change in the vision, it still being

R.E. V = $\frac{1}{6}$ reads No. 2, at 20 cm. } 12th Dec. '91
I.E. V = $\frac{1}{8}$ reads No. 5 " " "

The hypodermic injections were continued, but on this date 12th Dec '91. it was decided to give sub-conjunctival inj^{ns} also, and in 6 days after 3 s.cj. inj^{ns} the following amelioration had taken place:-

R.E. $V = \frac{1}{6}$ reads No. 1 at 20 cm. }
 I.E. $V = \frac{1}{6}$ reads No. 4 " " " } 18th Dec. '91.

Later after 10 s.cj. inj^{ns}

R.E. $V = \frac{1}{4}$ reads No. 1. }
 I.E. $V = \frac{1}{6}$ reads No. 3 } 5th Jan. '92

Continuing

R.E. $V = \frac{1}{4}$ reads No. 1. }
 I.E. $V = \frac{1}{6}$ reads No. 2. } 29th Jan. '92

The patient then stayed away for a fortnight, not having either hypodermic or s.cj. inj^{ns} Result:-

R.E. $V = \frac{1}{6}$ reads No. 2 at 20 cm. }
 I.E. $V = \frac{1}{6}$ reads No. 2 (weak) at 15 cm. } 15th Feb. '92

As far as she had had 100 hypodermic inj^{ns} in all; and after this last retrogression she still stayed away another fortnight so that no s.cj. inj^{ns} were made for a month, but when she returned March 2nd '92 they were recommenced alone (no hypodermic inj^{ns} being given now) and in 5 days after 2 s.cj. inj^{ns} an improvement had taken place from

R.E. $V = \frac{1}{6}$ reads No. 2 at 20 cm. }
 I.E. $V = \frac{1}{6}$ reads No. 2 (weak) at 15 cm. } March 2nd '92

to

R.E. $V = \frac{1}{3}$ reads No. 1 at 20 cm. }
 I.E. $V = \frac{1}{4}$ reads No. 2 at 20 cm. } March 7th 1892.

and after 6 s.cj. inj^{ns} of this last series

R.E. $V = \frac{1}{2}$ (weak) reads No. 1 }
 I.E. $V = \frac{1}{4}$ reads No. 2 } 16th March. '92.

The patient has gone on improving, her vision having become still better, the s. c. inj^{ns} being now continued at longer intervals; and it is possible that she might be ^{almost} cured as to Elion, but we cannot hope that the anatomical lesions though greatly diminished will ever entirely disappear, as they were so pronounced & far advanced.

This case serves to illustrate the rapid & marked benefit derived from sub-conjunctival injections, also benefit to a less extent as regards rapidity & intensity of hypodermic injections, of sublimate, though after a certain number of the latter no further progress was made.

Neuro-Retinitis -

M. M. A. C.... aged 38 years - Duration of the disease when he came to us 3 1/2 months. In July 1891 his sight began to diminish, and he then consulted Dr. Parmand Oculist, of Paris. who ordered him Mercurial frictions on the temples & prescribed Salicylate of Soda of which the patient took 4 grammes (about 60 grains) daily for 3 months, also carrying out the frictions during this time, but without any good effect, so he came to us for advice. He denied all antecedents of Syphilis personal & parental, said he was Rheumatic. He had Influenza in 1889; his occupation exposed him to sudden changes in temperature, heat & cold. He is fr. very excitable & apparently nervous temperament. The right eye was first affected, there being a mist before his eye, but soon the other eye followed. On presenting himself to us on the 9th October '91



R.E.

the following was found to be the state of the case:-

R.E. V = $\frac{1}{3}$; reads No. 3 at 20 cm.	} 9 th Octbr '92
I.E. V = $\frac{1}{2}$; reads No. 3 at 20 cm.	

The field of Vision was almost normal in extent, a little contracted, but there was a central scotoma for the deep green in each eye, while the white (chalk in this instance) appeared gray. The other colours were seen well & clearly by each eye.

Ophthalmoscopic Appearances -

The papillae in each eye were hazy slightly reddish, hyperaemic & indistinct in outline.

The macular region of the R.E. presented an irreg. alar of pigmentation, a slight darkish shading, but that of the I.E. was normal, showed no alterations.

He was given hypodermic & sub-conjunctival injections of Sublimat, and after 3 of the former & 2 s.c. inj^{ns}, at the end of a week's treatment,

R.E. V = $\frac{2}{3}$; reads No. 2 at 20 cm.	} 16 th Oct. '91
I.E. V = $\frac{2}{3}$; reads No. 2 at 20 cm.	

and similar treatment being continued.

R.E. V = $\frac{2}{3}$, read No. 2	} 3 rd Nov: '91
I.E. V = 1 reads No. 1	

He then went away to the country for 10 days, but during this time he had a relapse ^{in the R.E.} with a rapid & marked retrogression as on his return

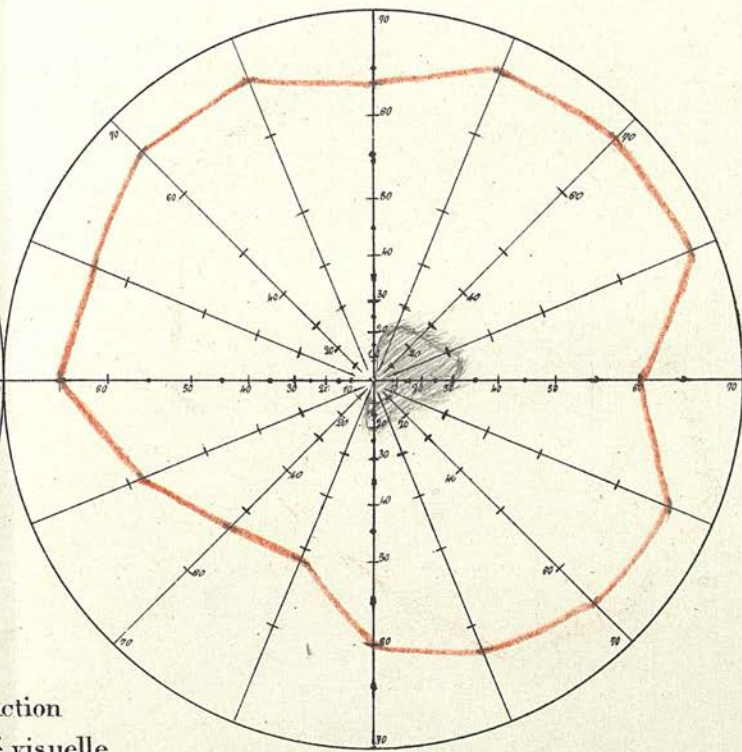
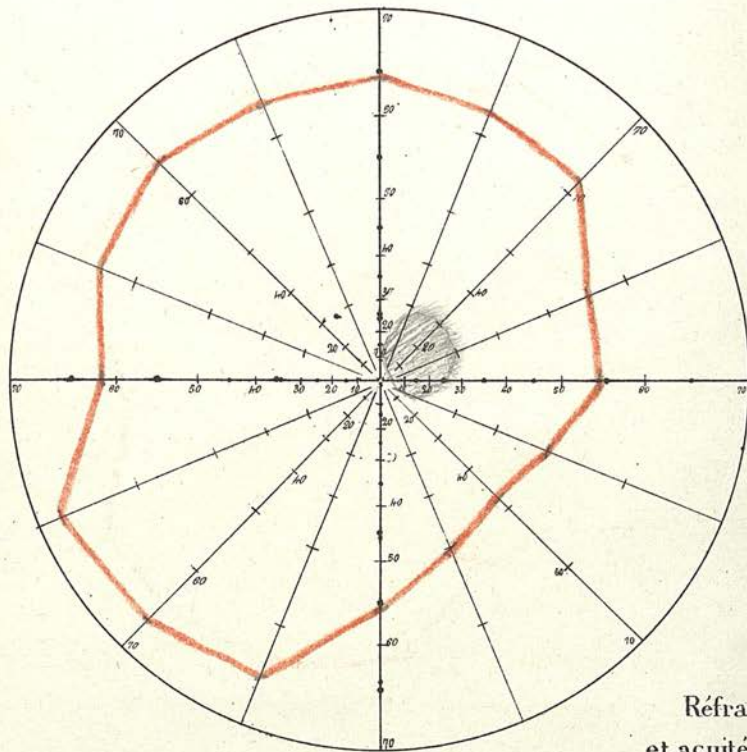
R.E. V = $\frac{1}{4}$; reads No. 3 at 20 cm.	} 13 th Nov: '91
I.E. V as before -	

While away he had all the time carefully carried

L.E.

Examen Campimétrique

R.E.



Réfraction
et acuité visuelle

œil gauche.....

œil droit.....

*The Red pencil marking represents the Field of Vision -
The Dark shading is meant to represent that portion where the white appeared Gray -*

R.E.

out Mercurial frictions to the temples as he had been told to.

The S.-cj. inj^s & hypodermic were resumed & after two of each

R.E. V = $\frac{1}{2}$ reads No. 3 at 20 cm. } 14th Nov. '91
I.E. V as before $\frac{2}{3}$ & .

while later on, nearly two months, after he had had 16 S.-cj. inj^s & 30 hypodermic,

R.E. V = $\frac{2}{3}$; reads No. 2 at 20 cm. } 11th Jan. 1892
I.E. V = $\frac{2}{3}$; reads No. 1 at 20 cm.

From this date the S.-cj. inj^s were only given once a week, while the hypodermic were discontinued altogether, the result being that the vision of the R.E. retrograded

R.E. V = $\frac{1}{2}$; reads No. 2 at 20 cm. } 25th Jan. '92
I.E. V as before

and that this was due to the S. cj. inj^s having been given less frequently & not to the discontinuation of the hypodermic, seems clear from the further progress of the case as with the former only, after a fortnight

R.E. V = $\frac{2}{3}$ reads No. 1 (some words) at 20 cm. } 6th Feb. '92
I.E. V = 1 reads No. 1 (clearly) at 20 cm

and later, normal vision was reached

R.E. V = 1, reads No. 1 at 20 cm. } 23rd Feb. 1892.
I.E. V = 1, reads No. 1 at 20 cm.

while at this date there was no longer any scotoma for the deep green, or the white (chalk), while with the

Ophthalmoscope -

The papillae were now very slightly hyperaemic or infiltrated, & the outlines were much

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more distinct, but there was still a slight alteration of the pigmentation in the macular region of the R.E.

Early in this case, when the patient fixatedly regarded an object, or for example a word, he saw the letters at the beginning & end better than those in the centre, but this faded off under the treatment, but again with the R.E. after the relapse, there was a slight shadow between the eye & the object looked at if small, which also later disappeared.

The patient returned to us on the 7th March, saying that his R.E. was again failing him, and on examination we found, to our surprise, some opacities in the Vitreous in the form of the well-known dust, & this was followed 10 days later by the same thing in the I.E. and we concluded that the case was of Specific origin, though denied by the patient, and that had not the mercurial treatment byunctions (general) temporal frictions, hypodermic injections & probably most important of all (as the patient was enjoying excellent health otherwise, all the time, it being the only local manifestation) sub-conjunctival injections, been so promptly begun & carried out, we should have had a typical Syphilitic Choroid-Retinitis with fully developed lesions &c.

On 7th March, after the dust-like opacities in the Vitreous

R.E. V = $\frac{1}{3}$ reads No. 3 at 20 cm. & on 18th March

I.E. V = $\frac{1}{2}$ reads No. 1 (weak) "

After 1 s. of inj. the dust had disappeared in the R.E.

R.E. V = $\frac{2}{3}$ reads No 1 at 20 cm.

and a fortnight later from the I.E., so that

after 6 s.c. inj^{ns} in the I.E. + 2 in the R.E.
he had again normal vision

R.E. V = 1, reads No. 1. at 20 cm.

I.E. V = 1, reads No. 1. " " "

} 30 March '92.

No opacities in the vitreous + nothing appreciable in
the fundus. From this time he has continued to go
on well, not having returned.

Optic Neuritis -

M. V. R... aged 38 years.

The affection began about the 1st October 1891 by
headaches + pains in the region of the orbit when the
patient abstracted the R.E. At the end of 8 days he
found the sight of this eye much diminished, but
did not come to us till the 17th Nov: '91, 5 weeks
later. We then noted that his vision was

R.E. V = (+1.5 D.) = $\frac{1}{4}$;

I.E. V = 1. (normal.)

} 17th Nov: '91.

+ that there was a slight Dyschromatopsia, he not
distinguishing the colours well.

The field of Vision was contracted, while there
was an incomplete paracentral scotoma for the
green + the red. With the

Ophthalmoscope,

there was a very pronounced infiltration, hyper-
aemia, of the papilla which was swollen, while
around the disc was a halo of haze. The veins
were dilated + somewhat tortuous. There was no
distinct margin of the papilla.

From the history the case appeared to be specific in origin.
The patient was treated by sub-conjunctival injections

of Sublimite, & Mercurial frictions to the temple,
and in 10 days time

R.E. V. + 1.50. = 1/2 - 27th Nov. '91.

while the Dyschromatopsia had disappeared, and
the Neuritis notably diminished, the papilla remaining
dirty-grey in colour;

and 10 days later still 7th Dec. '91

R.E. V = 2/3 (+1.50) reads No. 2 at 25 cm. with

The field of Vision had by this time become almost normal.

after 7 o.c.j. inj^{ns} the Vision had become

R.E. V (1+50) = 1, reads No 2 with +3D at 25 cm.

16th Dec '91

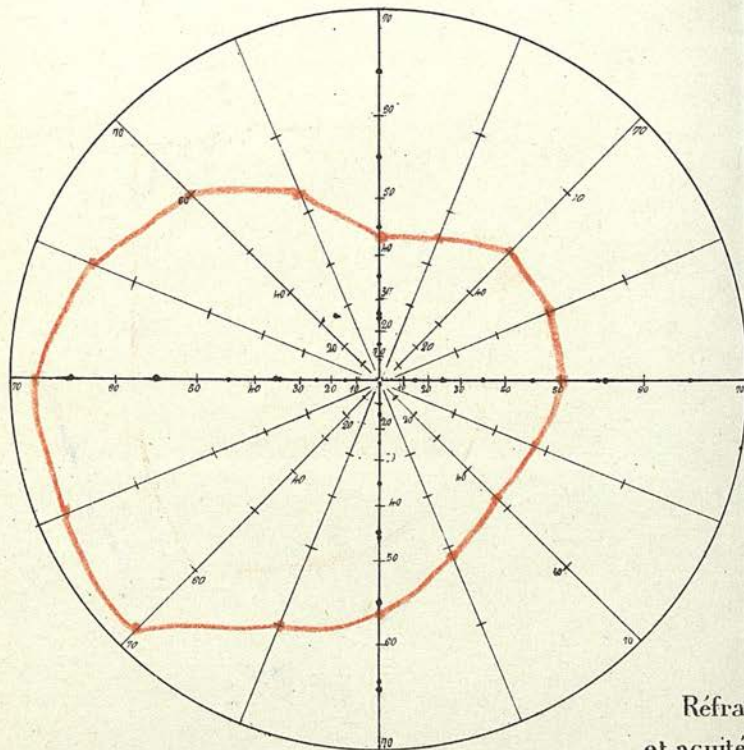
while with the

Ophthalmoscope, it was seen that the papilla had
almost assumed its normal aspect, the
vessels were no longer tortuous or dilated, but there
was still a very slight halo round the papilla, and
a fortnight later this had disappeared, though there
was still a little haze along some of the vessels - at
this latter time when he looked at a sheet of white paper
he noticed a small greenish cloud on it, this also
disappeared later & on the 15th Jan. 1892 there
was no longer any scotoma.

The Vision remained the same up to the 31st Jan. '92,
while the fundus (papilla &c) approached nearest
near to the normal until there was nothing of
appreciable abnormality & the patient has gone on
most favourably ever since.

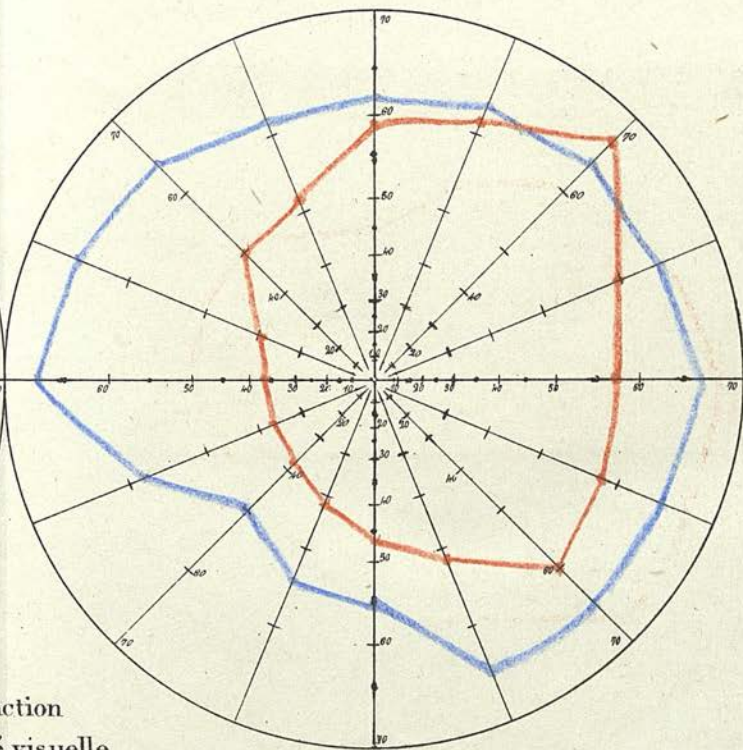
~~I may mention that with regard to this case, the
opinion stated by Dr. Davies as to diagnosis, was
that it was a Retrobulbar Neuritis of an Intra-
ocular origin, but by Dr. Abadie that it was not
of the Retrobulbar form -~~

Examen Campimétrique



œil gauche.....

