A REPORT ON AN ANALYSIS OF CASES AT AN EYE CLINIC IN LAGOS, NIGERIA*

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This report is based on personal experiences during ten months part-time work at an eye clinic at the African Hospital, Lagos, in 1939-40.

The majority of the cases were referred from the general outpatients as well as from a school clinic. The report consists of an analysis of the larger groups of diseases and was made to act as a guide for future work.

Some observations have been made on a few of the diseases commonly seen and the problems connected with them.

Statistics extracted from Annual Medical Reports for Nigeria have been added.

More than 1,200 cases attended the clinic but this report is based on 801 only, as it was impossible, in the time allotted for

<table>
<thead>
<tr>
<th></th>
<th>Africans</th>
<th>Europeans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Errors of Refraction</td>
<td>161</td>
<td>28</td>
</tr>
<tr>
<td>Presbyopia</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Conjunctival diseases</td>
<td>198</td>
<td>8</td>
</tr>
<tr>
<td>Cataract</td>
<td>57</td>
<td>1</td>
</tr>
<tr>
<td>Corneal diseases</td>
<td>47</td>
<td>5</td>
</tr>
<tr>
<td>Foreign bodies</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>Defective vision</td>
<td>161</td>
<td>1 Toxic amblyopia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 Asthenopia</td>
</tr>
</tbody>
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this work, to examine and keep records of all the patients who attended.

The cases not accounted for in the above table were various other conditions such as glaucoma, choroiditis, congenital anomalies etc. Conditions such as orbital cellulitis secondary to nasal sinusitis are not rare. At least six cases have been seen and I understand that infected sinuses are commonly found in Lagos during post-mortem examinations. The correlation of these factors has yet to be made. Chronic iridocyclitis—a few of these were seen—and in each there was dense vitreous haze. In nearly every disease complete investigation is called for and in many cases little help can be obtained from text-books. Great variations are seen in ophthalmoscopic appearance and the anomalies of pigmentation in the fundus need considerable experience for their correct determination. Numerical extractions from the European cases have been made for purposes of comparison.

Refractive errors.—Hypermetropia preponderates but the number of cases of myopia relative to the hypermetropia is not consonant with the statements appearing in text-books. Several of these state that myopia is rarely found in uncivilised or savage nations. The numerical representation of ametropia was:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypermetropia</td>
<td>61</td>
</tr>
<tr>
<td>Myopia</td>
<td>50</td>
</tr>
<tr>
<td>Astigmatism</td>
<td>50</td>
</tr>
</tbody>
</table>

(Records of the degree of astigmatism could not be accurately tabulated).

Only those whose refraction was measured by retinoscopy and whose vision could be improved by correcting the error were included in this table. When the refractive error was small and the loss of vision was disproportionately great the case was placed in the group "defective vision" which is dealt with later.

Conjunctival diseases.—The majority of the cases seen could be divided into three groups, trachoma, spring catarrh and purulent conjunctivitis, thus only the most serious acute and the chronic eye diseases were referred to the eye clinic; all the other cases were treated at the general out-patients. Phlyctenular conjunctivitis was rarely seen—?1 case.

Trachoma.—66 cases. In each case conjunctival smears were examined for rickettsia and 36 were found positive. Smears from controls (10) were also examined and all were negative. The figure for rickettsia bodies in smears from cases of trachoma varies from 25 per cent. to 100 per cent. (Duke-Elder). The higher figures being for untreated cases in young subjects. The figures for Lagos are therefore about average since most of the patients attending.
the clinic had been treated for years with European or native medicine and often with both. The smears were examined by Dr. E. C. Smith, Assistant Director of Laboratory Service, who reported the presence of the metachromatic type of "corps elementaire" as described by Foley and Parrot. Of interest from the clinical standpoint is the remarkable effect of sulphonamides on the disease. Two cases will serve as examples.

Case A1.—A male prisoner, aged 38 years, had "eye trouble" for two years. Having been treated for conjunctivitis for 5 months he was then referred to the eye clinic on July 31, 1939, with the following notes: "C/O eye trouble; watering of both eyes; persistent pain; cannot see well. Dull colour of both corneae. Has had treatment."

First seen on August 3, 1939. Trachoma—pannus + + corneal ulcers and chemosis of conjunctiva, lids oedematous—lacrimation + + rickettsia + +.

