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A STUDY IN SYPHILIS : THE CAUSATION OF OPHTHALMIC DIS- ORDERS IN COLOURED RACES, WITH SPECIAL REFERENCE TO THE BRITISH WEST INDIES

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INTRODUCTORY REMARKS

HISTORICAL

The early history of syphilis is of more than academic interest in this review because of the large number of British Colonies in the West Indies. Data collected by Seltzer¹ show that the first definite record of syphilis was made in 1493.

After his discovery of the Bahamas, Cuba, and Hayti ; on the return voyage to Spain, Columbus landed at Barcelona in March, 1493. At that town, a member of the crew, a pilot, Pinzon, sought medical aid for a disease which he had contracted in Hayti from a native woman. Ruy de Isla, a distinguished surgeon of Barcelona, noticing a new and serious disease, wrote a treatise on it ; and that is believed to be the earliest known description of syphilis. An epidemic of the disease broke out in Spain in 1494, and Spanish prostitutes are said to have communicated the disease to the French troops in Italy. From this focus the disease quickly spread over Europe with the movements of the French army.

Reports of the disease appeared in France, Germany, and Switzerland in 1495, Holland and Greece in 1496, England and Scotland in 1497, and in Hungary and Russia in 1499.

The Portuguese are believed to have been responsible for carrying the disease into Africa, and the slave trade with the West Indies served as a further means for its dissemination.

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It was first recognised in India in 1498, and in China in 1505, after the first visit of Europeans to Canton. Japan's first acquaintance with syphilis appears to date from 1569.

" COLUMBIAN " SYPHILIS

In the name " Columbian " syphilis preservation of the historic account related is assured.

Gougerot ² has discussed the reasons why syphilis of the North African remains Columbian and free from nerve complications ; and he suggests that the type has persisted as when first introduced into Northern Africans.

Blacklock ³ in recent studies makes reference to the differences which distinguish French and English Colonial Native syphilis from European syphilis. We see the same infecting agent producing dissimilar disease processes under changed conditions of climate, and in persons of different race born and reared in the same division of country.

Great interest has been awakened in the comparatively changeful and diverse results of infection with the *Spirochæta pallidum*, the world over, especially among coloured persons.

The study of syphilis to-day must also embrace biological considerations. In the modern wider concept medicine has come to be regarded as applied human biology. It has been pointed out that health measures should not be based solely on " the pathological conception of disease."

In this regard the Scottish Health Services Committee of the British Medical Association emphasised the fact that the health of an individual is dependent on heredity and on the measure of his success in reacting to his environment.

SOCIOLOGICAL

An important element in our environment is our freedom and its relation to authority. It is therefore essential that the historical facts relating to syphilitic infection and incidence should be brought in their right setting to the notice of Colonial administrators and legislators. Clark has remarked that however much we may strive to reorientate opinion, syphilis still remains the secret, shameful disease ; and Mills has pleaded that " much progress will have been made in sociology when

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the V.D. patient is universally regarded as an unfortunate, rather than a guilty member of the community."

Syphilis is to-day the social disease of importance. Sociological effort to combat it has not been found wanting in Europe and America. There the Great War broke the "conspiracy of silence" against venereal diseases and public opinion was roused to effort.

In the Colonies that "conspiracy" has not yet been altogether broken. Public newspapers in Port-of-Spain have left out the word syphilis in Health Week lectures of the writer.

Colonial sociological effort is, however, indirectly at work against syphilis in the magnificent organisation of Child Welfare and Ante-natal Clinics throughout British Colonies and Protectorates.

An urgent need exists for further activity over a large field.

Newsholme⁴ has pointed out the need for a social as well as a medical investigation in every case for relief, and that action should be taken to remove social or other evils. In that way only, he states, is it possible for the community, when giving charity, to obtain something for something.

Newman and Harrison have both laid great stress on full and early treatment as the only sure prophylaxis in State control of syphilis.

In a general attempt to lessen the inroads of syphilis, by prompt and efficient treatment, the principle of the gratuitous treatment of all applicants at the public expense must be acted on.

Where "all applicants" means, for all practical purposes, the coloured population of a colony complete socialisation of medical provision may not find favour.

The attitude of the medical profession in Great Britain towards free treatment of syphilis is a "remarkable triumph of collectivism over the financial interests of private medical practitioners."

Is there any reason to believe that colonial practitioners would vary in this respect from their *confrères*?

THE OPHTHALMOLOGIST IN CROWN COLONIES

The organisation of forces in the fight against syphilis in the Colonies needs the enlistment of the ophthalmic surgeon.