Réfraction
et acuité visuelle



œil droit.....

The Red pencil marking represents the extent of the
field of vision on the 17th November, 1891.
The Blue similarly on 5th December 1891

Optic Neuritis -

M. A. R... 27 years of age.

The patient was Rheumatic, having had frequent attacks in the shoulders, knees, wrists &c. No antecedents of Gout or Syphilis. Fairly good health generally speaking, but since some time has suffered from headache (Fr. migraine ophthalmique.) Coming under our notice on the 8th February 92 he was examined, and as to Vision it was found that there was one Dioptrie of Myopia in each eye, also

R.E. - 1 D. V = 1/6 reads No. 4 at 20 cm. } 8th Feb. 1892
L.E. - 1 D. V = 1/10 reads No. 5 " " " }

The visual field was a little contracted but almost normal extent; there was however a central scotoma for the Red & the Green slightly accentuated & only observed in the L.E.

For his treatment S-cj inj. were given, and after the first one there was an immediate marked improvement

R.E. V (-1 D) = 1/4 reads No 4 at 20 cm. } 11th Feb. '92.
L.E. V (-1 D) = 1/4 reads No 4 " " " }

Ophthalmoscopic appearances -

Very similar to those of previous case (U. R....) Papilla hazy, hyperaemic &c, a granular condition of the macular region in each eye but not extensive.

For the severe headache which had prevented him from sleeping many nights, he was given an Epi-cranial injection (hypoclermic into the scalp) of sublimate, the quantity injected being 1/2 of a gramme of a solution 1 to 300 -



L.E.

R.E.

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When he returned 5 days afterwards the headache had been very greatly relieved & he had been able to sleep well at night.

One more similar injection was made and after that he has not since complained of headache - After the 2nd s. c. inj.:

R.E. $V(-1D) = \frac{1}{4}$ reads No. 2. at 20 cm.

I.E. $V(-1D) = \frac{1}{4}$ reads No. 3. " " "

On Feb. 26th there was further improvement in the Vision, while on the 3rd March there was no more Scotomata for the Red or Green -

The s. c. inj. were all the time being continued & with good result as.

R.E. $V(-1D) = \frac{1}{2}$ (nearly) reads No. 1 at 20 cm.

I.E. $V(-1D) = \frac{1}{3}$; reads No. 2 at 20 cm. ^{7th inch}

Ophthalmoscope -

In the R.E. Papilla much less infiltrated, less hyperaemic, the inflammatory process much diminished.

I.E. similar but more marked hyperaemia etc. than in the R.E.

Though the lesions in the fundus have improved, there has not been much further improvement in the Vision, but the case has always since gone on satisfactorily.

Optic Atrophy -

M^{rs} M. ... Aged 37 years of age.

In the last 10 or 12 years she had had defective vision due to Chorio-Retinitis following on which there took place some alterations of the Retinal vessels and as a result Optic Atrophy developed. Though no history of Syphilis could be elicited it is probable that the case was a specific nature.

The patient complained of Rheumatism however. When she first came her Vision was

R.E. V = 1/8 reads No. 6 at 25 cm. } 24th Oct. '91.
I.E. V = 1/8 reads No. 8 " " "

while with the Ophthalmoscope

The papilla of each eye was very white, showing a typical state of Atrophy - Chorio-retinitis very typical, vessels in the fundus scarcely to be seen - Points of pigment, + small foci of choroiditis in the periphery of the fundus &c.

Her treatment at this time consisted of hypodermic injections of sublimate + temporal mercurial ointment with the result nearly 4 weeks later of no improvement =

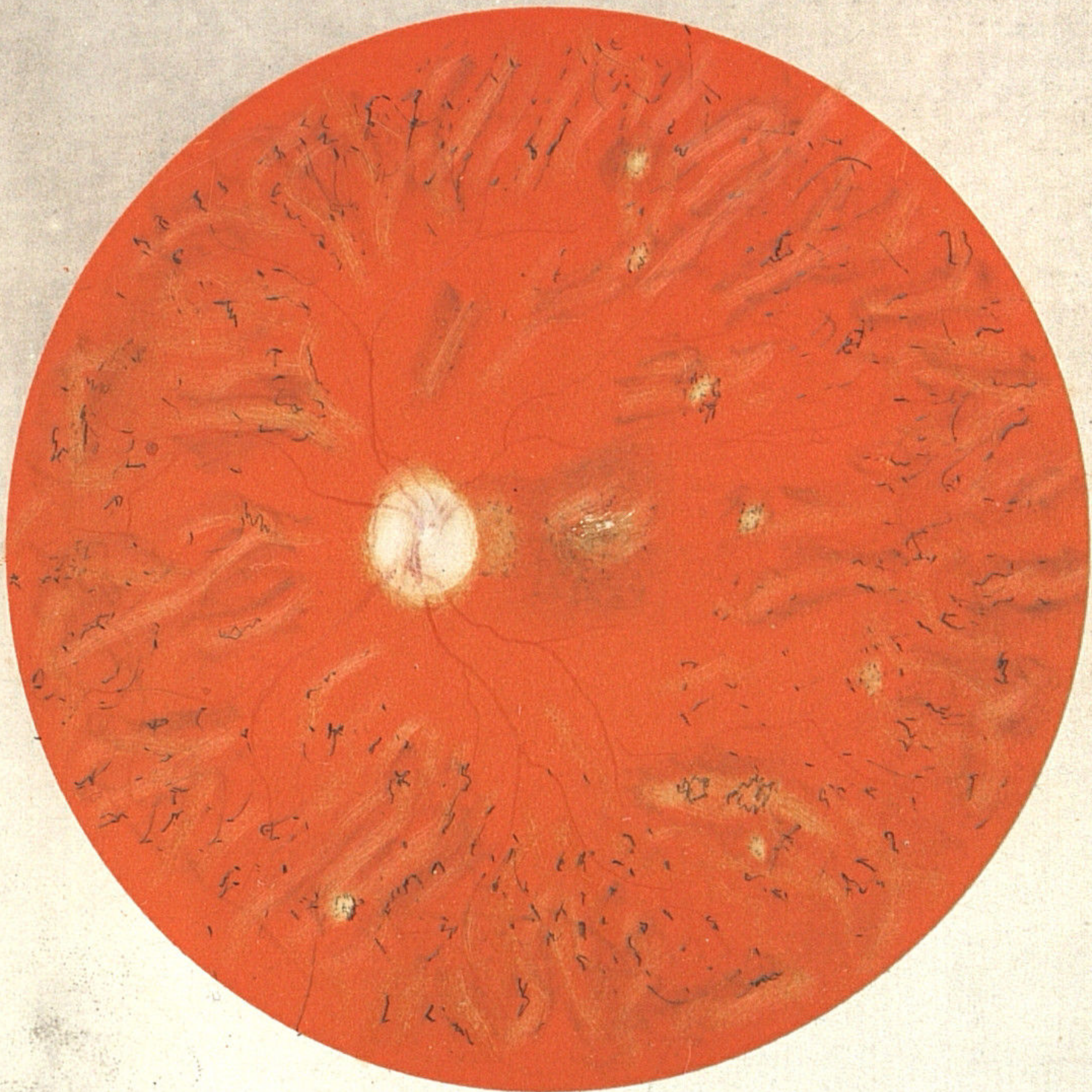
R.E. V = 1/8 reads No. 8. } 19th Nov. '91.
I.E. V = 1/8 reads No. 9.

Her field of Vision was examined and found to be very contracted.

More than 2 months later under the same treatment

R.E. V = 1/10 (weak) reads No. 8 } 29th Jan. '92
I.E. V = 1/10 (weak) reads No. 9

still no improvement but rather a retrogression, so as by this time she had received 40 hypodermic



L.E.

43

injections & not derived any benefit, it was decided to give sub-conjunctival injections in addition, and in a month's time after 10 s.c.j. inj. there was the following satisfactory result

R.E. V = $\frac{1}{4}$ reads No. 7 at 25 cm. }
I.E. V = $\frac{1}{4}$ reads No. 8 " " } 26th Feb. '92

Continuing the s.c.j. inj. we had still further improvement

R.E. V = $\frac{1}{4}$; reads No. 5 at 25 cm. }
I.E. V = $\frac{1}{4}$; reads No. 6 " " } 14th March '92

and later

R.E. V = $\frac{1}{3}$; reads No. 3 at 25 cm. }
I.E. V = $\frac{2}{3}$ (weak) reads No. 6 " " } 4th April '92

The field of vision was still much contracted. There was not any very great appreciable improvement, anatomically, of the lesions in the fundus, but the great progress made as regards the vision, so important to the patient, was very satisfactory. She has gone on steadily improving up to now, without any check.

This case seems to illustrate the benefit derived from sub-conj. injections after hypodermic injections & Temporal frictions had quite failed.

44

Optic Atrophy, of syphilitic origin -

M. M.... 29 years of age, contracted syphilis at the age of 18 years (9 years ago). He gave a history of indurated chancre, but stated that he had no secondary signs, & that he did not go through a course of mercurial treatment. Two years ago nearly he noticed that when he looked at an object he saw it as through a cloud which was thicker in the case of the R.E. In August 1890 he went through a month's treatment of mercurialunctions but did not follow this up, and gradually his sight decreased until ~~August~~ ^{March} 1891 when the above diagnosis was made by Dr. Abadie, the patient having come to seek his advice. It should be mentioned that in September 1890, Dr. Parent an eminent Oculist in Paris had made the same diagnosis & prescribed a course mercurialunctions to which were added Styrachine internally, & electricity locally, but in spite of this treatment his sight always diminished. It was not until November 1891 that he consulted at Dr. Abadie's clinique to undergo a course of conjunctival & hypodermic injections of Sublimat. At this time the state of his case was :-

R.E. V = $\frac{1}{40}$; reads No. 9 at 10 centimeters. } 24 Nov. 1891.
L.E. V = $\frac{1}{15}$; reads No. 6 at 15 cm. (with difficulty)

The field of vision was a little contracted, central vision much altered without ones being able to define a central absolute scotoma, his fixation of objects was eccentric. The colours were not recognised except blue & yellow.

Ophthalmoscopic Appearances-

The papillae were of a dull white with very marked atrophic excavations. The vessels did not appear to be altered or diminished in calibre. There was nothing very appreciable in the macular regions.

In 8 days time after 4 s. inj^{ns} and 4 hypo-dermic

R.E. $V = \frac{1}{15}$, reads No. 8 at 20 cm. }
I.E. $V = \frac{1}{8}$ reads No. 6 at 20 cm. } 2nd Dec. 1891.

and 33 days later

R.E. $V = \frac{1}{10}$ reads No. 6 at 20 cm. }
I.E. $V = \frac{1}{8}$ reads No. 5 " " " } 4th Jan. 1892.

From this on till Feb. 6th 92 there was not much change in the Vision, a slight improvement when reading (near Vision)

R.E. $V = \frac{1}{10}$, reads No. 5 at 20 cm. }
I.E. $V = \frac{1}{8}$ reads No. 4 " " " } Feb. 6th 92.

The field of vision had much improved, & he had gained in the colours seeing now Blue Yellow & Red.

There was a slight central scotoma for white which appeared greyish.

Up to this time the patient had had 30 s. inj^{ns} & 40 hypodermic, and was then able to resume his occupation, that of a hardware commission agent.

From this on, he continued to improve and only came three times in 2 months as he found his sight increasing so satisfactorily, and on the last occasion of seeing him it was found that his Vision had become ameliorated to

R.E. $V = \frac{1}{4}$; reads No. 4 at 20 cm. }
I.E. $V = \frac{1}{3}$; reads No. 3 at 20 cm. } 4th April 92

which with the
Ophthalmoscope,

it was with great surprise found that the papillae were no longer typical of white atrophy but were now become distinctly coloured with a slight reddish tinge.

The patient expressed the keenest satisfaction at the result of his cure & its treatment, as he had been led to understand that treatment was almost useless & his case as to regaining vision hopeless, when he left Dr. Parent.

The question must be asked here, "Was the amelioration due to S. Cj. inj^m or to the general treatment by hypodermic injections?" Probably by both; the rapid improvement following in 8 days on 4 S. Cj. inj^m & 4 hypodermic shows, it must appear, that the S. Cj. inj^m was the remedial agent, as experience has shown, and Dr. Abadie & Dr. Davies confirm it, that hypodermic injections do not act until after 10 at least have been given; while as to the later improvement, it is probable that the hypodermic treatment produced the benefit, but that this was rendered much more rapid & intense by the combination with it of the S. Cj. injections.

It will be very interesting to watch & see if the amelioration in the above case, as in others also, will be permanent or not, and this remark must apply to all the affections of the fundus so far treated & ameliorated by the S. Cj. inj^m &c., but time & experience alone can prove it.

M.

B N

$V = \frac{1}{10}$

0.

E R

$\frac{1}{8}$

0.

N C D

$\frac{1}{6}$

20

P R F H

$\frac{1}{4}$

15.

L C B D T

$\frac{1}{3}$

10

E P D G B U

$\frac{1}{2}$

7,50.

B L R T V P E

$\frac{2}{3}$

1

D = 0,25

Il y a des justes dont la conscience est si tranquille, qu'on ne peut s'approcher d'eux sans participer à la paix qui s'exhale, pour ainsi dire, de leur cœur et de leurs discours. A mesure que le solitaire parlait, je sentais les passions s'apaiser dans mon sein, et l'orage même du ciel semblait s'éloigner à sa voix. Les nuages furent bientôt assez dispersés pour nous permettre de quitter notre retraite. Nous sortîmes de la forêt et nous commençâmes à gravir le revers d'une haute montagne. Le chien marchait devant nous, en portant au bout d'un bâton une lanterne éteinte. Je tenais la main d'Atala, et nous suivions le missionnaire. Il se détournait souvent pour nous regarder, contemplant avec pitié nos malheurs et notre jeunesse. Un livre était suspendu à son cou ; il s'appuyait sur un bâton blanc. Sa taille était élevée, sa figure pâle et maigre, sa physionomie simple et sincère. Il n'avait pas les traits morts et effacés de l'homme né sans passions ; on voyait que ses jours avaient été mauvais, et les rides de son front montraient les belles cicatrices des passions guéries par la vertu et par l'amour de Dieu et des hommes. Quand il nous parlait debout et immobile, sa longue barbe, ses yeux modestement baissés, le son affectueux de sa voix, tout en lui avait quelque chose de calme et de sublime. Quiconque a vu, comme moi, le père Aubry cheminant seul avec son bâton et son bréviaire dans le désert, a une véritable idée du voyageur chrétien sur la terre.

Après une demi-heure de marche dangereuse par les sentiers de la montagne, nous arrivâmes à la grotte du missionnaire. Nous entrâmes à travers les

2

D = 0,50

Lierres et les giraumonts humides que la pluie avait abattus des rochers. Il n'y avait dans ce lieu qu'une natte de feuilles de papaya, unealebasse pour puiser de l'eau, quelques vases de bois, une bêche, un serpent familier, et, sur une pierre qui servait de table, un crucifix et le livre des chrétiens. L'homme des anciens jours se hâta d'allumer du feu avec des lianes sèches ; il brisa du maïs entre deux pierres, et, en ayant fait un gâteau, il le mit cuire sous la cendre. Quand ce gâteau eut pris au feu une belle couleur dorée, il nous le servit tout brûlant avec de la crème de noix dans un vase d'érable. Le soir ayant ramené la sérénité, le serviteur du grand esprit nous proposa d'aller nous asseoir à l'entrée de la grotte. Nous le suivîmes dans ce lieu qui commandait une vue immense. Les restes de l'orage étaient jetés en désordre vers l'orient ; les feux de l'incendie allumé dans les forêts par la foudre brillaient encore dans le lointain. — Il y a des justes dont la conscience est si tranquille, qu'on

3

D = 0,75

ne peut s'approcher d'eux sans participer à la paix qui s'exhale, pour ainsi dire, de leurs cœurs et de leurs discours. A mesure que le solitaire parlait, je sentais les passions s'apaiser dans mon sein, et l'orage même du ciel semblait s'éloigner à sa voix. Les nuages furent bientôt assez dispersés pour nous permettre de quitter notre retraite. Nous sortîmes de la forêt et nous commençâmes à gravir le revers d'une haute montagne. Le chien marchait devant nous, en portant au bout d'un bâton la lanterne éteinte. Je tenais la main d'Atala, et nous suivions le missionnaire. Il se détournait souvent pour nous regarder, contemplant avec pitié nos malheurs et notre jeunesse. Un livre était suspendu à son cou ; il s'appuyait sur un bâton blanc. Sa taille était élevée, sa figure pâle et maigre, sa physionomie

4

D = 1 mètre

simple et sincère. Il n'avait pas les traits morts et effacés de l'homme né sans passions ; on voyait que ses jours avaient été mauvais, et les rides de son front montraient les belles cicatrices des passions guéries par la vertu et par l'amour de Dieu et des hommes. Quand il nous parlait debout et immobile, sa longue barbe, ses yeux modestement baissés, le son affectueux de sa voix, tout en lui avait quelque chose de calme et de sublime. Quiconque a vu, comme moi, le père Aubry cheminant seul avec son bâton et son bréviaire dans le désert, a une véritable idée du voyageur chrétien sur la terre. Après une demi-heure de

5

D = 1,25

marche dangereuse par les sentiers de la montagne, nous arrivâmes à la grotte du missionnaire. Nous entrâmes à travers les lierres et les giraumonts humides que la pluie avait abattus des rochers. Il n'y avait dans ce lieu qu'une natte de feuilles de papaya, unealebasse pour puiser de l'eau, quelques vases de bois, une bêche, un serpent familier, et, sur une pierre qui servait de table, un crucifix et le livre des

6

D = 1,50

chrétiens. L'homme des anciens jours se hâta d'allumer du feu avec des lianes sèches ; il brisa du maïs entre deux pierres, et, en ayant fait un gâteau, il le mit cuire sous la cendre. Quand ce gâteau eut pris au feu une belle couleur dorée, il nous le servit tout brûlant avec de la crème de noix dans un vase d'érable. Le soir ayant ramené la sérénité, le

7

D = 2 mètres

serviteur du grand esprit nous proposa d'aller nous asseoir à l'entrée de la grotte. Nous le suivîmes dans ce lieu qui commandait une vue immense. Les

8

D = 3 mètres

restes de l'orage étaient jetés en désordre vers l'orient ; les feux de l'incendie allumé dans les forêts par la foudre.