Streptocide prescribed 1 gramme t.d.s. After five days "result surprisingly good—no lacrimation, congestion of conjunctiva much less—swelling of lids diminished, cornea clearing."

The drug was continued for thirteen days; local treatment was then applied.

Case 2.—Female, aged 21 years. Trachoma—duration about one year. Laboratory report—"rickettsia + together with a heavy infection." A very severe case—pannus + + with ulcers; both eyes. Softened and swollen tarsal plates and unable to raise lids or open eyes. Lacrimation continuous. Photophobia marked.

August 15, 1939, admitted to hospital. Temperature 99.4° streptocide 2 tabs. t.d.s. for 10 days, also atropine. Temperature normal on the 4th day and remained normal thereafter.

The patient's own description is given as recorded by the African nurse in charge.

A2. 8wd. 2.—August 17, 1939.—Patient reports great mark of improvement: Tears discharge, very much lessen. Can tolerate light better than before. Headache and acute pain ceased.

August 18, 1939.—Patient slept well in the night with no headache.

August 19, 1939.—Slept well. Tears discharged stopped completely.

August 20, 1939.—Very pleased with herself. Slept well.

August 21, 1939.—Better sight than before.

August 22, 1939.—Still improving.

August 23, 1939.—Excepting that she can't open the eyes wide, otherwise, there is a very great improvement.

August 24, 1939.—Patient wishes to go home, condition still improving.

The rapid improvement shown in these two cases and in many
other cases was very striking and from my observations I consider that the sulphonamides do more than merely clear up a super-imposed infection. No investigation as to the bacterial flora of the conjunctival sac was possible in these cases but even where there were few clinical signs of secondary infection the drug had a good effect and was greatly appreciated by the patients. The effects of sulphonamides on the rickettsia bodies was not noted.

Apart from the loss of vision due to pannus and corneal ulceration the more severe sequelae of trachoma—entropion, trichiasis—were seldom seen. On the other hand I have been informed that entropion was frequently observed in the course of a sleeping sickness survey and that about 10 out of every 700 inhabitants of that part of Northern Nigeria suffered from this distressing condition.

Spring catarrh.—Two forms are seen about equally—bulbar and palpebral. The bulbar type in its mildest form is found as a faint circum-corneal hyperaemia. At a slightly later stage this circum-corneal area becomes infiltrated with pigment and takes a brownish tinge.

With each recurrence the epithelium at the limbus proliferates, becomes gelatinous looking and tends to spread inwards and become heaped-up over the corneal margin.

This proliferation may be localised or completely surround the cornea and is a constant feature in cases that have become chronic. The milky-white appearance described for this type in text-books has not been observed, possibly the pigmentation may account for this.

Palpebral type.—In the earliest stages there is a faint papillary hypertrophy at the edge of the convex border of the upper tarsal plate. As the disease progresses the roughened area extends downwards over the tarsal plate and also becomes more coarse in type.

In the more chronic cases the text-book description of "paving stone" or "cobble stone paving" due to the flattening of the papillae is seen. There is a milky-white membrane in this form which is typical; it may be picked up on a wooden applicator or swabbed away and the paving stone condition of the tarsal conjunctiva is then readily seen. This is the type which is apt to be confused with trachoma but pannus is never seen unless both diseases are present together; probably a not uncommon occurrence.

In the conjunctival smears taken for trachoma, eosinophiles were noted in 10 cases but in only two of these were rickettsia also found. I am not able to say now whether these were marked or mild clinical cases of trachoma.

Four out of 7 smears taken from cases of spring catarrh showed eosinophilia.
ANALYSIS OF CASES AT AN EYE CLINIC IN LAGOS

Foreign bodies.—The comparatively large number of cases referred to the clinic deserves some comment. In the main two reasons account for this:

(a) Claims for compensation frequently arise since many of these cases are due to injuries received at work. Foreign bodies are frequently missed at a busy out-patient department as suitable lighting and equipment are not always available.

(b) The severity of the injury. In several cases it was found that a splinter of wood had penetrated the globe. Wood-cutting with matchettes or axes is universal in Nigeria, so that injuries of this type probably occur frequently and many eyes must be lost irretrievably through this cause.