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From this critical review it will be evident that an important sphere of activity exists for the trained ophthalmic specialist in tropical colonies and dependencies. The general practitioner refractionist or the hospital surgeon who performs cataract operations cannot be expected to respond to the demand now being made in this respect by smaller units of the British Commonwealth of Nations.

MacCallan ⁵ has recently pointed out that a specialised knowledge of eye diseases cannot be expected of the ordinary colonial medical officer. An ophthalmologist in the British West Indies has related how he found it necessary to take a venereal diseases course at Vienna when on post-graduate ophthalmic study.

The work of the International Organisation against Trachoma has certainly had the effect of bringing into prominence the need for the trained oculist throughout the British Colonial Empire. Scott ⁶ relates that Cyprus, with a population of 350,000, is now served by an official staff of three consulting ophthalmic surgeons and three full-time travelling oculists.

BLINDNESS IN THE TROPICS

Professor de Lapersome, President of the International Association for the Prevention of Blindness—an organisation now five years old—relates how the urge arose in 1931 to study the prevention of blindness in colonies and tropical countries taking part in the French Colonial Exhibition.

At once the great problem of trachoma loomed up in relation to the affecting spectacle of unfortunate people deprived of sight. In the British West Indies we have no trachoma problem.

In the prevention of blindness in Trinidad and Tobago syphilis is the public health question; and the same is true in all the West Indian Islands, particularly of Barbados and British Guiana.

This was recognised in 1931 when C. H. St. John, Hon. Ophthalmic Surgeon, Barbados General Hospital; J. Browne, Ophthalmologist, British Guiana Government Medical Service, and myself met informally in Barbados to discuss West Indian ophthalmological problems.

In 1932, the writer undertook voluntarily the task of preparing a blind census for the colony of Trinidad and

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Tobago. In a work, published as a Trinidad Government Council Paper,⁷ syphilis was found to be responsible for 23 per cent. of the cases of blindness investigated.

RETURNS OF EYE DISEASES IN COLONIAL ADMINISTRATION HEALTH REPORTS

With few exceptions, the same scheme of classification for making returns appears to be in use throughout British Colonies, Protectorates, and Dependencies. It is found under the heading, "Affections of the Nervous System and Organs of the Senses," *e.g.* :—

"Affections of the Organs of Vision—

(a) Diseases of the eye	.	.	.	.
(b) Conjunctivitis	.	.	.	.
(c) Trachoma	.	.	.	.
(d) Tumours of the eye	.	.	.	.
(e) Other affections of the eye	.	.	.	.

Can such a classification serve any useful purpose except as to the prevalence of trachoma?

A more detailed return for eye diseases in Administration Health Reports has been observed from Grenada, Fiji, and from British Guiana.

YAWS AND SYPHILIS

In Colonial Medical and Sanitary Reports the heading "Yaws and Syphilis" appears repeatedly, and may have the effect of bringing syphilis to the notice of lay persons in wrong perspective. In accounts of eye conditions the two diseases should be widely separated. Blacklock recently questioned the soundness of much of the current belief about yaws and its relation to syphilis in two articles, "Relationship of Syphilis to Yaws"⁸ "Yaws and Syphilis. Two Diseases or One?"⁹.

Van Nitsen¹⁰ has severely criticised Blacklock's arguments, and maintains that the criteria generally accepted in the differential diagnosis of yaws and syphilis have not been found wanting, and still hold good in spite of Blacklock's questionings.

The report of the Jamaica Yaws Commission for 1932 shows the work of the Rockefeller Foundation in the colony. The Jamaica Commission found no instance of iritis or keratitis in yaws subjects; and that has also been the experience of the writer in Trinidad.

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CO-OPERATION OF CLINICS

The International Health Division in Jamaica indirectly lays stress on the need for co-operation between the V.D. clinic, the Yaws Treatment Organisation, and other special departments in elucidating problems in diagnosis and treatment of syphilis and yaws.

Mills¹¹ has recently stated the case for collaboration between the V.D. and other special departments.

Ocular symptoms play an important part in bringing cases of tropical syphilis under control and treatment, and there is, on this account, great need for active collaboration between the V.D. clinic and the eye department in the colonies. To an appreciable degree their work is interdependent on account of the extent to which syphilis attacks the eye of the coloured sufferer.

While clinical university tutor in Dr. Traquair's Clinic at Edinburgh, I was particularly fortunate in being privileged to participate in the happy co-operation that existed there between the V.D. department under the late Mr. David Lees and the eye department.