9

D = 4 mètres

les plantes empruntent quelque chose du ciel, dont elles sont proches.

10

D = 5 mètres

On voit très-fréquemment, par un calme profond, lorsque le soleil se lève, les fleurs de la vallée paraître immobiles sur leurs

Myopic Chorioiditis -

Mrs G. aged 49 years.

This patient complained that her eyesight had failed her greatly for the last 2 years, but that she had noticed the I.E. especially so during the last 3 months. On coming to us on the 21st March

1892 it was found on examination that both eyes were very Myopic, her Vision being

R.E. V with -10 D. = $\frac{1}{3}$ *	} 21 st March '92.
I.E. V with -12 D. = $\frac{1}{3}$	

10 & 12 dioptries of Myopia respectively having to be corrected before her best Vision ($\frac{1}{3}$) could be obtained on this date.

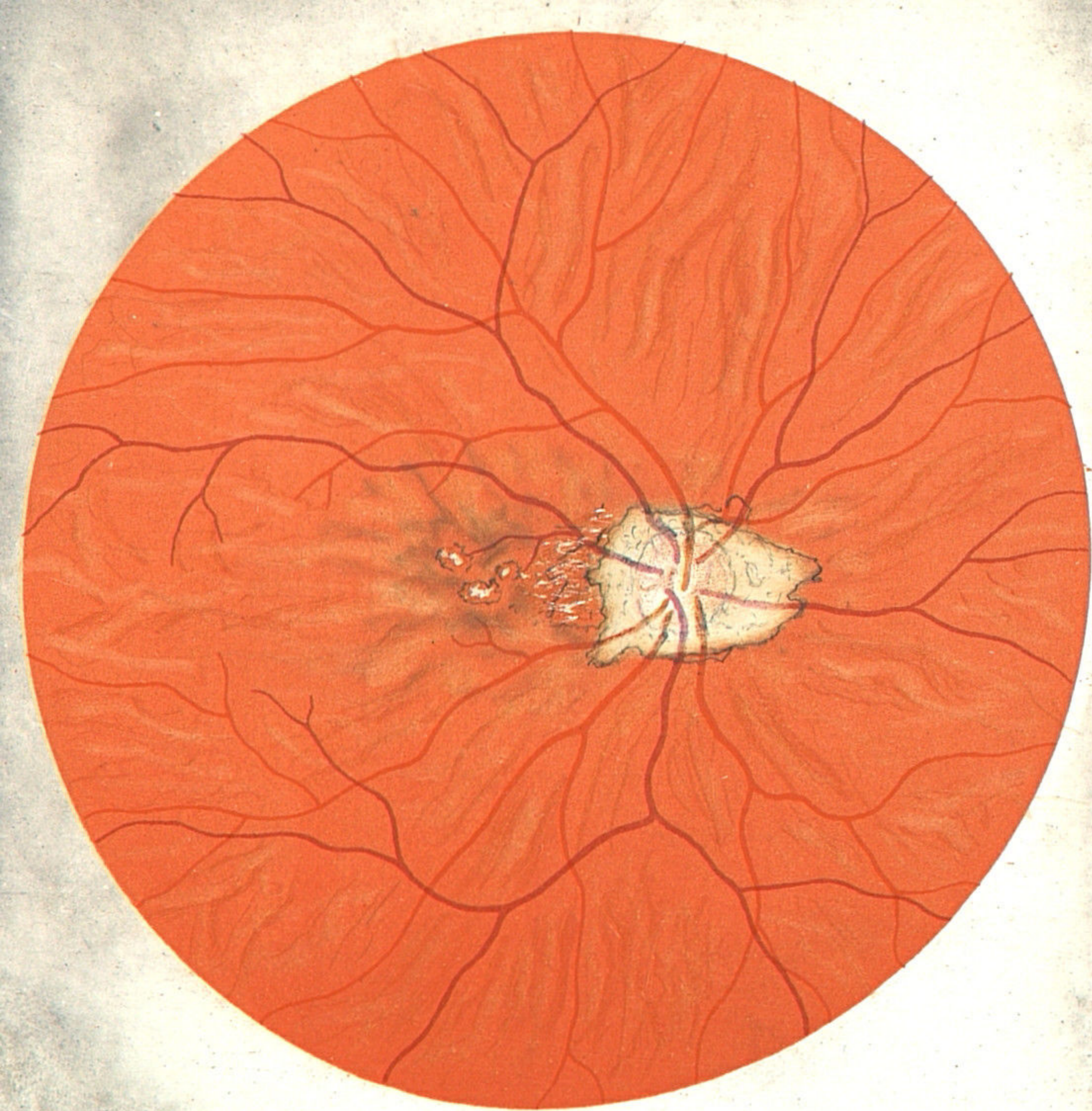
The Ophthalmoscope

confirmed the high Myopia which had been found by testing the Vision with glasses, and further revealed some distinct Choroidal alterations in the macular regions of each eye. Also a pronounced posterior staphyloma, quite surrounding the papilla in each fundus. Along with the Choroidal Atrophy in the macular regions, there were considerable alterations of the pigmentation.

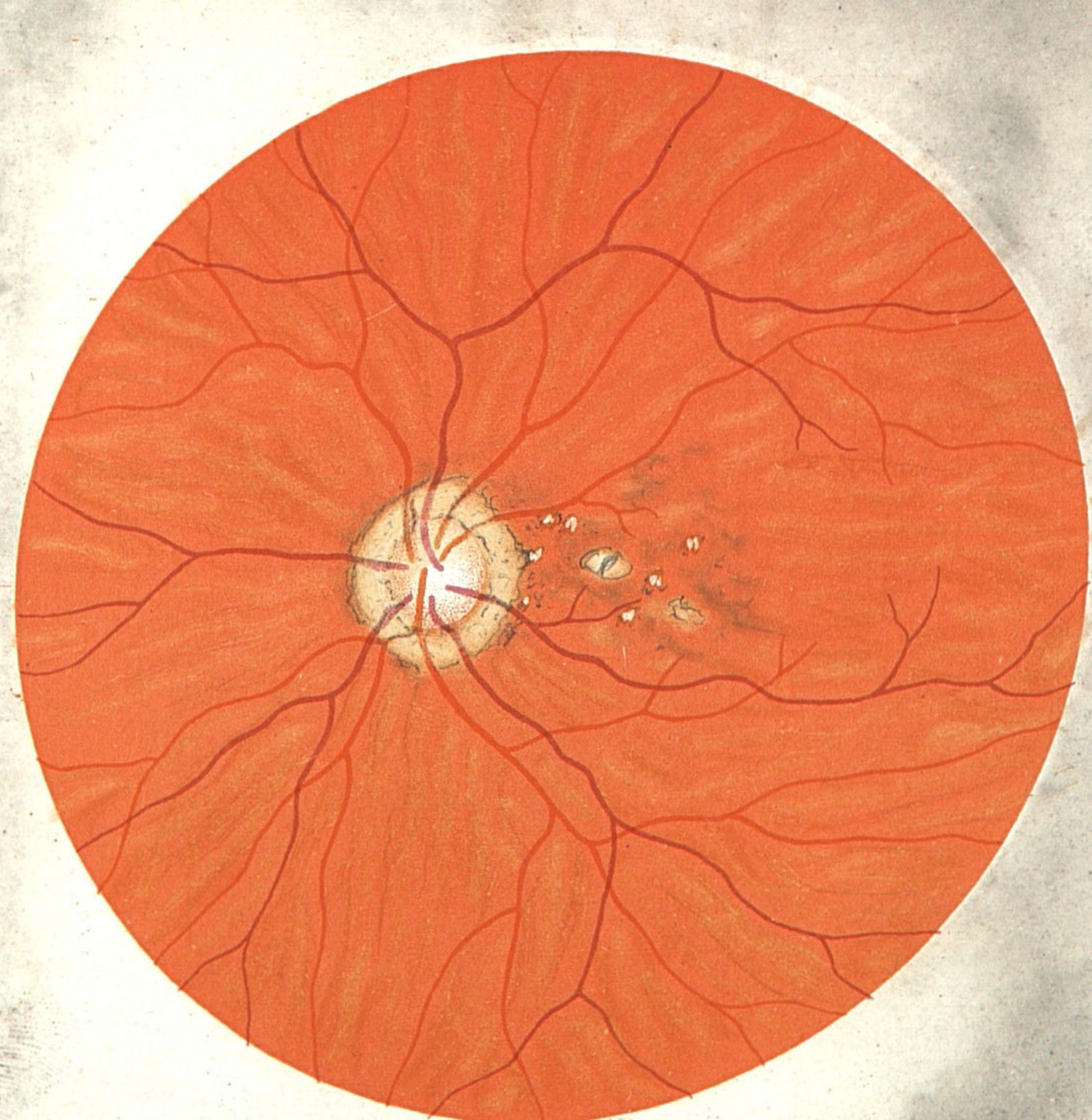
The treatment consisted of Subconjunctival injections of sublimate and after two had been given, in 4 days, the vision of the I.E. had improved, and it was found that its Myopia was decreased by 2 dioptries - The R.E. remained about the same.

R.E. V = -10 D = $\frac{1}{3}$;	} 25 th March '92.
I.E. V - 10 D = $\frac{1}{2}$ (weak)	

* This patient only knew her letters, did not know how to read, so could not be examined with the reading type.



R.E.



L.E.

4 days later still, there was further improvement

R.E. V - 10 D = $\frac{1}{2}$ (weak.)

I.E. V - 10 D. = $\frac{1}{2}$ (clearly)

} 29th March '92

and continuing, after 6 s. c. i. i. n. s. in all

R.E. V - 10 D = $\frac{2}{3}$

I.E. V - 9 D = $\frac{2}{3}$

} 2nd April '92.

Thus it will be seen that in a fortnight the Myopia of the I.E. had been reduced by 3 dioptries, at the same time its Vision had been markedly improved, a very satisfactory result. The Vision of the R.E. had also been augmented, but the degree of Myopia remained the same.

The difference in the results of the two eyes was probably due to the fact that the affection seemed, from the patient's account, to be much more recent ⁱⁿ than case of one eye (I.E.) than in the other. Up to this time there was no appreciable change for the better in the appearance of the lesions in the fundus.

For a fortnight after the last above-mentioned date the case remained about the same, but the patient was not coming so regularly as at first.

It is as yet impossible to say in what way the s. c. i. i. n. s. cause a decrease in the Myopia, which has several times been observed. The improvement in the Vision is undoubtedly due to the action of the Mercury, introduced in this way (s. c. i. i. n. s.), on the choroiditis, as in ordinary cases of Choroiditis.

The further developments of such cases will be very interesting to observe, as time has not as yet allowed of anything definite being arrived at.

49

Myopic Choroiditis -

M^{rs} F. de S^{te} M. 60 years of age.

This patient, in following the advice of her former Oculist in Paris, had, before coming to us, undergone a long course of Anti-syphilitic treatment in the form of mercurial inunctions, and taking mercurial pills internally. She however stated that no benefit was derived from it, and on this account presented herself to us, on the 20th January, 1892.

Her Vision at this time was as follows :-

R.E. V + 1.5 D. = $\frac{2}{3}$, reads No. 1 at 25 cm. 20th Jan. 1892.

L.E. V - 12 D. = $\frac{1}{10}$, reads No 6 at 20 cm. without glasses

thus showing a very high degree of Myopia, which was confirmed by the Direct method of Examination with the Ophthalmoscope, while the

Ophthalmoscopic Appearances

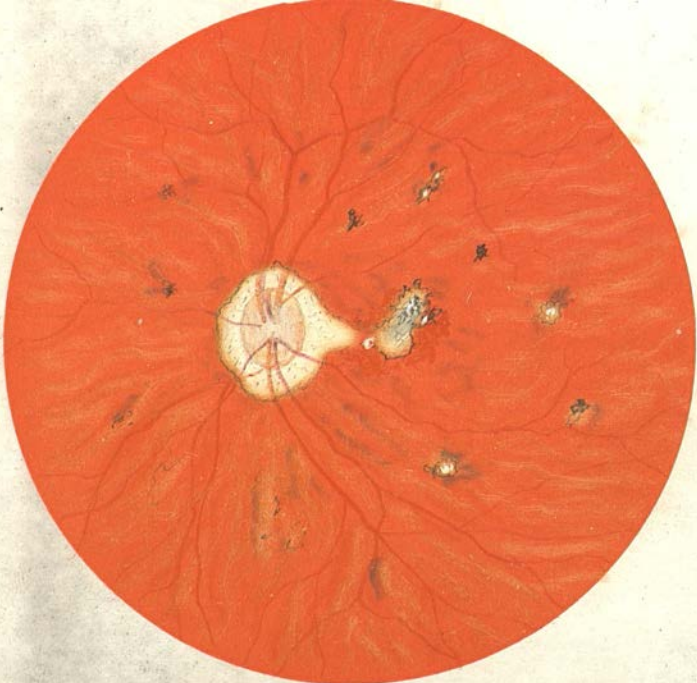
were, an extensive, marked, Insidiously Choroiditis affecting more especially the central parts of the Fundus, round the Papilla and in the Macular region.

Sub-conjunctival injections were also given, and 10 days later after 2 such injections, there was a marked amelioration in the vision with a lessening by 3 Dioptres of the Myopia thus

R.E. V + 1.5 D. = $\frac{2}{3}$ reads No. 1. at 25 cm. 30th Jan. 1892.

L.E. V - 9 D. = $\frac{1}{3}$ (weak), reads No 2 (weak) at 20 cm.

It will be seen from above that the Left Eye was alone affected, there being $\frac{1}{2}$ Dioptres of Presbyopia in the Right Eye which remained the



L.E.

same throughout -

After 3 s. of my^m 10 days later still, her Vision was the same as on the last occasion, but there was a further decrease in the Myopia, this time by 2 Dioptres -

R.E. V +1.5D. = $\frac{2}{3}$ reads No. 1 at 25 cm.

I.E. V - 7 D = $\frac{1}{3}$ (weak) reads No. 2 (clearly) at 20 cm

} Feb. 10th
1912

On Feb. 16th + 24th her Vision for distant objects remained about the same

I.E. V. - 7 D = $\frac{1}{3}$; reads No 1 at 20 cm. without glasses.

The patient was ordered, as she desired to have suitable glasses, - 4 spherical for the Left eye & +1.5 spherical for the Right eye, but after getting these, no further opportunity offered of watching her case, as we have not seen her since. (April 92)

With regard to affections of the fundus then, such as those described (i.e. Chorioiditis, Choroiditis, &c. &c.) we have had varying results when treated by sub-conjunctival injections of sublimate, such as

- (i) Complete recovery as to vision & anatomically as to lesion -
- (ii) Complete recovery as to vision but not complete as to lesion -
- (iii) Great amelioration (this is the very advanced case) as to both vision & lesion.

The question will arise as to whether there are not many affections of the fundus of the eye which do not improve under this method of treatment, and further whether harm may not be done in some cases. The latter can at once be answered, as so far not a single instance has ~~so far~~ occurred in which either injury has been done, or the lesion increased, though in a few instances no appreciable benefit has been derived, unless it be that the progress of the disease has been arrested, the case remaining stationary. Dr. Abadie here in Paris has found that S. C. inj's have produced results in cases of Detachment of the Retina and Myopic Chorioiditis (these being very high degrees of Myopia, such as 9, 10 & 12 Dioptres, with Chorioiditic lesions in the fundus accompanying them) which have very far exceeded any of those obtained by previous methods of treatment, & he has adopted this new treatment in all such cases. Dr. Davis has also had similar experience with cases of Retrolental Neovascularization of an origin that he supposes Infectious, also

Hereditary, in addition to those of a Syphilitic origin.
 Until Davis published the results of his observations & experience a year ago,* (May 1891) nothing had been done or was known about the treatment for affections of the fundus, or a fact for any Ocular affections, other than those of Sympathetic Ophthalmia, Irido-choroiditis, irido-cyclitis; whereas now it seems probable that a great advance has been made, & that still further advances will be made, in Ocular Therapeutics generally speaking. At that time (May 1891) Davis stated that much doubt existed as to the efficacy of this treatment; but with another year's experience it seems that much of this doubt has been removed, so great has been the development of this local form of Therapeutics; while time, another few years perhaps, & experience may lay aside all doubt & prove to us that this treatment is a very valuable addition to our Ocular Therapeutics.

There is no doubt now that results have been obtained by the S. c. inj^{ns} of sublimite which have hitherto been unobtainable by any former treatment, & even in cases indicating it, by mercurial injections, temporal frictions or even hypodermically given. The results also are very often so rapidly brought about; and it is noteworthy that such a rapid marked improvement, not only in the vision but also anatomically (speaking both of corneal & fundal lesions) is obtained after the first S. c. injⁿ, as to be almost wonderful, when one takes into consideration the duration of the affection, & the fact that often previous methods of treatment have been carefully carried

* Archives Ophthalmologie (Seraut) No. 5 de 1891. (Davis)
 "Des injections sous-conjonctives de Sublime en Thérapeutique Oculaire."

out & failed.

It cannot for a moment be supposed that S. C. inj^{ns} will cure all cases of Ocular affections such as have been described, but, while some instances of complete recovery have occurred, it really seems that a new field has been opened which is very interesting & encouraging, and which should lead to the production of enormous benefit in the treatment of a great many affections which have hitherto showed great intractability as regards treatment. Great amelioration has been effected, for instance, in disease of the Chroid, retina &c. in all cases where the lesion has not been sufficiently far advanced so that the structural elements of the tissues have been destroyed, in cases formerly considered incurable, though of course if advanced to this degree, one cannot hope to effect a cure.

An interesting fact that has been observed, is that when a sub-conjunctival injection has been made in S. C. the R. E. (both eyes being affected, as in a choroiditis or Retinitis) there has been produced, in addition to amelioration in that eye, an amelioration in the other (left) eye. This has led Davis to conclude, after 2 years experience in such cases, that the sub-limbal punctures into the cranial cavity, and also to the other eye probably by the medium of the Optic Chiasma. This of course remains to be proved in what way.

One may now perhaps summarise a few facts which have been gathered from the observations which have personally been made as regards this subject of Ocular Therapeutics &c.

In all inflammatory, infectious, processes the S. c. inj^o give very encouraging results, and in many cases where the classic treatment has failed, they have produced very satisfactory results.

In Atrophy of the Optic Nerve of infectious origin e.g. after Influenza etc, Central Amblyopias (Slight forms of Retrobulbar Neuritis, James & De Becker,) great benefit has been derived from the S. c. inj^o (James has obtained excellent results in instances, about 7 in number, of the latter, Amblyopias)

The toxic amblyopias such as by Tobacco & Alcohol are not included here, as it has been found that S. c. inj^o of sublimite have not cured them, whilst they recover fairly rapidly by the removal of the cause, smoking etc., & hypodermic injections of Pilocarpine.

Not a single case has been observed where S. c. inj^o of sublimite have caused any aggravation of an existing affection, or the production of any other, while they have in almost every instance brought about some amelioration more or less, if only the arrest of the process.

In cases where Mercury & Iodide of Potassium seemed indicated & have been taken internally for considerable lengths of time but without avail as regards the Ocular affection, S. c. inj^o have produced rapid amelioration; and with regard to Syphilis, & local therapeutics for local manifestations of it, it seems certain that the General (Constitutional) treatment is the great thing, first in importance, but that when it is combined with the local treatment, it acts with a much greater rapidity & intensity.

In the above mentioned Central Amblyopia, Neuritis of the Optic trunk (Retinobulbar Neuritis), case where there takes place an Atrophy of the nerves proceeding to the macula from the fibres of the Optic trunk which is pathologically altered, the good results have been obtained by S. C. J. inj^{no} of sublimite, where treatment by pilocarpine, atropine, & electricity have failed, though tried during 2, 3 & even 4 months.

Good results have followed the treatment by S. C. J. inj^{no} in a case of Syphilitic Atrophy of the Optic nerves, & in an Atrophy secondary to a specific Chorio-retinitis, although classic treatment had been practised for many months without benefit & moreover in each case with gradual retrogression.

It has been observed that there is no appreciable effect from Hypodermis injections of sublimite until at least 10 have been given & very often more than 10, while S. C. J. inj^{no} seem in the majority of cases to act immediately.

With regard to contra-indications to S. C. J. inj^{no}, in a word it may be said that up to the present no absolute contra-indication has been observed, this of course may be from want of time and experience. There are however some modifications which one should mention, for example, in very acute cases where the lymphatic circulation between the anterior & posterior segments of the ocular globe becomes blocked, by inflammatory products within the channels, or causing pressure from without by the congestion of the surrounding tissues.

it has been found that the first s. c. injⁿ sometimes has a bad effect causing tumefaction & injection of the neighbouring parts, so that it is advisable to wait a few days before giving a second, in the meantime by means of ordinary treatment, anti-phlogistic, & atropine &c. endeavouring to reduce as much as possible the inflammatory process, and then after 5 days the 2nd s. c. injⁿ may be made, when it will be noticed that there is a less bad effect; wait again 3 or 4 days & it is then found probably that the 3rd s. c. injⁿ begins to have a good effect, which is kept up & increased, the injection then being well supported, & able to be carried out every second day. Such cases as instances the above are

- (i) Certain forms of Acute Iritis where there is much infiltration into the surrounding tissues, (other forms of Iritis supporting well & deriving great benefit from, the injections -
- (ii) Where the Choroid is affected in its deeper parts even a severe Irido-choroiditis this is sometimes the case.
- (iii) The condition of the Conjunctiva must sometimes be taken into consideration, though no rule can as yet be laid down, as when there has been an acute conjunctivitis, accompanying a deeper affection, with much vascular injection, the s. c. injⁿ have been borne well, whereas on the other hand, the conjunctiva being perhaps normal or at any rate not acutely inflamed, the s. c. injⁿ have caused considerable vascular injection with much discomfort to the patient. This however appears to be

due to individualism or severity of external con-
ditions such as very cold weather; against this
last it has been found useful to protect the eye
by a bandage after the s.c. inj.

The question will naturally arise, from the fact
that sublimate injected under the conjunctiva has
produced good effects, as to whether one could not,
in cases which would seem to indicate them, use
other therapeutical agents, for instance, Iodide of
Potassium, Salicylate of Soda, Strychnine &c.
in a similar way, but this is yet to be determined
as the attempts made by Davis with these sub-
stances & also with Trichloride of Iodine & ~~S~~
Cyanide of Gold have not in any case given results
which would warrant the substitution of sublimate
by any of these others.

Affections of the Cornea, Iris &c.

In certain of these affections very good results have been obtained by Sub-conjunctival injections of Sublimite of the same strength & quantity as in the case of affections of the Choroid Retina &c. (viz. One twentieth of a ^{cubic} centimetre of a solution 1 to 1000. i.e. 1/20 milligramme of Sublimite per injection.) Good results have also been obtained when they have been combined with Hypodermic injections &c.

Amongst other forms which have derived great benefit from these injections are cases of

- Diffuse Infiltrations of the Cornea
- Interstitial Keratitis.

Paraschymatous Keratitis.

Keratitis punctata (occurring with serous Iritis)

Corneal Ulcerations of various kinds.

Affections of the Iris & Cornea with Hypopyon.

Forms of Iritis especially of an Inflammatory nature, and Syphilitic Iritis.

With regard to the exhibition of Atropine in cases of Corneal Ulceration & other forms of Keratitis, no general rule can be laid down, as to whether or not it should be combined with the S. c. inj^{ns}. Many cases where the Corneal affection has been simple i.e. not complicated with any affection of the Iris &c. have been benefited & even cured without extension to other parts, the Iris retaining its power of contracting & expanding, & there being no Synochiae, by S. c. inj^{ns} without Atropine being given, but in all cases where the Iris has become involved or there is a risk or danger

of it, then Atropine is always used, while the S. ej. inj^{ns} are made, to prevent adhesions of the Iris.

In all cases of Iritis it is used. The S. ej. inj^{ns} seem to check at once the extension of the inflammation from the Cornea to any other part, and though Atropine had in many cases been given in case the iris should become involved, it was in no case, so far, necessary, as after S. ej. inj^{ns} the iris has never become affected.

If when we first see the patient, the iris is affected, either as an Iritis, whether simple, or a complication of a Keratitis, or of Irido-Choroiditis &c. the S. ej. inj^{ns} reduce the inflammatory condition & restore the iris to its normal condition much more rapidly & effectually than any other form of treatment that we know of.

In those cases where conjunctival inflammation & its accompanying signs & symptoms are also present, the usual anti-phlogistic treatment such as hot fomentations of Boracic Acid &c. are ordered in addition.

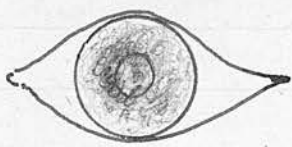
Parachymatous Keratitis -

M^{lle} R... aged 17 1/2 years.

The patient came on December 2nd 1891 with the above affection of the I.E. Almost the entire Cornea was involved & her vision in this eye was

I.E. V = 1/7.50 (at metre) Could not read No. 9 at any distance.

No antecedents of Rheumatism, & those of Syphilis denied by the parents. Has always had good health, looks well, and nothing to be noted as regards the Kelt. The eye affection began in July 1891 by a simple oval infiltration of the Cornea which rapidly increased & greatly impaired the vision. The R.E. has never become affected.



Dec. 2nd 1891.

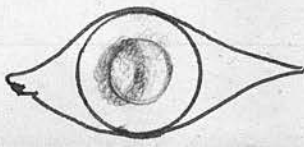
The patient was treated for 3 weeks by Hypodermic injections of Sublimat, (Atropine for the dilatation of the pupil) but as the case did not improve, Subconjunctival inj^{ns} were also given and improvement began almost at once. In a month's time

I.E. V = 2/3 at 2 metres, reads No. 6 at 25 cm.

Jan. 22nd 1892.

The immediate effect of the S.Cj. inj^{ns} was a clearing up of the corneal infiltration from the periphery inwards, with a concentration, condensation, as it were, towards the inner & center part of the cornea, and it was interesting to note that in the center of the diffused patch, the cornea rapidly became clearer, giving instead of a large diffuse Keratitis, a smaller circumscribed denser one with an almost clear centre

thus



while her vision was, a few days later on

I.E. V = 1 at 2 meters, read No. 7 at 25 cm.

On account of the Aphakia, her vision was then taken through Stenopaeic frames (Diaphragm) in order to cut off the peripheral rays, and for the first time since coming she distinguished the types at the distance of 5 meters as follows

I.E. V = 1/3, at 5 meters, read No. 7 at 25 cm. Feb. 5th

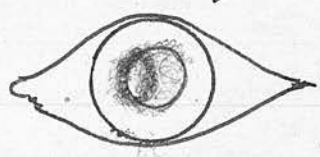
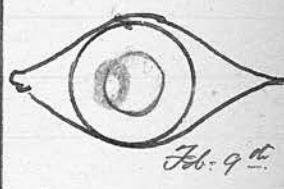
The improvement continued and after 8 subconjunctival & 20 hypodermic injections is all -

I.E. V = 2/3 (5 meters) read No. 2 at 25 cm. Feb. 9th

The S. c. inj^s were then ceased for 15 days, it being thought ~~necessary~~ that the hypodermic alone were now necessary, but at the end of this time she had retrogressed

I.E. V = 1/3; read No. 6. Feb. 24th - 9th

while it was noticed that there was some increased infiltration, a very slight shading extending from & around the old dense part, which was now whiter & thicker than before



Feb. 24th -

The S. c. inj^s were then recommenced & soon brought about amelioration as in two days

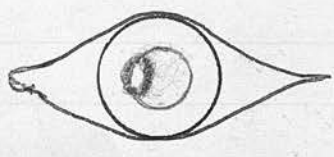
I.E. V = 1/2 read No. 6. Feb. 26th

& a little later

I.E. V = 1/2 read No. 5. March 2nd

the cornea again clearing rapidly -

I.E. V = 1/2 read No. 3 (some words) March 7th



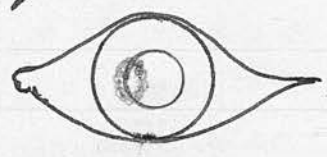
The case remaining nearly stationary for about a fortnight as to Vision, it was decided while continuing the hypodermic injections, to substitute the Massage with Lanoline Hydragryque (an ointment composed of Equal parts of Metallic Mercury & Lanoline) for the S. Cj. inj^{ns}; the result was very satisfactory - after 3 days -

I.E. V = 1 (2 letters of) read No. 3 (some words)

& later

I.E. V = 1, read No. 2. at 25m. March 25th '92.

after 6 applications of Lanoline Hydragryque, by massage, ^{to} the Cornea -



March 25th '92.

The cornea was leucomatous as in the diagram, the rest of it being perfectly clear & transparent, while the Vision was very good, and the patient & her parents were very well pleased with the result. The case has gone on improving since.

There is here an illustration of the benefit derived from S. Cj. inj^{ns} of sublimate in such cases as the above, proved perhaps by the fact that when discontinued for a time, though hypodermic inj^{ns} were still made, a retrogression took place which was speedily amended when the S. Cj. inj^{ns} were resumed; and that they cause the arrest of the process of, & the resolution & absorption of the products of, the infiltration, leaving the leucoma more rapidly than any previously known to us method of treatment; the leucoma also being much less in extent than was formerly the case.

Interstitial Keratitis -

M. A. L. m 42 years of age -

Six months before he came to us on Jan. 25th 1891, the patient noticed a prickling sensation in the I.E., which being slight did not trouble him much, but some months afterwards, in December, the sight of this eye began to fail, while the eye itself assumed a red inflamed appearance, & when we saw him, examination showed it to be a case, very severe, of Interstitial Keratitis. There was some purulent infiltration of the lower part of the cornea which corresponded to the pupil; marked vascularization coming from the periphery in almost all directions towards the center & the collection of pus, which seemed as though it would burst in a few days, like an abscess. The iris (the pupil being indilatable by Atropine) seemed to be adherent to the capsule of the lens.



Jan. 25th - 1892.

The vision was very defective

I.E. V = BN at 10 centimetres, i.e. = $\frac{1}{500}$, about. *could not read No. 9.*

There was no history of Rheumatism or Gout, and the patient denied Syphilis acquired or hereditary. Sub-conjunctival injections were given, and after the first one, in 3 days

V = $\frac{BN}{ER}$ at 25 cm. = $\frac{1}{200}$, *could not read No. 9.*
Jan. 28th '92.

after the 2nd s. c. inj.

V = $\frac{1}{100}$; *could not yet read No. 9.*

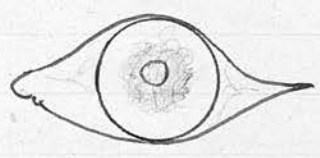


Feb. 1st 1892.

There was very much less vascularization, the purulent collection had become very much smaller, nearly all absorbed, while the cornea was becoming much clearer.

At this time it was decided to combine the hypodermic injections with the S. c. j. inj^{ns}, and on Feb. 25th after 9 S. c. j. + 9 hypodermic the result was as follows

V = 1/4 at 1 meter, i.e. 1/20; read No. 4 at 25 cm.



} Feb. 25th '92.

There was no vascularization now, the pus had quite disappeared, and there was only a general corneal haze, not extending to the periphery.

Not seeing the patient again, there was no opportunity of proceeding further with his case. He was up to this time very satisfied with the progress he had made, and it is to be supposed that he considered it not necessary to have further treatment.

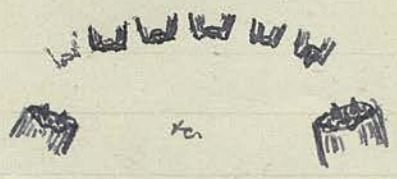
From experience of these cases, & of the rapidity & intensity of the action of S. c. j. inj^{ns} of sublimate on corneal affections especially when acute or active, it is safe to assume that the hypodermic injections here did not play an important part, & that the amelioration was solely due to the S. c. j. inj^{ns}.

It has always been remarked that hypodermic injections of sublimate take a long time, and many must be given, before their action in eye affections becomes appreciable, whereas so very often the ameliorating action is observed & actual after

a very few s. of inf^{ns} sometimes two & even one,
in a very short time, two or three days in many
instances.

Acute Parenchymatous Keratitis -

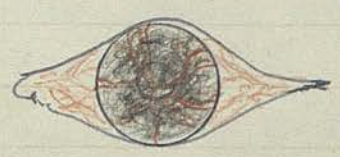
Mrs L. M. 15 1/2 years of age. had had this
affection of the I.E. since early in November 1891
but did not come to me till the 29th Jan. 1892
3 months later - There was much vascularisation
of the Cornea. Iris & Ciliary body were unaffected
& the pupil dilated well under the action of Cocaine.
She was not Pleumatic, but the case was undoubt-
edly specific in nature, inherited Syphilis, as
the teeth presented the typical features as described
by Hutchinson.