Large numbers of patients in the British West Indies are unaware of being infected with syphilis until symptoms of eye disease compel them to seek medical aid. Up to a few years ago such patients sometimes hurried to the optician who was permitted to call himself "doctor" or "eyesight specialist." In Jamaica, Trinidad, and British Guiana an Opticians Registration Law had to be introduced to remedy this amongst other evils.

There is no doubt that a painful eye lesion or a disorder of visual function is a quick stimulus to an appeal for relief, an appeal which should be guided into the right channel.

THE CAUSATION OF OPHTHALMIC DISORDERS IN COLOURED RACES—WITH SPECIAL REFERENCE TO BRITISH WEST INDIES

Similar accounts of the incidence and treatment of ocular syphilis in our lesser units of Empire would no doubt be welcome, and should be of practical value.

At present there would appear to be no statistical details available. There is evidence, however, of effort to establish and further the development of efficient ophthalmic departments in many colonies. In this

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respect the individual practitioner's initiative and the organised efforts of social service societies are notable features. Witness the pioneer work of Sir Randall Phillips in Barbados!

The Bulletin Supplements furnish records of work in eye departments, from Barbados, British Guiana, Ceylon, Cyprus, Fiji, Hong Kong, Palestine, Trans-Jordan, and from Trinidad and Tobago.

Palestine has a highly organised specialist eye service, and Cyprus is richly provided with means for the amelioration of ocular disease.

At the Port-of-Spain Eye Clinic, 816; and at the San Fernando Eye Clinic 1,144 new eye cases were seen in 1933.

An account will follow of experiences in the prevention, diagnosis, prognosis, and treatment of ophthalmic disorders due to, or associated with, syphilis in cases seen at the Colonial Hospital, San Fernando, from May 15th, 1932—that is, when the eye department was instituted—to December 31st, 1934.

Private patients seen in Port-of-Spain, the capital city, during the five year period ending April 30th, 1935, will also be mentioned.

San Fernando Hospital, situated 39 miles from Port-of-Spain, contains 200 beds, 13 of which are reserved for eye cases, exclusive of cots and cribs for children and babies.

Coloured work-people in the San Fernando Hospital "area" are mainly engaged in:—

(a) Cultivation of sugar-cane, cocoa, coconuts, rice, and grape fruit.

(b) Manual occupation with important oil companies, the Pointe-a-Pierre refinery being the largest in the British Empire.

(c) Employment on the world-famous pitch lake of La Brea.

ACCOUNT OF CASES, WITH COMMENTARY, AT THE COLONIAL HOSPITAL, SAN FERNANDO

May 15th, 1932, to December 31st, 1934

Short Summary of all Aspects of Eye Cases

Total number of cases	2,920
" Pauper " and " Poverty " patients	2,601

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Private patients	319	
Operations, excluding minor proce- dures		344
Cataract operations	130	
Trephine for glaucoma	25	
Prescriptions for glasses		607
Cases of eye injury		190
Penetrating injury of the globe	35	
Ophthalmia neonatorum cases		25
Corneal ulceration, all types of cases		135
Ocular syphilis, all cases		399
" " " 3932	149	
" " " 1933	139	
" " " 1934	111	
Iritis, cyclitis, uveitis, all cases		232
" " " <i>syphilitic</i>	113	

In 48·7 per cent. of cases if iritis, cyclitis, uveitis, the cause was syphilis.

Only in 1932 was the sex relationship considered in the annual report and was as follows :—

All cases, iritis, cyclitis, uveitis : males 36 ; females 20.
Syphilitic " " " males 24 ; females 13.

THE EARLY TREATMENT OF IRITIS

Williamson-Noble,¹³ in his Lettsomian lecture, says, "experience with the slit-lamp has taught me that, in the absence of glaucoma or some inflammatory affection of the cornea, injection of the conjunctiva in the region of the corneal margin means iritis or irido-cyclitis, even if nothing can be seen by the ordinary methods of examination. If effective treatment can be instituted at this early stage, there may be complete recovery without any of the usual sequelæ of iritis." I am in complete agreement with Williamson-Noble. A diagnostic sign of importance in coloured persons with syphilitic iritis is the presence of enlarged glands above the medial epicondyle of the humerus ; for such persons may appear to be in good general health without skin eruption or buccal or faucial mucous membrane lesion.