The incisors showed the usual peculiarities in shape,
& absence of enamel, the dentine being exposed &c.
while the first large molars showed similar
appearances the, dentine jutting out in small peaks,
quite prominent, without enamel.

The Vision was very defective

I.E. V = not even the distinction of objects, could not
count fingers, but could tell that something
passed between her eye & the light when the
hand was passed before the eye.



Jan. 29th 1892.

The treatment consisted of sub-conjunctival injections

when after the first two at the end of a fortnight, the vascularization had disappeared, and the vision was

I.E. V = 1/40 cannot read No. 9 at any distance. 12th Feb. '92.

a very rapid & marked result, anatomically & as to vision.

She had 3 more s. cj. inj^{ns} in the next fortnight when

I.E. V = 1/15 reads No. 8 at 20 cm. Feb. 27th '92 and after 7 s. cj. inj^{ns} in all, a still further great improvement

I.E. V = 1/10 reads No. 7 (some words) at 20 cm. with appearance as in diagram

} 3rd March 1892.

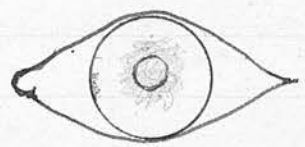


No vascularization - Cornea very much cleared & transparent from the periphery inwards. Condensation of the infiltration into small areas, with slight central haze of cornea.

Later after 9 s. cj. inj^{ns}

I.E. V = 1/7.50 reads No. 6 at 20 cm. March 7th '92 and a fortnight later

I.E. V = 1/7.50 reads No. 5 at 20 cm. March 21st '92.



March 21st '92.

The small condensed patches having evidently become resolved & absorbed, leaving only a slight haze.

At this time (March 21st '92) it became apparent that the R.E. was becoming similarly affected; its vision being R.E. V = 1/4; reads No. 2 at 20 cm.

There was no vascularisation, and no symptoms to the patient of it other than that its vision was getting dimmed & not so good as before.

The S.C. inj^s were then alternated, one day in the R.E. next time in the L.E. & so on, with the result 10 days later

I.E. V = $\frac{1}{7.50}$ reads No. 4. at 20 cm.	} April 1 st 92
R.E. V = $\frac{1}{2}$ reads No. 1 at 20 cm.	

and in the more recent eye :-

From this the case has continued to go on favourably, the corneal haze in the L.E. being very slight, & that of the R.E. (the more recently affected) the slight infiltration is only appreciable by the oblique illumination (through a powerful convex glass) in the dark room.

In this case no hypodermic injections were made and although very great amelioration was produced by S.C. inj^s only, it seems not improbable that had the former been given also, the affection might not have attacked the other eye (though this is the rule); but it is pure conjecture. The case being undoubtedly specific would, it seems to me, indicate the advisability of giving general treatment in addition to local.

Ulceration of the Cornea -

M. V. M. aged 26 years -

This was an extraordinary instance of the rapid effect of sub-conjunctival injections. He came on the 25th Feb. 92 with a small ulceration of the cornea

not knowing from what cause it could have originated. He had had for several days much pain in the eye & excessive lachrymation, with great photophobia, & the conjunctiva was considerably inflamed & injected. The ulcer was in the central part of the cornea & there was some slight infiltration of the cornea surrounding it.

One s.cj. inj. was made, and he returned 3 days afterwards saying he was quite cured. The epithelium had completely grown over the ulcerated portion in 3 days, whereas for several days previous to his coming to us, the ulcer was getting larger & the eye generally in a worse condition. There was now no pain, & the inflammatory condition of the conjunctiva with its signs & symptoms had almost quite disappeared.

He was given one more s.cj. inj. & told that if all went well he need not return. We have not seen him since. (2 months)

It may be mentioned here that in all cases of ulceration of the cornea a solution of Fluorescein made up as follows

- Fluorescein 20 centigrammes
- Sodii Bicarbonatis 30 centigrammes
- Distilled water 10 grammes

was used

in taking the observations of the case. It has a marked affinity for the ulcerated portions of the cornea, staining the floor & margins of the ulcer green, & also wherever there is eroded epithelium,

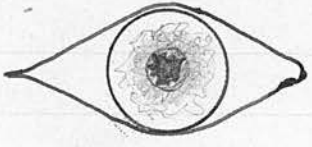
and while it does not stain the smooth sound epithelium, it enables us by the extent of the staining to gauge very accurately the extent of the ulceration and to observe from time to time any alterations in size or shape or direction. If we are doubtful as to whether there is any ulceration or erosion of epithelium, from its being small & extent &c. the diagnosis is immediately settled by its aid. A drop of the Fluorescine, which is itself antiseptic, is simply placed on the Cornea by means of the lateral portion of the end of an ordinary probe which has been dipped into the Fluorescine, & the upper lid is then gently drawn down over the cornea with the thumb & up again, when if the epithelium is wanting in any place or places it is immediately apparent.

Great aid has been rendered by the Fluorescine in taking these observations while watching the progress of cases of Corneal ulceration treated by Sub-conjunctival Injections of Sublimale.

Ulcer of the Cornea -

M. C. P. 40 years of age - has had the trouble with his R.E. since January 1st 1892. It came on with the Influenza, and therefore would come under the head of "Infections" that is (i.e. Paris) due to the invasion of microbes, bacteria. For 6 weeks he was treated by an Oculist in Paris, but says that he derived no benefit from it, & that the eye remained always in the same bad condition. On coming home, the Ulcer was diagnosed to be of

an Arthritic nature, though he said ^{he} was not Rheumatic; also denied any history of Syphilis or Cont. He was given Salicylate of Soda 2 grammes (32 grains) per day & Sulphate of Quinine 8 grains per day. This he continued taking for a fortnight, and while it relieved the pains in the eye & the frontal & temporal neuralgia, it did not improve the ulcer, which steadily grew larger. This led to treatment by Sub-conjunctival injections of sublimate, but before they were begun, the ulcer had been lightly touched with the Galvano-Cautery to destroy the micro-organisms which might be present.



Feb: 29th '92.

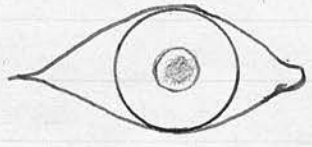
This was the appearance after a fortnight's treatment by Salicylate of Soda &c. the margin of the ulcer as shown in the diagram being well brought out by this remedy. His vision was very weak, only being able to see the types at 1 metre distance - As the patient did not know how to read, he was not examined for the reading types.

After 5 s.cj. inj^{ns}, in 10 days his vision had wonderfully improved, from his not having been able to see the types at all at 5 metres.

R.F. v = 1/4 (5 metres)

March 10th 1892.

with the following appearance of the cornea



March 10th 1892

there not being any ulceration now, (tested by

Quercine) but a faint nebula in the centre of the cornea, while all the surrounding haze of infiltration had disappeared, and the eye at the first glance presented an almost normal appearance.

The patient then thinking he was cured did not come back for nearly a fortnight, when it was noticed that there was a small new ulceration in the centre of where the old one had been. Sub. conj. inj^{ns} were resumed & he has gone on very well since, there being no second relapse.

Ulceration with Infiltration of the Cornea -

M. A. L. Aged 63 years.

This was a very acute & severe case. In a fortnight a large ulceration of the cornea had taken place while nearly the whole extent of the cornea was infiltrated with a rather dense haze. He had suffered frequently from Rheumatism in the wrists knees & ankles. The appearance was somewhat as in the diagram:



March 11th 1892.

The darker parts representing the area ulcerated.

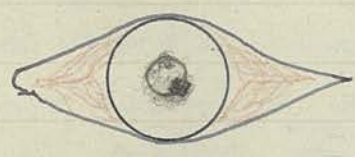
I.E. V = he only saw the shadow of the hand passing before his eye, near. Could not distinguish the type or read No. 9.

The conjunctiva was much injected, & there was considerable photophobia & epiphora.

In addition to S. conj^{ns} he was given Salicylate of Soda 2 grammes per day (32 grains) & 8 grains of Sulphate of Quinine per day.

After 2 s. c. inj^{ns} in 5 days, a great amelioration had taken place

I.E. $V = \frac{1}{15}$ (i.e. $\frac{1}{3}$ at 1 metre), reads No. 9 at 25 cm.
March 16th '92



There was now only one smaller area of ulceration, the epithelium having completely grown over all the rest of the ulcerated portion (shown by fluorescein). The cornea had cleared to a marked extent & degree, while the conjunctiva was very much less injected.

Later, after 4 s. c. inj^{ns} there was still further improvement

I.E. $V = \frac{1}{10}$ (i.e. $\frac{1}{2}$ at 1 metre) reads No. 8 at 25 cm.
March 22nd '92

and again in 3 days (5 s. c. inj^{ns} in all)

I.E. $V = \frac{1}{7.50}$ (i.e. $\frac{2}{3}$ at 1 metre) reads No. 5 at 25 cm.
March 25th '92



No longer any ulceration, nebula as in diagram slight, cornea still clearing, & conjunctiva nearly normal.

Unfortunately this patient stayed away then too long, & when he came back 10 days afterwards there was a small ulceration of the cornea corresponding to the upper part of the pupil which however soon improved when the s. c. inj^{ns} were again given. He is still being treated for it (April 13th)

Dendritic Ulceration of the Cornea -

M. E. F. Aged 32 years.

In December 1891 had a marginal ulcer of the Cornea which was treated by sub-conjunctival injections of sublimate, and after 2 or 3 such injections he thought himself cured, so did not come back, returning to the country as he did not live in Paris. In a few weeks however he had a relapse & came again, when a few more s.c. inj^{ns} were made & the again went away so he thought quite cured. On Feb. 15th '92 he once more paid us a visit when it was found that in addition to the marginal ulcer, some vascularisation had taken place from it inward toward the centre of the cornea leaving a dendritic ulceration, resembling somewhat that in the accompanying diagram.



Feb. 15th - 1892.

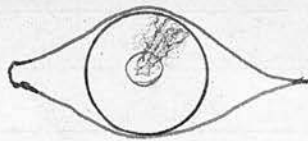
The patient has suffered a good deal from Rheumatism. His vision at this time in this eye was very defective:

I.E. V = Could not count fingers at 1 metre, could only see the shadow of something (e.g. the hand) passing in front of the eye.

Could not see to read the reading types.

For treatment, when commencing the s.c. inj^{ns}, it was decided to first touch lightly the ulceration with the Galvano-Cautery -

The ulceration had almost entirely disappeared after the 2nd s.c. inj^{ns} in 12 days, while the corneal haze of infiltration had so cleared up as only to surround for a very little distance the dendritic ulcerated portion.



Feb. 27th 1892

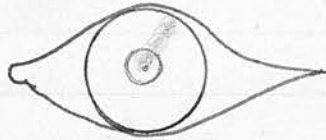
There were still some lines, as it were, of the dendritic infib. that ulceration, but the reddish vascularized appearance was not now visible.

And a week later, after a few more s. c. inj^{ns} the vision was found to have become remarkably improved.

I.E. V = 1/8 (at 5 metres) reads No. 3 at 25 cm.

March 5th '92

While on the 11th March there was no longer any ulceration, but a slight leucoma corresponding to where the ulceration had been. The vision was still further improved.



March 11th '92

The case went on very well from this, and he has not been coming for further treatment.

We have here, as in the last 2 cases also, illustrations of the value of s. c. inj^{ns} in these affections, and it seems proved so by the fact that when each of the three patients remained away from the treatment for a couple of weeks, less or more, 10 days or more, he has met with a return of the affection, or a worse form of it, which has however been quickly modified on the resumption of the s. c. inj^{ns}.

The last case was one where the s. c. inj^{ns} (as in several others, quite 5 or 6) caused an

injection, with a good deal of discomfort to the patient, of the Conjunctiva, on account, it appears most probable, of the exposure to the severe cold at the time, the Thermometer having registered 2° below Zero (Centigrade) for several days just then, and it was at the same time that all the other cases occurred similarly. As a safeguard against this, it was found very useful to protect the eye with a simple comfortable bandage when the patient was just going into the open air after a s. c. inj. & for him to keep it on till indoors again. It was only during these periods of intense cold that we noticed the above condition of the conjunctiva come on.

Ulcer of Cornea with Hypopyon - &c.

M^{rs} A. aged 60 years.

This patient came to us on the 29th February 1892 with a severe form of Ulcerative Keratitis, the Iris & Anterior Chamber being also implicated. There was a large area of Ulceration of the Cornea, the Conjunctiva was very much injected & inflamed, while the Iris was turgid & congested; and in the lower portion of the Anterior Chamber was a considerable Hypopyon, with a coagulum of the aqueous humour on the posterior surface of the Cornea, extending from the hypopyon up to the pupil which was almost obliterated from the view by this large dull, whitish coagulum, which also appeared to be in contact with the lens. The cornea was entirely hazy, & much infiltrated round about the ulceration portion.

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There was great pain in the eye, and much
photophobia + epiphora. The condition had,
the patient stated come on in 3 days.



29th Feb. 1892

The Anterior Chamber was at once opened into by
the Saboury Cantery, but the patient returned 3
days afterwards, the Hypopyon being still present
& just as large, the Coagulum similar, & fact
the case as had before. Sub-conjunctival inj^{ns}
were then commenced & almost immediately amelioration
took place - After the 1st S. c. inj^{ns}, on the 2nd day
the hypopyon had much diminished, the fibrinous
coagulum was very much smaller, but more
condensed, while the cornea showed signs of clearing.
There was no longer any congestion appreciable of
the iris which had almost assumed its normal ap-
pearance, though this appeared so probably because it
was difficult to see it clearly on account of the
hazy of the cornea. Conjunctiva still much injected
& its attendant symptoms still present. The patient
said she felt it was much better however. 5th March
On the 8th March after two more S. c. inj^{ns} the
Hypopyon had entirely disappeared - Iris appeared
quite normal. Cornea quite transparent & clear in
2/3 of its extent while there was no longer any pain in
the eye or region of the orbit, as there had been before.
The coagulum had still further diminished in size,
also in density.



8th March '92.

The corneal ulceration was smaller in area now,

and the conjunctiva much less injected, while the phalophobia & epiphora had greatly diminished. The s. c. inj^s were continued & the case progressed very satisfactorily till on March 21st she began to distinguish objects, to tell one thing from another whereas previously she had only had perception of light & shadow. The nucleus of coagulum was still smaller & the haze of infiltration less in extent. Conjunctiva still a little injected.

A fortnight ^{weeks} later, the ulcerated portion was quite covered by new epithelium, the coagulum entirely disappeared, and there only remained then a leucoma in the site of the former ulcer. She considered herself cured and has gone on well since without treatment, no relapse so far (26 days).

Infectious Kerato-Iritis -

M. J. B. Aged 35 years.

In 1872 (twenty years ago) the patient was operated on for cataract, an Iridectomy having been performed on the nasal side a little downwards & inwards, with a corresponding incision (corneal).

On the 6th Feb. '92 he came to us (the affection of which he complained being then of 9 days standing) with the R.E. in the following condition:

The old corneal incision had become apparent, its cicatricial tissue having become swollen & congested, it being now evidently an infiltrating cicatrix, through which infectious products (micro-organisms &c) had found a passage (filtered through retro-pupil) into the anterior chamber, thus setting up a severe process of iritis

inflammation in which the Aqueous Humour, Iris & had become involved, with the formation of a considerable hypopyon and a clot of haemorrhage. An acute haemorrhagic Iritis had followed, the iris being turgid, greyish in colour with red small haemorrhagic spots on its surface.

Feb: 6th 1892



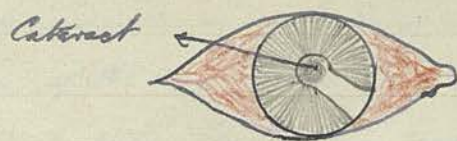
There was an extensive fibrous coagulation of the Aqueous Humour, which was in the form of a dirty whitish-grey deposit on the posterior surface of the cornea, almost entirely obliterating from the view the pupil and the small secondary cataract which was afterwards well seen. The cornea was entirely hazy. The hypopyon & haemorrhagic clot were as in the diagram, the latter being just near & below the infiltrating cicatrix. The conjunctiva was very much inflamed & injected, while there was great pain & burning sensation, with excessive photophobia & epiphora.

Sub-conjunctival injections of sublimate were made & the eye dressed & occluded by a bandage. After 2 s. of inj^{ns}, the fibrous coagulum was reduced to one-half its former size, the cornea was very much clearer, the iris was still somewhat turgid, of a greenish colour, while the small red haemorrhagic spots were no longer to be seen. The hypopyon & clot of haemorrhage had become entirely absorbed. The conjunctiva was still very much injected, with the usual attendant symptoms.

Feb: 14th '92



After a third s.c. inj. there was still further im-
 provement, the fibrous coagulum was all cleared
 up, and the cornea almost entirely clear trans-
 parent. The iris was assuming its normal aspect
 being much less greenish. Conjunctivitis still marked.
 On the 23rd Feb. about a fortnight from the
 beginning of the treatment, and when 6 s.c. inj.
 had been given, the Cornea, iris & anterior
 chamber had become quite normal, the corneal
 wound (from the old incision) was not now apparent,
 while the only abnormal condition left in the eye
 from this affection was the Conjunctivitis which
 was still somewhat severe.



Feb. 23rd 1892.

From this date till the 3rd March the patient kept quiet
 resting, had no more s.c. inj., but wore the bandage
 continuously after bathing the eye several with hot Boracic
 Acid solution, & the case went on so well, the photophobia
 & epiphora having ceased, that he on this latter date, left
 the bandage off & began to resume his work, his occu-
 pation being an out-door one. After 3 days, he returned
 home (March 6th) with a severe relapse, all the former
 inflammatory conditions having set in again with great
 severity, haemorrhagic iritis &c. Conjunctivitis very
 marked. After a fortnight's treatment, by Salicylate
 of Soda (32 grains per day), & Mercurial frictions to
 the temple daily, which produced no improvement, the
 s.c. inj. were again made, and after 3 more inj.
 there was a great amelioration in the condition. They were
 continued, and a week later the different structures

affected began to assume an almost normal aspect while at the end of another fortnight, the patient was quite cured, not wearing a bandage & being none the worse for it, while the Conjunctivitis had disappeared & the eye presented a similar appearance to what it did before the attack came on for which he came to us on Feb 6th '92.

The above kind of affection is known in France as "Plaque à filtration", wound by which infection filters through, as for example the deleterious infectious (micro-organismal) products of a Conjunctivitis &c. into the Anterior Chamber of the eye.

The occurrence is not rare in France. The inflammation of the conjunctiva extends to the old corneal wound & infiltrates the cicatricial tissue of it causing congestion &c. & thus allows of the filtering, penetration of deleterious matters through it. Only one opportunity was offered me, the case just quoted, of observing the effects of its treatment by sub-conjunctival injections, but Darier of Paris has published * two cases similar to the above with equally good results from this method of treatment.

* Darier, Paris, *Archives d'Ophthalmologie (Extrait)* No. 5 de "Injections sous-conjunctivales" 1891.

81

*Infectious Ulceration & Infiltration of the Cornea
with Hypopion -*

M^{rs} J. ... Aged 59 years -

On 9th November 1891 this patient received a Foreign Body on the cornea of the R.E. & on conjunctiva on the 3rd Feb: '92 she had an infectious ulcer of the Cornea very extensive, occupying almost the whole corneal surface with a dense infiltration surrounding it, the entire Cornea being quite non-transparent. There was a considerable hypopion in the lower part of the Anterior chamber. This was an instance of the "Ulcer infectant, ulcère des moissonneurs" (infectious ulcer, ulcer of the harvesters), of Dr Becker*. Her occupation was amongst the reapers in the fields.

There was a very severe conjunctivitis, the accompanying symptoms of which prevented her sleeping at night. Marked photophobia & epiphora etc.



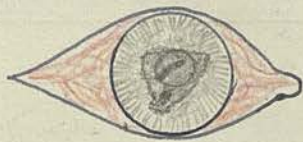
3rd Feb. 1892.

The area of ulceration which was brought out by Fluorescine corresponded to the dark portion in the diagram, parts being deeper than others marked darker in the diagram.

The treatment was as follows: Paracentesis with a triangular-bladed lance towards the lower margin of the Cornea (by this about half the pus went out); Ulcerated portion of cornea touched lightly over its surface with the Galvano-Cautery. The eye was dressed & bandaged & the patient returned next day to get sub-conj. inj^s. After 3 s.cj. inj^s had been

*Described in the Manuel d'Ophthalmologie, par Dr Becker & Masselon. Paris 1889. pp. 224-225.

made a marked amelioration had taken place. The cornea had greatly cleared from the periphery inwards, the ulcer was much less in extent & had assumed a triangular form. The hypopyon entirely disappeared. No more aching pain of which the patient had complained so much, & she was now sleeping well at night. The pupil was becoming visible. Conjunctiva still injected with considerable, though less than before, photophobia & epiphora.



15th Feb. '92.

Sub-conj. inj.^{ns} were continued every 2 days for another week with further improvement, and the patient considering that the affection would become cured of itself for the rest, stayed away for about 10 days without treatment; she however had the return on account of its getting bad again, when it was found that the affection was again very severe, the ulceration having broken out anew though not nearly so extensive, and a fresh ulceration in another part. (The former ulcer having been quite covered with new epithelium.)



22nd Feb. '92

The two darker areas represent the ulcerations - The cornea was entirely hazy, conjunctiva much injected &c. There was no hypopyon. S. inj.^{ns} were recommenced & very soon brought about amelioration to such an extent that all the acuteness of the second attack had passed off while it was less than a fortnight (March 2nd) the inflammatory condition of the conjunctiva had completely subsided,

the ulceration no longer existed, (treated by Fluorocaine) The cornea was still hazy owing to infection corresponding to the sites of the ulcerations. She had no pain, photophobia or epiphora now. - March. 2nd '92.

It was at this time decided, for the Leucoma, to try the Massage with Rosoline Hydragogue; the result has been very satisfactory, the patient having progressed very favourably & the Leucoma much diminished in extent & density.

The last few cases have provided us with instances of the great benefit derived from S. C. inj.™ in various kinds of Corneal Ulcers. Their special value seems to be in cases which are infectious i.e. due to the invasion of micro-organisms, known, or as yet undescribed; in Rheumatic cases also the results have been very rapid & effectual. In all cases it is remarkable, most satisfactorily so, how much less Leucomatous the Cornea remains under this treatment, both in extent & density, than under any former methods, firstly, this stage is reached so rapidly by the S. C. inj.™ as compared with what was formerly the case under other treatments, and secondly, the term "nebula" would very much better express the condition of the haziness of the Cornea than Leucoma; this is probably due to the absorptive, as well as osmotic, properties of the sublimite which when injected under the Conjunctiva gets right to the seat of the affection by the lymphatic circulation, as demonstrated by Pflüger of Bonn with colouring matters.

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It will thus be seen that subconjunctival injections of sublimate have acted with great rapidity and intensity on certain infectious processes of the cornea, iris, & uveal tract, as well as of the choroid, retina & optic nerve; with regard to the last named Davies has become convinced that there are a good number of monolateral or bilateral Neurites of infectious origin, primary or secondary, due to micro-organisms hitherto undiscovered or undescribed, and as in those Neurites following Rheumatism, Scarlet Fever, Typhoid Fever, Influenza &c., they have been so greatly benefited by S. c. inj^{ns} that the idea of the sublimate penetrating by the lymphatic channels to the Optic Nerve seems proved.

In almost all forms of corneal infiltrations which have for the greater part as their origin, an erosion of the epithelium, & which as a result of the uncalculated infectious agent, can assume the form of a diffuse corneal infiltration, dendritic Keratitis, Ulcer with Hypopyon, Parenchymatous Keratitis &c. the S. c. inj^{ns} have given excellent results.

Davies has quoted in the same Journal (Archives) several cases of very rapid cure by S. c. inj^{ns} of forms of Iritis of Syphilitic, Rheumatic, & perhaps of infectious origin not yet known.

Also of Gumma of the Iris & certain nodosities which clinically might have been regarded as tubercular, & very good & lasting results.

Also where they have effected Sympathetic Ophthalmia.

Also many cases where the condition of Keratitis

Punctata has been present in various forms of Iritis &c. this condition has rapidly disappeared under the influence of S. C. inj^{ns}

One instance however came under my observation in an Irido-choroiditis of 2 years standing. The disease had been very severe & had become chronic while the Keratic Punctata had been present for 2 months at the end of the 2 years, and though the S. C. inj^{ns} evidently prevented Sympathetic Ophthalmia from setting in, and caused a very great diminution in the Keratic Punctata, they did not entirely cause its disappearance after 15 (S. C.) injections ranging over a period of nearly 2 months.

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The Employment of Massage with "Lanoline Hydroxygrique" in the treatment of some Ocular Affections.

Before proceeding to describe some observations made in cases of certain corneal affections treated by Lanoline Hydroxygrique, it must be mentioned that it was first brought before the notice of the Medical Profession in Paris in 1889 by Dr. Davies of Paris who published an article on the subject in the "Revue d'ophtalmologie" during that year. Dr. Abadie had in 1887 made a communication to the Congress of Ophthalmology of Paris in which he stated that "Daily massage of the eye with Lanoline Iodoformée (20%) had given him unhopèd for results in a case of Iris-Choroiditis of an undetermined nature, when everything had provisionally failed, Iodide of Potassium, mercurial preparations (as given at that time), pilocarpine &c." and this gave Dr. Davies the idea of trying Lanoline Hydroxygrique in the above (& other) cases. The results may be judged of from some observations which follow hereafter, and from the fact that one sees constantly at the Cliniques of Dr. Abadie & Dr. Davies in Paris & St. Denis a jar of Lanoline Hydroxygrique amongst the well-known Cocaine, Atropine, Yellow Oxide of Mercury Ointments, of such frequent daily occurrence is it now.

It is of very simple composition, consisting of Equal parts of Metallic Mercury & Lanoline well mixed together so as to make an Ointment which is conveniently firm, without being too firm to introduce between the eyelids.

The method of its application is as follows :-

One introduces by means of an ordinary probe, (or camel's hair pencil, if, on account of heat, such as hot weather, or the temperature of the room being high, the preparation has become somewhat melted) a piece of the size of a pea between the eyelids, preferably in the inferior cul-de-sac of the conjunctiva, & this is easily done by telling the patient, when the probe with the ointment has been laid on the conjunctiva, to close the eyes, and then gently withdrawing the probe at the same time pressing the lids with finger & thumb of the other hand against the probe, when it will be found that the piece of the ointment has remained in the eye while the probe comes out clean. The eyelids are kept closed then, & by means of the thumb on the upper lid, one practices a methodical massage for 4 or 5 minutes on the ocular globe. This massage is repeated morning & evening as a rule, sometimes less frequently. It is always well borne, the patient complains rarely even when creosote is not used. It is important to tell the patient, who can do the massage himself, if some one else introduces the ointment & sometimes this even can be done also by the patient, to perform the massage gently, as in one case it was found that a slight erosion of epithelium had resulted, though this was in a case where after an ulceration of the Cornea new epithelium had covered the ulcer, leaving a leucoma.

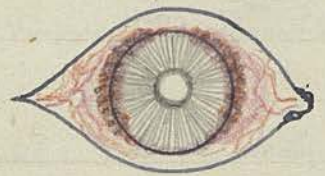
The following few cases have, amongst others, been personally observed, and their records carefully taken from time to time, so that the description of them will perhaps serve to illustrate in some degree the uses of Lencini Hydrogogue with the resulting benefits derived from it.

Observation I.

Case of Cataracte phtalme, Spring Cataract.

F. D. a lad of 12 years of age had been attacked in the month of February each year for the past 2 years with this affection, the instance about to be described being the third attack. The two previous ones had lasted 3 or 4 months with great severity & had resisted all treatment. No good had been done with ordinary treatment, such as the application of compresses, lotions of Boracic Acid or Sublimatè, or the Yellow Oxide of Mercury ointment &c. &c. As spring had passed into summer the affection had just passed off of itself.

The patient came to us on February 9th 1892. There was a marked infiltration with tumefaction of the corneo-sclerotic junction, of a peculiar colour, somewhat reddish purple with here & there greyish spots, while there was a distinct rose-coloured vascular injection (beneath the conjunctiva) extending from this infiltrated cushion, as it were, to a little distance from the cornea.



The patient complained of smarting pain in the eye, considerable lachrymation with a slight abnormal

discharge, and a good deal of photophobia. The constant irritation had caused some swelling of the edges of the eyelids.

Massage with Linnæi Hydragogue was practiced and with great benefit; the result being most satisfactory.

A fortnight afterwards (Feb. 25th) the eyes, for both were similarly attacked, had assumed a normal appearance, the infiltration & tumefaction had completely gone, no traces of it left, while the bulbar conjunctivæ right up to the margin of the cornea were quite clear & not now at all injected. The cornea was quite sound. There was no lachrymation, discharge or photophobia & no longer any pain. The papillæ of the parietal (tarsal) conjunctivæ were however somewhat prominent the next time the patient came, (a week later) but this was soon reduced by washing (the lids being everted) with a small piece of cotton wool soaked in sublimate (1 to 500) after three applications in a week. The patient was cured from this out & has had no return of the affection up to the present (April 14th). His mother could not help expressing her astonishment & delight at the result, calling to mind the attacks of the 2^d previous years with their long duration, all treatment then used being of no avail, whereas in this instance a fortnight about had sufficed to remove the troublesome nature of the affection.

A case similar to the above but under different treatment was observed at the Clinique of another eminent Oculist in Paris. It was in a patient

a young man about 20 years of age. The disease commenced this year about the middle of February and was treated ^{by} with Massage with Calomel (powdered) which brought about a certain improvement in the condition in 3 weeks' time, but also caused some considerable irritation of the eye, so that massage with powdered Boracic Acid was substituted, but without further improvement, and a week after, i.e. a month's treatment in all, the condition was still very marked, the corneo-sclerotic infiltration & swelling were still present, though the bulbar conjunctiva was apparently almost normal. It was stated at the time by this Oculist that these cases of "Catarrho primæniæ" were very difficult to cure.

They seem to be of somewhat frequent occurrence in France during the months of February & March, while the affection is said to disappear of itself as the summer months come on, the duration being usually, under former, usual treatment, about 3 or 4 months.

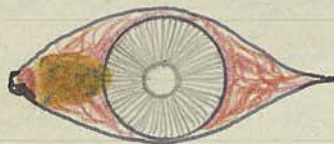
This disease is the same as that described under the name of Frühlings Catarrh by Brockhaus & Saemisch, and seems allied to the Spring Catarrh of Great Britain, though it is not supposed here, in Paris, to be at all connected with "Hay Fever".

Observation II.

Case of Acute Infiltration of Conjunctival & sub-conjunctival tissue, including proliferation of the elastic fibres, resembling to some extent pingueculous infiltration & the commencement of a pterygium.

M. A. D. aged 60 years.

Came to me on the 26th January 1892 with an affection as above described. Its duration so far had been one month. There was a great deal of pain, and considerable epiphora. The conjunctivae were much injected & the eyes generally had a reddened swollen appearance. Both eyes were similarly affected.



The seat of the yellowish-red infiltration with proliferation resembling as above described was between the inner canthus and the cornea, the cornea being reached but its invasion scarcely discernible.

The mass of infiltration, proliferation, was raised, injected, somewhat irregular, and firm, it had grown, & extended, rapidly toward the cornea.

The treatment was as follows: Yellow oxide of mercury ointment was first put into the eye to reduce the acute inflammatory condition of the parts, and when this was to some extent effected, an ointment composed of 6 parts of Calomel in 30 parts of Lanolin was employed with massage, but after a few applications had produced no amelioration in the condition, Massage with Lanolin by *dosage* was substituted, and in a week the case had assumed a most favourable aspect, the mass being much

smaller less injected & less raised, while the inflammatory condition of the conjunctiva was much reduced, there being now less pain &c, and the eyelids considerably less red & swollen. A fortnight later there was no longer any epiphora, all redness & signs of inflammation had entirely disappeared, while there was a still further diminution of the hypertrophied elastic pinguiculous tissue now no longer injected & only yellowish, & very small in amount. After another week there was almost a total disappearance of the condition & the eye presented what one might call quite a normal aspect for a man of 60 years of age. He said he was very much satisfied & felt that he was cured, and not having returned to us since, now 7 weeks, the conclusion is that the cure has so far been permanent.

It may be mentioned here that Massage with Lanthan Hydrogenique has been found excellent in the treatment of Pterygium where

- (i) the case is seen at the commencement, as it not only arrests the progress, but causes marked diminution in the size, with total disappearance if persevered in, of the growth.
- (ii) the pterygium has been removed by operation this having been necessary from its size, extent & duration; here the parts are rapidly restored to normal & all traces of the pterygium quite removed.

This is the experience of Davis of Paris; he also says * he obtained a complete cure of a similar case to the above in a month, of a pterygium of many years standing.

* Societe d'Ophthalmologie } 1889. Paris
de Paris.

Observation III.

Case of "Keratite Sclerosans" (Fr.); probably a Sclerosing Keratitis, resembling as it were an invading Leucomatous affection.

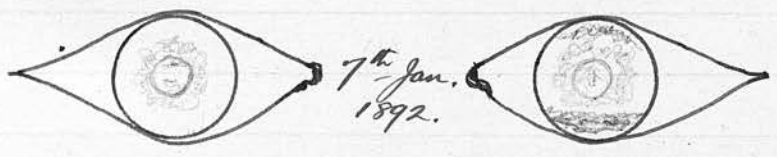
M. V. P. 37 years of age. First came under notice on the 24th December 1891; both eyes were affected and he had a very defective vision, especially in the I.E.



R.E. V = 1/3.

I.E. V = 1/6.

Massage with Lanoline Hydroxygrypis was carried out as treatment, and in a fortnight there was the following satisfactory result



R.E. V = 2/3 (weak).

I.E. V = 1/3.

The treatment was continued right on then until the 3rd March, improvement taking place steadily all this time.



R.E. V = 7/3 (clearly)
read No. 1 at 25 centimeters.

I.E. V = 1/2;
read No. 1 (weak) at 25 cm.

There was a very slight nebula, only visible by the oblique illumination, in that part of the cornea of

Each eye which corresponded to the pupil. By ordinary light (day-light) one could not detect any haze in the cornea of the R.E., but in the I.E. there still remained the leucomatous condition, though very much diminished in area & density, in the extreme upper & lower zones of the cornea. No haze could be seen in this way over the pupil.

The patient was told to continue the massage with the Bandline Hydrargyrique, and as he has not since returned (7 weeks now) it is fair to presume that the improvement advanced still farther, and that he did not consider it necessary to come again.