With the dark and heavily pigmented iris stroma of coloured persons the classical signs of iritis—lack of lustre, alteration of colour, want of iris pattern, new

blood vessels—are not readily made out in the early stages. With the slit-lamp, endothelial bedewing, aqueous “flare,” and mesodermic “nodules” may be readily seen. It is very important therefore to institute immediate anti-luetic treatment without waiting for further signs of iritis and the result of the Wassermann test when a patient reports with ciliary injection only, and a strong probability of the cause of it being syphilis. Further, an early injection of N.A.B. has a definite diagnostic value in its visible effect on the eye lesion.

EYE INJURY AND OCULAR SYPHILIS

The coloured workman frequently reports with a history of injury at work in cases of luetic eye disease, iritis and cyclitis in particular. Attempts to relate traumatic cause, however slight, with an inflamed eye are not always to be classed as malingering. It is good practice to treat such cases fully and at once. That makes for quick restoration to full working capacity, for these are usually cases of florid secondary syphilis and the ocular response to treatment is magnificent, the tissues having had time fully to liberate antibodies. To institute immediate treatment, an intravenous injection of mercury is often safer than neoarsphenamine. The blood specimen is taken just before the injection or at the next visit.

Lane¹⁴ has commented favourably on intravenous mercury in the treatment of syphilis.

With effective local and special treatment promptly instituted, the patient gains confidence; and adequate investigation with continued treatment is permitted. The workman is then told the nature of his eye trouble and a report sent in to his employers.

One is able to record that no case of this kind, attended to in such a way, has reached the Workmen's Compensation Court. The only case contested was settled out of Court, and was one in which optic atrophy and spastic paraplegia partially developed, during recovery from a corneal burn with molten metal, in a patient whose blood Wassermann was positive.

The number of eye injury cases at San Fernando is 190, in 2,920 patients; and there have been no cases of interstitial keratitis following trauma in persons with acquired syphilis.

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WASSERMANN BLOOD TEST FIGURES

Total number of cases	2,920
Number of requisitions for Wassermann test	551
Tests reported positive, generally strongly positive	339
Tests reported negative	110
Anticomplimentary, unsatisfactory specimens, patients not reporting, etc.	102

Therefore, of all eye cases the blood Wassermann was found positive in 11.6 per cent. Altogether 60 cases clinically syphilitic did not have a test. Of pauper and poverty patients, the percentage is 16.0.

SYPHILIS AND NON-SYPHILITIC EYE DISEASE

On account of widespread syphilitic infection among the coloured population of the southern part of Trinidad, where persons of African and East Indian descent predominate, great care has to be taken in associating signs and symptoms of eye disease with a positive Wassermann test. Undoubted cases of Fuch's "epithelial dystrophy," retinal glioma, retinal arterio-sclerosis, avitaminosis, pituitary tumour, and leontiasis ossea have been misdiagnosed as being due to syphilis in their production of visual disturbances.

OCULAR SYPHILIS AND GLAUCOMA

In contrast to the above, the writer has seen syphilis attack the better eye in two cases in Port-of-Spain in which chronic primary glaucoma previously caused severe visual loss in the other, amounting in one case of ability only to count fingers at 1 metre in the temporal field.

In that case, anterior uveitis with scleral involvement leading to ciliary staphyloma provided an almost hopeless prognosis. The patient, a woman of 54, had a strongly positive Wassermann reaction; and there was intense cyclitis. Paracentesis of the anterior chamber, with repeated evacuation of aqueous, relieved secondary glaucoma. After three and a half years useful vision of 6/36 remained, with a correcting lens. The eye with primary glaucoma was not operated on.

In the other patient, a man of 50, severe retinitis, with extensive hæmorrhages and exudate, produced marked retinitis proliferans. Useful vision of 6/9 remained, however, after two and a half years. The other eye, which was glaucomatous, was successfully trephined after a ten months' course of N.A.B. and bismuth, and during that time vision fell, in spite of eserine instillations, from 6/18 to 6/36, at which it now remains.

Cuénod and Nataf¹⁵ have recently reviewed the influence of syphilis upon the causation of diseases of the eye in North Africa. They record that disease of the eye, such as trachoma, may be greatly influenced by the co-existence of infection with syphilis; and that trachoma, on the other hand, may precipitate an attack of interstitial keratitis. They also believe that syphilis may be a cause of simple primary glaucoma. Glaucoma simplex is the commonest cause of blindness in Trinidad after syphilis; and both diseases are also very common in Barbados.

The writer has never been able to associate the two diseases etiologically. In two cases in three years' hospital practice in Trinidad, the trephine hole became blocked soon after operation and a second hole was made. In neither of these cases, among others of glaucoma, was there any evidence of syphilis.