Observation IV.

Case of Leucoma resulting from Pterygium
Keratitis

Mrs R. 17 1/2 years of age -

This case was first treated by Sub-conjunctival injections (in addition to Hypodermic) of Sublimite, and after the benefit derived from this treatment, a further improvement immediately took place when subjected to Massage with Lanolin Hydroxygryze, as under :-

On 11th March 1892 the condition of the affection was

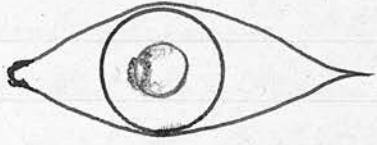


March 11th 1892

I.E. V = 1/2 (clearly), reads No. 3 (some words) at 25 centim.

the case having remained stationary almost, for 2 weeks, under sub-conjunctival injections &c., a Massage with Lanolin Hydroxygryze was begun and in 3 days the Vision had improved to

I.E. V = 2/3 ; reads No 3 (some words) at 25 cm. while about 10 days later there was still further improvement



March 25th 92.

the Leucoma having visibly diminished in extent and opacity, the vision being

I.E. V = 1 ; reads No. 2 at 25 cm.

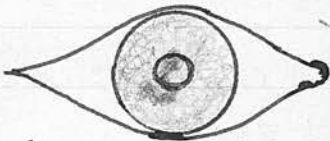
The case has progressed very favourably since.

Observation V.

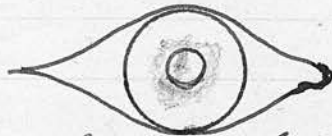
Case of Leucoma (slight) following on Corneal Ulceration.

In ^{me} J... aged 59 years -

After a month's treatment by sub-conjunctival injections (during which a relapse had occurred owing to the patient's not having come for about 10 days) the ulceration had been cured, but left a leucomatous infiltration, which was then treated by massage with Rousin's Hydroxyquin. In this case after a week's treatment there was a very satisfactory result, the cornea being quite clear in the upper third of its extent & all round from the periphery extending inwards for about 2 or 3 millimetres (the whole cornea having been previously hazy from infiltration), while the inflammatory condition of the conjunctiva had completely subsided. She no longer had any pain, laceration or photophobia.



March 2nd '92.



March 8th '92.

Altogether the general appearance of the eye was so greatly improved that the affection was scarcely noticeable unless carefully looked at. The patient had a fairly useful vision now, no discomfort in the eye etc., and having been told to continue the treatment she has evidently gone on improving, as she has not returned since (6 weeks).

Observation VI.

Case of Leucoma following on Interstitial Keratitis -

M. L. P.... aged 24 years, had an attack of Interstitial Keratitis 8 months ago (September 1891) & was treated for it by an eminent Oculist in Paris by hot vapour, phenic acid & naphthol draches to the eye, & Iodide of Potassium internally (this is the patient's statement), for 2 months, but a severe affection supervened, viz. Irido-choroiditis with purulent deposits on the Membrane of Descemet. For this he came to consult Dr. Davies, who gave him sub-conjunctival & hypodermic injections of Sublimat. After 20 of the former & 30 of the latter the purulent deposits had all disappeared, the Vision had been brought from

V = 1/40 (1st Nov. '91) to V = 1/10 (2nd Feb. '92)

there only then remaining a leucoma the result of the old Interstitial Keratitis.

On the latter date 2nd Feb. '92, massage with Lanoline Hydroxygrique was begun, and in two months the Vision was further improved to

V = 1/3 ; read W. H. at 25 centimetres.

while it was necessary to examine the cornea by oblique illumination in order to see the nebula that remained, it being very slight.

This case was undoubtedly a specific one, due to Inherited Syphilis, so there was no history of Rheumatism, but the teeth afforded a typical illustration of the features pointed out by Hutchinson, peg-shaped, absence of enamel, exposure of dentine which in one tooth (an incisor) was quite prominent, and jettied out in two others, a first large molar & a bicusp.

It has been observed that in the majority of cases where the inflammatory process is acute the massage is not well borne, and therefore contra-indicated.

The cases which seem now to indicate this treatment are those affections of the cornea of a diffuse superficial nature as regards infiltration; also cases of Interstitial & Perenchymatous Keratitis after sub-conjunctival injections of sublimate have brought the leucomatous or nebulous condition (according to the extent & severity of the condition at first) to that state in which they only produce a slow amelioration, though this massage, which seems to cause absorption of the pure Mercury to the seat of the corneal infiltration, might be, and indeed has been by Darier, used in such cases from the beginning, without sub-conjunctival injections, which however experience has shown, act with much the greater rapidity & intensity; thus one indication for the treatment by this massage in such cases comes to be when patients refuse to have the s. c. inj., because there is some attendant pain &c. while with the former there is no pain or discomfort & the patient, if intelligent, can practice the massage himself at his home.

One form of affection which is especially suited for this treatment is the "Catarrhe frontaux" Spring catarrh, one case of which is quoted from personal observation; while Darier has reported* two cases very similar; he, persuaded that this affection was of infectious (i.e. micro-organismal)

* Societe d'ophthalmologie de Paris - 1890. p. 35.

origins submitted the 2 cases to local treatment by this method, and both were completely cured in a very few days. After each massage with the Lash's Hydrogogue the peri-corneal cushion (so to speak) became paler, less injected, & less apparent, until very speedily total disappearance took place. With these 2 patients, the ordinary measures of treatment had produced no amelioration. One of them had had the affection for several months & the other for 6 weeks.

Davis has also quoted a case of Dendritic Keratitis in which an excellent result was obtained and very rapidly by this treatment, but it seems to be certain that S. G. Inf. are preferable in such cases, while it is useful, as with that class of patients, mentioned above, refusing S. G. Inf., to have another form of treatment fairly efficacious.

Also further a case of Circumscribed (because only affecting the center of the cornea) Interstitial Keratitis of 2 months standing, without appreciable cause in a man of 40 years of age without any history of syphilis. The patient did not know if he was Rheumatic or not. This case was completely cured, without leaving a trace of the affection, in a month by massage with Lash's Hydrogogue.

It may be mentioned that since Davis made his communication, this treatment has been practiced at the Eye Clinique of the Hospital St-Jacques - Vierge, Paris by Dr. Trousseau, whose researches have confirmed in all points the above propositions & results.

As to how the good effects in such cases as the above are brought about by Massage with Ranzolin Hydragrygne, it seems certain that

- (i) it acts as a mechanical agent by the massage of the cornea, and to this is added
 - (ii) the specific action of the Mercury { antiseptic,
resolving,
absorptive
- which ^{(i) + (ii)} explains easily the efficiency of this method of treatment which tends to make active the regeneration of the corneal elements, & to hasten the resolution & absorption of the infiltrations.

It is needless perhaps to state that this treatment should never be practised when, in addition to the cornea, the Iris is affected, as the massage might very probably provoke contractions, & spasm of the iris; and further the possibility of glaucoma setting in. It should only be used in cases where the cornea only is affected.

- Trachoma, & its Surgical Treatment -

Though it at first seemed judicious, it does not now appear to me desirable to enter into the subject of Trachoma, as is usually done, with a view to discussing its Historical outline, its Aetiology, Contagiosity, Prophylaxis &c., as this has so often been treated of, not only by the Classical Authors, but also by many who have made a special study of it, whether as regards its Bacteriology, Pathology, or with a view to its Treatment. My reason for stating this is that it would be entirely too large a subject for the present treatise, so that my attention has been confined herein to the Surgical Treatment, from a Clinical point of view, of the affection, and in connection with this, the publications of Dr. George Lindsay Johnson¹ of London, and of Sattler² of Germany, have been, & would always be, interesting, as bearing special reference to what I have written, the principles of treating the affection being in all similar, though the methods of carrying them out differing in certain particulars.

It seems beyond all doubt that Granular Conjunctivitis is a local micro-organismal affection, and clinically speaking, its infectious nature is shown by its contagious & epidemicity, as well as by its development, progress & propensity to re-occurrence.

1. Archives of Ophthalmology. Vol. 19. Nos. 2 & 3, 1890
(A new treatment of Chronic Trachoma)

2. Sattler, "Trachomabehandlung, einst und jetzt."
Berlin. 1891

This Granular Conjunctivitis, or Trachoma, only presents diagnostic difficulties at its onset, when the only treatment indicated, is that by antiseptic caustics, such as Nitrate of Silver, Sulphate of Copper, Corrosive Sublimate, Sub-acetate of Lead &c., but when it has become well-established, has become chronic, offers no difficulty in diagnosis, then the surgical treatment which will be described hereafter seems to be indicated, & perhaps to be absolutely necessary, in order to obtain a definite cure, destroying, as it does, completely, all the morbid, granular, infectious tissue, which, being the cause of the prolongation of the disease even into years & there many, must be entirely removed.

The surgical interference must be in proportion to the extent & severity of the disease. One or two isolated granulations alone may be snipped off with the scissors e.g.; a group of them in one or other of the Cal-de-sac only, may perhaps be excised "en masse", as I have several times seen Salezowski of Paris do; but most often Trachoma affects the whole conjunctival surface, parietal & very frequently, I have observed, bulbar; one cannot then think of extirpation of the affected portion of the conjunctiva.

It is to these extensive cases that attention is invited in the following treatise.

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The Surgical Treatment of Trachoma.

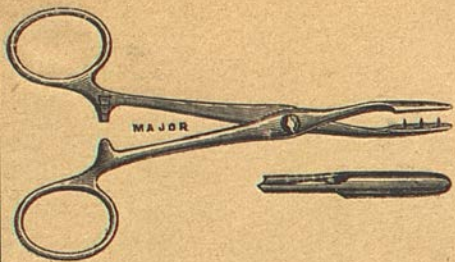
Having assisted, on a considerable number of occasions, at the Operation which is adopted & carried out by St. James in Paris & St. Denis, I was so struck with its rationality, and later, with its efficacy as to results, that I felt it my duty to observe very carefully the method of Operation, step by step; and to watch the progress of the cases as they appeared from time to time after the Operation and while being subjected to the subsequent treatment. Fortunately very good opportunities were afforded me of carrying out my wishes, and I shall now proceed to describe the Operation and the subsequent treatment, as I found it practiced at the Cliniques of St. James & Abadie; adding a few observations of cases, which I took to illustrate their progress & results.

The Operation -

The patient is first anaesthetized, by Chloroform or Ether, as may seem preferable. (In all the cases I have seen Chloroform has been used.)

The bulbar Conjunctiva is then completely exposed to the view by means of a Speculum (ordinary spring lid elevator) and fixation forceps, so as to examine every part of it for granulations. If any are found they are scarified in the way described hereafter. The cornea is also now examined & if affected is similarly treated though very lightly & carefully.

The bulbar Conjunctiva & cornea being disposed of,

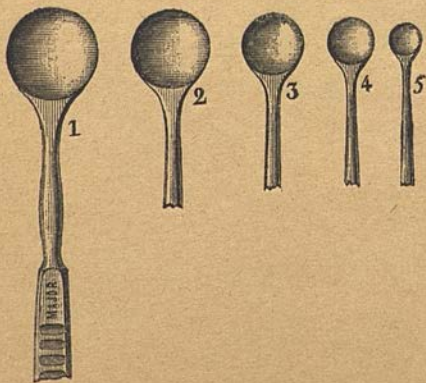


the next step is

The thorough exposure of the palpebral conjunctiva by complete eversion of the lids (it matters not which lid is first everted, but by choice, that one which is most affected); this is only done by means of a pair of forceps, specially used for the purpose, with which the edge of the lid is seized horizontally and by a rotatory movement the whole of the lid is rolled round the closed blades of the forceps and thus the highest or deepest parts of the conjunctival fornix, cul-de-sac, are exposed. This portion is then treated, and gradually, by unrolling the lid, the whole surface of the conjunctiva down to the forceps is attended to. The forceps being then removed, that part of the conjunctiva which was protected by the blades is also sacrificed. In this way the upper & lower palpebral conjunctivae are treated by scarification, curetting & brushing as follows:-

Firstly, scarifications, whose object is to cause the exit of the contents of the granulations from their envelope by its being incised, are practised with a three-bladed knife, the incisions being made horizontally & parallel to the edge of the lid, great care being taken not to miss the slightest portions of conjunctiva affected with granular infiltration, but at the same time saving the conjunctiva as much as possible with a view to the after-effects such as cicatricial contraction with shrinking of the lid on

Then by means of a sharp curette one scrapes away as completely as possible all the morbid



tissue, and this is greatly aided by next brushing the surface with a small tooth-brush with short bristles (hard or soft according to as may appear advisable & depending on the nature of the tissue). This having been done one proceeds with the washing of the parts, which is carried out very freely, energetically & minutely by means of cotton wool soaked in Corrosive sublimate solution (1 to 500), while a plentiful stream of the solution is allowed to flow into & drain completely the every nook & corner, so to speak, of the conjunctiva & its folds.

The above method applies to the bulbar conjunctiva as well as to the parietal, while also, but much more lightly, & with discretion, to the cornea, in the case of the latter, the light incision &c. being made from the periphery inwards toward the centre.

It is very important, when the forceps have been removed from the lid, to scarify &c. that portion of the conjunctiva which was covered by the blades of the forceps, and this is easily done by slightly evert the lid with the fingers.

On several occasions, the majority in fact, it has been necessary, in order to thoroughly evert the lids and thus completely expose the entire parietal conjunctiva and cul-de-sac in its very deepest parts, to enlarge with a cut of the scissors the palpebral slit at the outer canthus. An incision extending about 2 or 3 millimetres suffices for this purpose, while there is no need to suture the wound afterwards, as it heals well of itself, and in the event of its not completely closing,

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it would act as a counterbalancing agent to any tendency on the part of the lid, to entropion from contraction. (This latter ^{complication} has however not been observed so far).

During the operation there is almost always an excessive amount of bleeding, but it may easily be controlled by pressure & frequent mopping with pads of cotton wool, soaked in the sublimate solution (1 to 500), while instead of its being looked upon as undesirable, though one must naturally expect considerable haemorrhages from the incisions, it is perhaps beneficial, by its carrying off with it a large quantity of the granular infectious elements.

The duration of the operation is about 10 minutes.

The operation being completed the dressing is attended to as follows:

For the first day, iced compresses are applied for about an hour while the patient is recovering from the anaesthetic, and this is resumed when he has reached his home, with the addition of frequent lotions of Corrosive Sublimate (1 to 2000).

The next day & during the first 15 days of the subsequent treatment it is absolutely necessary to see the patient again in order to turn back (out) the lids, to detach ^{any} adhesions which may have taken place between the raw surfaces, (for the cul-de-sac, this may be done with a probe having some cotton wool wrapped round its end) and to wash freely & minutely the whole blood-stained surface.

The wool on the probe is soaked in sublimate (1 to 500) as also are the cotton wool pads with which the inner surfaces of the lids are washed.

At the end of 15 days about the conjunctiva presents an aspect smooth, united, still a little swollen, but no granulations can be seen, and there is no longer any secretion, while the patient is able to open his eyes easily without having the sensation of a foreign body etc. in the eye; and with regard to the cornea, if there were previously a pannus or any corneal ulceration, one is struck with the remarkable amelioration which has taken place in the condition, the result being simply a nebula more or less faint according to the acuity of the case before operation.

The patients are kept under observation during a month at least after the operation, while after this it has appeared advisable to see them once & sometimes twice a week for another month in some cases, so as to be ready to intervene immediately, should the disease show signs of reappearing, by destroying at once the first granulations which one might see appearing. If this be attended to, an energetic washing with the cotton wool soaked as above will always suffice, but when the patient remains away too long, if the disease reappears, it will be necessary to repeat the operation. Dr. Jaeger tells me that in all 130 cases about have been operated upon by the above method

by Dr. Abadie & himself at their clinics within the last 2 years, and that while he has not met with one case of absolute failure, there have been a few cases of relative failure, viz. 6 or 7 patients have had to undergo the operation twice on one or both eyes, while one of these a child had to be operated upon 3 times. During the last 6 months however I have observed that no patient either previously (to this) operated upon, or while I was there, has had to submit to a second operation.

The duration of the treatment lasts on an average about one month. In the first fortnight the patient must be seen every day for the washing, after that twice a week at least, and later as above mentioned once or twice a week for a month for the purpose of observation.

Some cases slight in character have been considered cured in less than a month, but others only in 1/2 to 2 months, these have been for the greater part children, or weakly nourished subjects as for example of a strumous constitution.

The question, as to complications arising from the operation, will be asked, & must necessarily be considered.

Firstly with regard to Symblepharon, the complication which has been mostly perhaps met with by others; during my observations I have not seen an instance, and I am sure that he has never yet met with it, while he attributes this fact to the complete revision every day

of the eyelids, and the careful washing of the whole conjunctival surface with Sublimated solution (1 to 500), taking care to detach the adhesions which cannot fail to occur when two raw surfaces, blood-stained, come into contact before the epithelium has become fully restored.

The cicatrices, which follow as a result of the scarifying incisions, over the tarsal cartilages, cannot be avoided, they would be produced probably by any method of cure of Trachoma whether spontaneous or medical. Naturally they must if very marked produce a tendency to entropion, but I have not seen this so far. Farrier however says that he has seen a tendency to it, but not nearly sufficient for him to see in it a complication capable of making him hesitate to operate on a Trachomatous patient. He also tells me of a fibrous exudation which covers the entire conjunctival surface in the days following the operation on some occasions, but a case of it has not occurred during the last six months and it is difficult to ascribe a cause to it. When met with, it has been found to disappear in a few days upon washing as usual with the Sublimated solution.

Complications on the part of the Cornea are very rare, I have seen one case where a small corneal ulceration produced, a few days after the operation, a perforation of the Cornea which however cured without implication of the iris, leaving a small somewhat dense circumscribed nebula.

In all cases where the Cornea has been affected, Yellow Oxide of Mercury Ointment has been used in the subsequent treatment, being applied after the washing with sublimatic on each occasion, and has greatly aided the healing process of the corneal affection after its operative treatment.

When the patients come for the first time, and the Diagnosis of Trachoma is made, Dr Davies practices a preparatory treatment before the operation, varying from 2 or 3 to 15 days according to the nature e.g. succulency, acuteness, of the case in the following manner:

If the case is very acute with much secretion he cauterises once daily with a solution of Nitrate of Silver, 3%.

If the case is very granular, great proliferation of the granular elements, granulations etc, he paints the entire conjunctival surface once daily with Glycerole of Lead.

These two methods when the Cornea is not affected.

If the Cornea is implicated, and there be, or be not, a pustule present he washes the conjunctival surface with Sublimatic (1 to 500) and then applies some Yellow Oxide of Mercury Ointment.

In the very chronic cases no preparatory treatment other than cleanliness & antiseptic precautions are necessary.

The following are a few observations of cases, personally observed, which have been submitted to the above described surgical treatment for Granular Conjunctivitis.

They are given more or less in detail in order to show & illustrate accurately the course which is run by the case after the operation, its immediate & subsequent result on the disease as to the cornea, conjunctiva & the eyelids generally &c.

Observation I.

E. P... a lad of 10 years of age, had suffered from Granular Conjunctivitis for 4 months when he came under our notice the first week in January 1892. The condition was apparently acute; there was much pain, burning sensation, photophobia & epiphora. The granulations were not very numerous, but were distinct, and marked, on the parietal conjunctiva over the nasal cartilage, & especially high up in the Superior fornix where the parietal & bulbar conjunctiva unite. For a fortnight the affection was treated by anti-phlogistic methods, e.g. hot Boracic acid solutions for bathing the eyes & while three times weekly the conjunctiva was finked with a solution of Glycerole of Lead (i.e. a saturated solution of crystallised Acetate of Lead in Glycerine). On the 17th January '92 the centres of the inflammation had been sufficiently subdued to allow of the operation as previously described, which was accordingly carried out. (It should be mentioned that in this case the cornea was not implicated).

Two days afterwards 19th Jan. '92 examination

of the eye showed that there was no longer a process of granular conjunctivitis, but an acute inflammation with swelling of the eyelids, attendant upon the operation. There was considerable photophobia & laceration, with a good deal of pain. The washing with sublimate solution (1 to 500) was carefully carried out, the lids being everted so far as possible to enable the remotest parts to be reached.

Two days later the inflammatory process was subdued to a great extent, while there was not nearly so much photophobia &c.

(It must be stated that both eyes were affected, and that the patient was ordered to bathe the eyes with lotions of sublimate (1 to 2000) frequently every day at home) -

Again two days after this there was still further improvement, the inflammation was very much reduced. Some slight pain & photophobia &c. still.

The conjunctiva had a very healthy though somewhat reddish appearance, but looking very clean & smooth.

In this way the case continued to progress favourably till the 20th January (12 days after the operation), when the following satisfactory state of the case presented itself :-

The patient kept his eyes open in quite the usual normal way without effort, there being no frowning or knitting of the eyebrows &c., while there was now no photophobia, nor pain in the eyes.

The lady's mother could not express fully enough her delight & gratification at the result of the operation, especially as her daughter (7 1/2 years)

had had a similar affection for 5 years & up to the present nearly, he had thought such cases incurable.

On Feb: 4th the case seemed completely cured, the patient suffered no pain or discomfort from the eye, & made no complaint whatever.

On 13th March, he came back on account of the right eye, & it was found that a return of the condition threatened, so the washing, somewhat briskly, with Sublimite (1 to 500) was again resorted to, and up to now (April 14th) he has remained quite cured, there having been no return of the affection -

Observation II.

J. D... the sister of the boy in the preceding observation was brought under our notice at the same time. Her age was 7 1/2 years, and she had been a sufferer from Granular Conjunctivitis since the age of 2 1/2 years, i.e. during the last 5 years. Both eyes were found to be in a state of Chronic Trachoma, this case being a very severe one.

In the I.E., both the palpebral & bulbar conjunctivae were affected with granulations, the superior cul-de-sac especially thickening with them, and on the lower palpebral conjunctivae were a great number of granulations also, mostly in the region of the caruncle and that part of the inferior cul-de-sac near the inner canthus. There were also several distinct granulations on the bulbar conjunctivae near the inner margin of the cornea, which was not at all implicated.

In the R.E. the condition was confined to the palpebral

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conjunctiva, neither the bulbar portion nor the corner being affected. After a fortnight's preparatory treatment by painting the inner aspect of the lids with Glysters of Lead, &c, she was operated upon on the same day as her brother, viz. Jan. 17th '92, and the subsequent treatment, washing with Sublimite (1/8000) &c, carried out as in his case.

Ten days afterwards the result was so good that it was only necessary for her to attend the clinique, where the washing with sublimite solution twice weekly, and from Feb. 4th only once a week. On the 13th March she had not been torn for a fortnight, and there had been no return, or tendency thereto, of the affection, while she had no complaint to make in any way, and was therefore looked upon as cured.

Observation III.

J. L., aged 13½ years. This young lad had been troubled with Granular Conjunctivitis for six months previously to his coming to me in January 1892. The case was extensive & severe, there being granulations on both the parietal & bulbar conjunctivae of each eye. They were mostly in the superior cul-de-sac, but also in the inferior ones, in addition to the parts over the tarsal cartilage being much affected, while there were a few granulations on the bulbar conjunctivae both on the side of the corner of each eye. In addition, on the corner itself of the I.E. there was a small focus, perhaps a granulation, resulting later in a perforating ulcer, which afterwards became closed & left a small white nebula very dense in character.

The usual operation was performed on the same date as the two previous ones Jan. 17th '92, after a week's preparation by the customary antiphlogistic methods, and the case progressed most satisfactorily. On Jan. 31st '92 the subsequent treatment by washing with sublimate (1 to 500) &c having been regularly carried out, there was no longer any photophobia, the patient being able to keep his eyes open without effort, which he had not before, the knit expression of his eyebrows & forehead having also disappeared, while he had no pain or discomfort whatever now, and the inflammation & swelling of the lids had been entirely subdued, the redness & blepharitic appearance of the edges of the lids having also quite disappeared.

On Feb. 21st '92 the patient was quite cured of his Trachoma & there only remained the small white cicatrization of the former ulcer.

Observation IV.

Mrs U. M. aged 45 years, a washerwoman by occupation, had been a sufferer from Trachoma for 8 years. During this long time she had tried all kinds of treatment at different Out-patient Departments of Hospitals & Cliniques, though getting a slight benefit temporarily, she had never been cured & the disease had become very chronic. She had used lotions & ointments for her eyes, had had the lid painted with Nitrate of Silver, Sulphate of Copper, Acetate of Lead &c but all without any satisfactory result, when,

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almost despairing of her case, she came to us & consented to have the operation, which was accordingly performed on the 12th Jan. 1892. The case subsequently progressed most favourably under the usual regular care & attention, and on the 26th February, when she last came to the Clinique she was completely cured of the affection, and expressed herself in the strongest terms of gratification & pleasure at the result of the treatment.

The palpebral conjunctivae over the tarsal cartilages presented a very clear smooth appearance, of a whitish aspect from the cicatrices following on the linear scarifications made during the operation. There was no tendency to any Symblepharon, entropion or indeed any such complication on the last occasion of seeing the patient. (April 1892) In this case the cornea was not affected.

Observation V.

Mlle A. L. aged 12 years.

This young patient was a fine healthy-looking girl, very robust, & with quite a fresh complexion. She had always enjoyed good health, but for more than the last 2 years had had the affection of Granular Conjunctivitis. She had as usual been treated, but without result, by the former methods e.g. Nitrate of Silver, Sulphate of Copper &c, but on coming to us decided (or rather her mother decided) that she should undergo the operation which was performed on March 4th 1892 in the usual way. The conjunctivae &c. having been daily, for a

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weeks previous to the operation, prepared by the customary methods of treatment. The granulations were many & diffuse, but small in size, affecting both the parietal & bulbar conjunctivae of each eye. There was further a marked condition of Pannus in each eye, the upper portion of the cornea being especially affected, while it extended though in a less pronounced condition over the whole corneal surface of each eye. The usual subsequent treatment by washing with Sublimat (1:500) was carefully attended to, and on March 8th, 4 days after the operation, she said she felt her eyes already much better than they had been for the last 2 years. The cornea during the operation had been lightly curetted from the periphery toward the center, and then very gently brushed, so that later when the washings with Sublimat had been done in the subsequent treatment, some Yellow Oxide of Mercury ointment was each time placed in the eye between the lids, for the corneal irritation, with very good effect.

On March 11th a week after the operation, the conjunctivae were re-assuming their normal aspect, the inflammatory process, set up by the operation was almost subdued, and there were no adhesions either between the conjunctivae, or conjunctivae & cornea; the pannus was very markedly reduced, in fact the case was making excellent progress, and especially so as it was a very severe one, and the operation had been hastened on account of the patient having been previously

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treated for a long time without avail.

One month after the operation, she was quite cured, thus having been no complication, or arrest of the rapid progress to recovery; and there has been no threatening of a return of the affection. There remains but a slight nebulous haze in each Cornea which has diminished rapidly in the last fortnight (April 19th '92)

Observation VI.

M^{rs} M. N. aged 7 years. This young patient was not toward appearance very strong or healthy looking, & had not according to her mother enjoyed very good health. When she came to us there was an erythematous skin eruption on her face & neck, while her mother stated that two younger children suffered from the same affection of the eyes. She had had the Trachoma ^(the patient) for the last 4 years, & had on ~~off~~ been treated by a Medical Practitioner with lotions, drops & various kinds of applications (the mother's statement), but all without beneficial result. The case had always been getting worse, so the mother brought her to us, and she was operated on in the manner before described on the same date as the preceding case, March 4th '92. She had all the usual symptoms of Trachoma, & on examination of the eyes, it was found that in each, there were many small & diffuse granulations, affecting both the palpebral & bulbar conjunctivae.

The palpebral conjunctivae were very red and appeared as if they had been very succulent not

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long previously to her coming to us. In the bulbar conjunctiva of the R.E. near & below the inner canthus were two large granulations, so prominent that they were snipped off, before curetting, with the scissors. There were also 3 or 4 small granulations on the bulbar conjunctiva between the margin of the corner & the inner canthus, a little nearer the latter; while in the I.E. on the bulbar conjunctiva were also some small granulations near the inner canthus.

After the operation, the daily washing with Sublimat was carefully carried out, and on March 8th, 4 days afterwards, the mother said the little girl was wonderfully better than before the operation took place.

The patient continued to make very satisfactory progress & a week later March 15th the conjunctivae presented an almost normal appearance, she had no pain & the inflammation due to the operation had nearly all subsided.

At the end of a month, she was only coming once a week, the bulbar conjunctivae were quite normal, the palpebral very clean & smooth, & pinkish-white in colour, the cicatrices from the incisions made by the 3-bladed knife showing as thin small whitish streaks, mostly seen in the folds of the conjunctivae in the Superior & inferior fornices. She had no trouble or discomfort with her eyes, and was practically quite cured, it only being necessary from this on to watch the case against a relapse, or rather fresh attack, as her surroundings at home seemed to be somewhat favourable to such an occurrence.

Observation VII.

M. L. M. aged 37 years -

This was a very Chronic case, the patient had had Trachoma for the last 16 years, dating back from 1876; he had been treated by almost all previous forms & methods of treatment, at different places in Paris, on & off during this time.

At one time for 3 months he was an Out. patient at the Hospital Dupuy - Treuille, Paris, and was carefully treated there by lotions to bathe the eyes with (e.g. Boracic Acid) in addition to having at the same time his eyelids painted with Nitrate of Silver, Sulphate of Copper, & Iodochloride of Mercury, solutions &c, but he derived no benefit of any permanency from any of them. He was also an Out. patient at the Hospital St. Antoine, Paris, where also for some time he was treated by similar usual former methods, while in addition had applied lotions, washings, bathings, poultices &c. to his eyes himself, in fact had tried everything friends and Practitioners had advised him, but all to no purpose.

(The above is the patient's statement.)

He came to us on Jan. 10th 1892 and on the 12th Jan. two days afterwards was operated on in the customary manner, & the subsequent treatment carefully carried out. Before the operation he had always suffered a great deal, having great pain at times in both eyes, excessive photophobia & lacerimation.

There was a marked condition of pannus in each eye, the cornea being affected in about the upper 2/3 of its extent, there being much vascularisation extending from the periphery inwards, and small

whitish-grey infiltrations surrounding a few small erosions of epithelium. The parietal and bulbar conjunctivae were extensively affected with small diffuse granulations.

This case progressed most satisfactorily and on the last occasion of seeing him 3 months after the operation, the parietal conjunctivae looked very healthy somewhat whitish & smooth, while the bulbar conjunctivae were quite normal in appearance. The pannus had entirely disappeared, there were no erosions of the corneas, but only a very slight nebula which was not visible except by the oblique illumination, while the patient had a very serviceable vision. To look casually at the eyes one would not detect any abnormal appearance.

This patient had for years to put such a strain on the surrounding muscles, orbicularis, occipito-frontalis &c that his forehead temples &c. were much wrinkled & gave him the appearance of an old man, whereas he now looked 30 years younger, to quote an expression used by an acquaintance of his at the time.

Observation VIII.

M^{rs} P., aged 14 years. had been troubled with her eyes for 2 or 3 months before coming to us, but had had no other treatment than such as her mother thought fit, in the way of bathing the eyes, applying fomentations &c at home. This had from time to time eased the pain & swelling of the eyes, but did not, naturally, prevent the onset & increase of the

condition of Granular Conjunctivitis which was found to be present when she first came under our notice Feb: 5th '92. There were numerous small, but distinctly marked, granulations on the parietal conjunctivae of both the upper & lower lids & especially in the superior & inferior fornices of each eye. There were also a few granulations on the bulbar conjunctivae between the inner canthi & the cornea. The cornea of the I.E. was slightly affected in its extreme upper portion.

After a preparation of 15 days by the usual method, in this case, a solution of Sublimat (1 to 500), & some Yellow Oxide of Mercury ointment after washing the sore lid, she was, her mother the consulting Dr. it, operated upon on the 20th Feb: as before described, the cornea^{I.E.} being lightly curetted where affected, but not touched, as this would erode the epithelium too much for this case. The subsequent treatment was followed out as usual, and on March 21st '92, one month later, the R.E. was completely cured, but in the I.E. there was still some infiltration of the parietal conjunctivae over the tarsal cartilage of the upper lid; the bulbar conjunctivae, as in the R.E., was quite normal, but an ulceration, small, of the upper part of the cornea had taken place. The washing of the conjunctivae was persevered with and Yellow Oxide of Mercury ointment was used for the Corneal ulceration, which seemed phlyctenular in character, though the bulbar conjunctivae was not apparently injected nor was there any epiphora to speak of.

There was however a certain degree of photophobia

which caused the patient to keep the eye partially closed. At the end of March, the Conjunctiva was completely restored, & there remained only a small nebula in the upper part of the cornea.

In addition to the above cases, I have from time to time seen a few patients who have been operated upon by the above method and returned six, twelve & eighteen months after the operation, at the request of Drs Abadie & Darnis to report themselves, so that the after-results might be observed. In each case permanent cure had been effected, while in only one case had a complication arisen, which was that a few of the cilia, although there appeared no tendency to entropion, had become directed slightly inwards; these were removed by epilation & the patient has evidently not been troubled since, as we did not see him again, now some months.

One patient whom I saw had come from the French Possession of Algeria a year & a half ago to be operated upon, and being in Paris about 3 months ago came & reported himself at the Clinique, when it was found that the cure had been completely cured, without relapse or complication having arisen. And similarly with several other cases.

By far the majority of the patients have not returned, and it is perhaps fair to presume that they have found themselves permanently cured and not troubled themselves to come again.

was sustained by rest and careful feeding, and weight increased, while a careful analysis of the faeces and urine showed that no more albumen was excreted than in healthy digestion. In view of these facts, it is difficult to resist the conclusion that it is quite possible for albumen to be digested in the intestines, quite independent of the stomach or gastric secretions.

But if so, the question naturally arises, — why does the general health suffer so much in atrophy and cancer of the stomach and other types of severe disease? It cannot be accounted for by pain, for pain may be entirely absent. It is possible to explain it by the fact that, in disordered digestion the molecules of albumen split up in an abnormal and irregular manner, and that wasting and malnutrition are ~~not~~ reproduced by the non-elimination of some of the secondary products of digestion, which are now with much probability set down as the cause of many diseases. The likelihood of this being the case is further confirmed by the frequency with which leucine, tyrosine and similar compounds are found in considerable quantity in the urine and faeces of those suffering from