It is to be noted, however, that two cases of senile cataract developed severe syphilitic irido-cyclitis five and six weeks after operation. They both yielded at once to anti-syphilitic treatment, with good visual result.

SYPHILIS AND CATARACT

In two cases of ocular disease complicating operable cataract in young coloured persons the Wassermann reaction was positive. In one, a carpenter of 25, the right eye had been operated on for cataract in 1932, and there was no perception of light in it. Through the large iridectomy coloboma gross post-inflammatory changes in retina, optic nerve head, and choroid could be made out. When he came to San Fernando in April, 1934, there was an immature cataract in the left eye and 6/60 vision. His blood Wassermann was positive and he had previously had four intramuscular injections in 1932.

On October 26th, 1934, after a six months' course of

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neo-salvarsan and bismuth, a Ziegler's complete discission operation for cataract was performed ; and on December 21st, 1934, the vision of the eye was 6/5 with correcting spherical lens.

The other patient, an East Indian Trinidad-born woman of 30, a widow with three children, is to be operated on at an early date.

In a report from the Glasgow Clinic for the Certification of the Blind ¹⁶ it is stated, " the proportion of positive Kahn results explains a number of the failures in cataract operations." " It is generally recognised that in myopia, cataract, and glaucoma the incidence of positive serological reactions is high, but opportunities for collecting data are not frequent."

Out of a total of 169 cataract and 44 glaucoma operations, during five years' practice in Trinidad, there have been no operation failures as the result of syphilis.

CONGENITAL SYPHILIS AND CONGENITAL CATARACT

A group of cases of developmental familial cataract associated with clinical and serological evidence of congenital syphilis is of exceptional interest.

The association of zonular (lamellar) cataract with defect in the enamel of permanent teeth has long been recognised. The teeth affected with the characteristic hypoplasia are all the incisors, all the canines, and the sixth year molar, those whose enamel organ undergoes calcification during the first two years of life. That is the period at which vitamin A deficiency or ergosterol activation defect produces changes in the two sites where epithelium is not thrown off, but persists in the body, *i.e.*, (a) the lens, where, owing to its formation as an invagination of surface epiblast, the oldest cells are central and cannot be cast off ; (b) the enamel of the teeth, where the cells become calcified and thereby retained. At the same age period, the first two years, congenital syphilis affects developing structures. That explains the changes found in the same group of teeth, the irregular formations seen in Hutchinson's and Moon's teeth. Hutchinson's is due either to non-development of, or to malformation in, the central lobe of the incisor, producing respectively the peg-shaped tooth and the vertical notch. In Moon's tooth the cusps have

fallen together from failure of the central pillar to mature ; and instead of a sixth year molar with a broad grinding surface, a dome-shaped tooth is developed.

Coloured persons in the West Indies have exceedingly good teeth, and perfect wisdom teeth are common.

Rickets in Trinidad is a rarity, zonular cataract is very uncommon, and hypoplasia of the enamel of permanent teeth never seen. Hutchinson's teeth are exceptional ; and in cases of congenital interstitial keratitis, a Moon's tooth is more generally found.

As far as has been ascertained, etiological relationship has not been described between congenital syphilis and congenital or infantile cataract. In the group of cases to be now described, the de X family, the amount of tooth change due to congenital syphilis varied directly with the degree and extent of lens opacity present in each child ; the changes of the Moon type were also present in canines, bicuspid and all the molars of some children. Those with no evidence of cataract had normal teeth. The lens changes did not correspond to any recognised type. Both parents and all the children had strongly positive blood Wassermann reactions.

In no member of the family has interstitial keratitis developed ; and two children had " needling " operations in 1932. Before operation, each child had a course of neoarsphenamine and bismuth.

The table (p. 259) graphically describes spirochætal infection.

BLINDNESS

Cases of incurable blindness seeking advice	73
Incurable blindness due to syphilis	31

Syphilis was the cause therefore in 42 per cent. In the Trinidad Blind Census of 1932 the percentage for syphilis was 23.

Many cases with vision of/or less than 3/60 Snellen in each eye were not counted. They suffered from optic atrophy ; but, on account of good peripheral fields, they are able to get about fairly well. With a Pension Act for Blind Persons they would create a difficulty in certification.

UNUSUAL SYPHILITIC INVOLVEMENT OF BOTH EYES

Of 149 cases of ocular syphilis officially reported at San Fernando in 1932, 71 were males and 78 females ; and

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THE DE X FAMILY. RESULTS OF EXAMINATION, JUNE, 1932

Name	Age	Vision	Lens Opacity	Teeth	Remarks
Father .	50	R 6/9; L 6/6	Nil	Four perfect wisdom teeth. No H. or M.*	Ulceration of R. eg, gummatous.
Mother .	48	6/6: 6/12	Nil	Caries. No. H. or M.	Never ill. Occasionally "fever."
Hettie .	24	†H/M; 5/60	Both eyes	Molars and bicuspids of Moon type. Incisors and canines nil. All molars, including 4 wisdom, show change. Some caries.	Sight defect from birth. Nystagmus. Microcorneæ. R. convergent squint. L. myopic; tigroid fudus. R. perinuclear type of opacity. L. irregular pestle-shaped opacity.
Henry .	20	6/6; 6/9	Nil	Many stumps, including 6th yr. molars. No. H. or M. teeth.	Never went to school. Test types for illiterates used.
Reginald	18	3/60; 3/60	Both eyes.	H. and Moon's teeth.	Microcorneæ. Irregular pupillary margins. Good dilatation with mydriatic. Never went to school.
Matilda	16	6/6; 6/9	Nil	No. H. or M.	Can read and write.
Frank .	15	6/6; 6/6	Nil	Exceedingly good.	Illiterate, but bright.
Cecil .	12	C.F. at two feet.	Most opacity in family.	Greatest luetic stigmata.	Photos of pt. and teeth shown. Vision after operation, 6/24; 6/18. At school for 1½ years.
Christiana	10	6/12; H/M	Both eyes; more in L.	Well marked Moon's teeth.	Photo shown. Raised tension and iritis after operation on L. Poor result, ? amblyopia ex anopsia.
John .	9	6/9; 6/9	Nil	Crowns of molars fall together a little.	Illiterate. Alternating convergent squint. Glasses ordered for hypermetropia.
Twins .	—	—	—	—	Health at birth; died soon after.
Noel .	3	Defective.	Present in both eyes.	Milk teeth.	Convergent concomitant squint.

Wassermann reactions of all children and of both parents were strongly positive. There was no history of miscarriages. No stigmata of syphilis were present other than those shown in teeth.

* H. means Hutchinson's; and M., Moon's teeth.

† H/M means hand movements as regards ability to see.

With Cecil, the right opacity was at two distinct levels: one anteriorly in the cortex, denser and upward with irregular "riders," nearly filling the dilated pupil; the posterior, thinner and irregular. The left opacity nearly filled a 3/4 dilated pupil and three layers of opacity, irregular masses with attempt at "rider" formation, were seen.

Christiana had a scorpion-shaped opacity in the right lens, curling from upper to lower part—at different levels. The left eye had coral-shaped masses in irregular star formation.

In Reginald the opacities were central and antero-posterior.

Except in the case of the parents, the absolute visual acuity is given.

two cases of severe sudden involvement of both eyes in young women are recorded.

(1) P.P., æt. 18, out-patient dept., 21-6-32, complaining of visual failure of recent sudden onset. Vision was, R. 6/36; L. 6/24. Both fundi showed severe neuroretinitis with much retinal œdema and hæmorrhages.

She was immediately admitted and put on neo-salvarsan.

On July 8th, 1932, the vision had improved to 6/9 in each eye; and by August 12th it was 6/6, with fundus signs rapidly subsiding.

(2) M.M., æt. 30, complained on 8-11-32 that she went to bed five days previously with both eyes normal, and that when she awoke she was entirely unable to see out of the left. The right then became red, more so the next day and with pain. No light perception was present in the left eye; and there was severe neuroretinitis with disc edges totally obscured. The whole retina was swollen, œdematous and opaque looking.

In the right eye irido-cyclitis was present, but vision remained at 6/6. The blood Wassermann was strongly positive.

With local treatment and neo-salvarsan as an in-patient she steadily improved. On 2-12-32, she could perceive light in the left eye. She asked to be discharged at this stage, and never reported again.

This case shows a common syphilitic lesion affecting the anterior part of the uvea in one eye, and another type of luetic process, not uncommon in the West Indies, involving the posterior half of the other eyeball, in retina and optic nerve.

When a severe case of luetic irido-cyclitis has subsided, it is not rare to find in coloured persons that the choroid and retina of the same eye have been invaded.

Typical disseminated choroiditis, usually regarded in text-books as being due to syphilis, is very rarely seen in the West Indies.

A third case was recorded in 1934. B.M., a girl of East Indian parentage, aged 8 years, was brought to the Eye Clinic on 5-9-33, with a history of three weeks' sight defect. She had no perception of light, both pupils being fully dilated and inactive. Both fundi showed intense neuro-retinitis with flame-shaped hæmorrhages, and in the left eye there was irido-cyclitis as well. Anti-

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luetetic treatment was immediately commenced in hospital, and the blood W.R. was later found to be strongly positive.

One week after admission, the right pupil began to react sluggishly to light. On 29-9-33, her vision improved to 3/60 for each eye, and their condition showed steady improvement.

On 5-12-33, exactly three months after admission, visual acuity was restored to 6/9, each eye.

Some permanent whitish opacity remained in each retina with marginal disc changes.

CASES OF CORNEAL "DYSTROPHY" IN WHICH THE BLOOD W.R. WAS POSITIVE

This group forms part of a series of cases, a full account of which is being prepared for later publication. In the great majority the patients have good general health and the Wassermann test is negative. The condition appears to be of indefinite etiology, and has not been previously described as far as available records show. No signs of inflammatory changes were ever present, the globes remaining continuously white. Only seven 1934 cases are here given out of a total of 33 cases.

(1) F., æt. 22, V.: R. 2/60; L. 2/60. Glare troublesome. Sees better at night. Epithelial corneal change with very fine greyish growth-on-culture-plate appearance, seen with $\times 10$ loupe. W.R. strongly positive. After 7 N.A.B. and 6 Bi. injs., in four months, V. 6/24; 6/18.

Recovery of epithelium after five months in all, with V. 6/9; 6/9.

(2) F., æt. 32. V.: R. 6/60; L. 2/60. R. partial simple optic atrophy. L. central corneal pupillary area denuded of epithelium and staining well with fluorescein. W.R. strongly positive. 5 N.A.B. in nine months—irregular attendance. Corneal condition never varied during twelve months. Lesion healed after permanent partial tarsorrhaphy. Case unlike others.

(3) F., æt. 33. V.: R. 6/24; L. 6/60. More change L. corneal epithelium than R. W.R. positive. Numbness in legs. 8 N.A.B. in four months, and V. 6/18; 7/24, with corneæ improving.

(4) M., æt. 24. V.: R. 6/18; L. 6/18. W.R. strongly

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positive. Did not return to eye dept. Ovoid linear epithelial corneal punctate change.

(5) M., æt. 33. V.: R. 6/18; L. 6/12. Corneæ as above. 5 injs. in V.D. clinic 1931 for chancre. Visual failure one month. W.R. weakly positive. One inj. only after two months. No improvement. Was ill at home.

(6) M., æt. 41. V.: R. 2/60; L. 1/60. Linear corneal epithelial disturbance describing ovoid plan enclosing healthy area, over lower 2/3rds of pupil. Commencing optic atrophy. After 3 N.A.B. and 4 tryparsamide injs. in two months, V. 3/60; 3/60 and corneæ improving. To D.M.O. for Bi. injs.

(7) M., æt. 45. V.: R. 6/60; L. 1/60. Corneal change as in (6). Pallor of both optic nerves. No report at eye clinic.

All patients had paraffin alb. liq. locally, neutral-tinted shades, and cod-liver oil and bemax.

INTERSTITIAL KERATITIS

Year	Males	Females	Congenital Lues	Total Number
1932	5	4	3	9
1933	6	4	5	10
1934	1	1	Nil	2
			8	21

There were therefore only 8 cases of congenital interstitial keratitis in a total of 2,920 eye cases, seen in the period under review at San Fernando, 399 of which were cases of ocular syphilis.

In Port-of-Spain, during the five-year period ending April 30th, 1935, 19 cases of interstitial keratitis were seen among private patients. Of this number, 12 were cases of congenital syphilis; and the racial incidence of all cases was, Negro and mixed blooded coloured persons 12, Portuguese 3, Venezuelan 2, Chinese 1, impure European 1. All were West Indian born.

In a mulatto girl of 13 the right eye became affected in February, 1931, and a corneo-scleral abscess resulted. It had to be enucleated. In spite of a course of injections of N.A.B. and mercury, the left eye showed evidence of the disease in very severe form in December, 1931, with

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threatened breaking down of tissue at the limbus above, and involvement of the sclera. Good recovery, however, resulted ; but a —3.0 D. cylinder lens at 165 degrees was needed for curvature error.

OPTIC NERVE CASES AT SAN FERNANDO IN 1934

Appendix 1 gives a full summary of these optic nerve cases and the attempts made to deal with them. It is proposed to continue a study of such cases for further publication.

They are grouped as follows :—

Clinical Type	Males	Females	Total	Blood W.R. investigated	
				Positive	Negative
(a) Retrobulbar neuritis .	9	12	21	12	4
(b) Partial optic atrophy .	8	5	13	5	1
(c) Simple atrophy, whole N.	7	5	12	4	2
(d) Papillitis	5	5	10	6	0
(e) Neuroretinitis . . .	2	8	10	6	0
(f) Optic atrophy with evidence of previous papillitis, neuroretinitis, or choroiditis	13	9	22	6	1
	44	44	88	39	8

In an address on the "Classification of the Optic Atrophies" at a meeting of the Royal Society of Medicine, Paton¹⁷ showed that the terms "primary" and "secondary" were misleading, as commonly applied ; and it is my practice to avoid using them.

In a private communication Dr. Traquair points out to me that syphilitic papillitis is related to the choroid and not to the nerve.

No case of optic atrophy has been seen at any time with symptoms truly pathognomonic of tabes, G.P.I., or of disseminate sclerosis.

In the course of this review, many of the different lesions of the eye met with in Trinidad, due to syphilis, have been mentioned. A few cases of sclerosing keratitis, scleritis, and of inflammatory pseudo-tumour of the orbit, associated with syphilis, have not been recorded. The

inflammatory pseudo-tumour of the orbit responded to treatment with mercury, pushed to salivation, after failure with N.A.B. to reduce the proptosis. Orbital periostitis causing proptosis, and due to syphilis, responds very promptly to N.A.B.

CONCLUDING NOTE—OCULAR SYPHILIS IN A
COSMOPOLITAN COMMUNITY

A few months after the eye department was established at San Fernando, the Resident Medical Officer in charge of the V.D. department told me that the number of coloured female patients attending for injections of N.A.B. and bismuth had almost trebled, while the number of male patients had also greatly increased.

In Trinidad, syphilitic eye disease is not as common among East Indian members of the population as among persons of pure African or mixed blood. That is perhaps due to the early marriage customs of the former. In Trinidad, when East Indians do contract the disease they usually suffer intensely as regards eye lesions.

It may sound strange to record that members of the Trinidad Chinese community seldom suffer from syphilitic eye disease.

When they do not marry members of their own race, the practice of marital relationship by the men with coloured women is regular, and full paternal responsibility is a happy feature.

Cases of syphilitic optic nerve disease occur almost exclusively among persons of pure or mixed African descent.

Members of the Portuguese community when they report with uveitis due to syphilis generally present other manifestations of the disease; and cases have been seen in which lesions were widespread and destructive.

Patients in the general wards of the Colonial Hospital suffering from meningo-vascular syphilis, interstitial syphilis, particularly those with limb paralyses, are from time to time observed to have the same optic nerve and retinal lesions as are commonly found in patients who come to the eye department with visual defects only.

The only case of tabes seen by me here, during seven years' general and five years' specialist practice, was in a Trinidad-born young man of pure European descent, who

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contracted the disease in Trinidad. At different periods third and sixth nerve paralyses affected both eyes. At one time paralysis of accommodation made the wearing of convex glasses necessary.

He was treated by Harrison in London, in 1933, with tryparsamide and malaria therapy, and he maintains regular treatment and employment.

Ocular syphilis is relatively uncommon in members of the Venezuelan community, among French Creoles, and in colonists from Great Britain and their descendants.

In the Appendix, statistics collected from the Trinidad and Tobago Colony Census of 1931 are given to show the different races among the population.

My thanks are due to Dr. K. S. Wise, Surgeon-General, Trinidad and Tobago, for permission to publish records from San Fernando Colonial Hospital.

APPENDIX

STATISTICS COLLECTED FROM COLONY CENSUS, 1931, TRINIDAD AND TOBAGO

<i>General Population</i>					412,783
Trinidad born					186,162
" " Indian parents.					112,428
" " Indian father					1,713
" " Indian mother.					805
Tobago born					29,976
					<hr/> 331,084
Born in other West Indian colonies					46,391
British colonists :					
United Kingdom					1,454
British North America					133
India					23,255
Naturalised and British subjects born in foreign countries					253
Natives of Foreign Countries and States					10,213
					<hr/> 412,783
Venezuelans numbered 4,244, and Foreign Chinese, including those British Guiana born, 2,291.					

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Population of town of San Fernando	14,287
Estimated population of San Fernando Hospital " area "	150,000

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