Keratitis.—Most of the cases were corneal ulcers and it has been observed that unless intensive treatment is started promptly the ulcer continues to extend, leading to perforation and often loss of an eye. Unless seen at the beginning of the disease these patients were all treated as in-patients. Lowered resistance, spring catarrh, a poor diet and concurrent diseases (helminths, malaria etc.) may account for the rapid extension of the ulcer. It is probable that a large number of the blind eyes that are commonly seen throughout Nigeria are due to this disease: Superficial punctate keratitis is not uncommon and it would be of interest to determine whether this is related to onchocerca volvulus or is the tropical epidemic type.11 No interstitial keratitis was seen.

Defective Vision—161 Cases

Under this heading is placed a large number of cases the aetiology of which is obscure.

It has been stated that of the 1,200 patients on the register 801 only had been investigated and diagnosed. It is probable that most of the remaining 399 would have been added to this section as all acute cases were given priority at the clinic. A large number of these patients were school children. From the nature of their complaint and as a result of the clinical findings three groups have been formed.

Group I. Those who complain that, after reading for half an hour or so, their eyes pain and they can do no more work. Visual acuity is normal and small print can be read but only after much encouragement by the doctor and apparent effort by the patient.

Group II. Those who complain that they are unable to see distant or near objects clearly. Visual acuity for distance and near types is subnormal in varying degrees but improves after the exhibition of a mydriatic.

Group III. Similar to group II but there is no improvement in visual acuity at the post-mydriatic test.
In dealing with this section the following conditions must be considered.

(a) Avitaminosis—pellagra.
(b) Asthenopia nervosa.
(c) Chronic conjunctivitis—spring catarrh.

The complexity of this entity coupled with the fact that comparatively little investigation of the subject has been made has given rise to a very gross misrepresentation of the facts.

It has been stated that many of these patients are malingerers or that they wish to obtain spectacles for pseudo-cosmetic purposes and out of a desire to imitate. Nothing is more certain than that these statements are incorrect, and being expressed as is frequently the case by responsible persons, they constitute a grave danger to the welfare of the community. The truth is that as a result the powerful propaganda of those to whom spectacles have been of benefit, and of advertisements, those who suffer from defective vision are confident that their sight can be improved by wearing spectacles. The tendency is to try to obtain this panacea by asking the physician to prescribe spectacles.

Group I. The symptoms of the patients in this group are common to chronic-conjunctivitis and asthenopia nervosa. Chronic conjunctivitis is commonly seen in the form of recurrent attacks of spring catarrh which leave a residual hyperplasia of the circumcorneal and tarsal conjunctiva. Angular stomatitis frequently occurs, and as it is an early sign of B-avitaminosis, all the patients in this group exhibiting this sign are liable to be classed as cases of B-avitaminosis or pellagra.

Asthenopia nervosa in school children appears to be common the world over.

Group II. The cases in this group would appear to be of the same type but of a more advanced stage than those in Group I. Having discovered that visual acuity is subnormal, examination with a mydriatic is the routine. Some cases will be found to have refractive errors, in others no appreciable error is found or perhaps a small astigmatic error.

At the post-mydriatic test it is frequently discovered that visual acuity has become normal. Cases have been seen where the acuity altered from 6/24 to 6/6, at the post-mydriatic test.

Is it possible that accommodative asthenopia has been added to the cause operating in Group I? Most African scholars have a real desire to study and may be seen attempting to read by the light of a street lamp. A great strain must be imposed in this way. The relief afforded by atropine and the enforced rest might account for the improvement in visual acuity.

Group III. The difference between this group and group II is that visual acuity does not improve after the rest enforced by
ANALYSIS OF CASES AT AN EYE CLINIC IN LAGOS

the mydriatic. The cause of the defective vision in this group has been ascribed by FitzGerald Moore to "vitamin B2 deficiency probably associated also with a toxin element in certain food-stuffs."\textsuperscript{12, 13, 14}

The cases in this group agree with the classical types of the syndrome which he has described. Some of the cases in the other groups may represent the earliest stage of this condition.

The difficulties of differentiating the causal factors is increased by the type and degree of recovery resulting from treatment with the B vitamins. In a number of FitzGerald Moore’s cases distant vision became normal while the improvement in near vision was not so marked. In this connection he has written "absolute cure is not possible—vision may improve to 6/6 but there is difficulty in sustained reading of small print.” This is a result of the atrophy of the macular fibres and in advanced cases there is a marked pallor of the temporal half of the optic disc.

The epithelial lesions which form part of the “syndrome” described by FitzGerald Moore were not as commonly seen at the clinic as might have been expected. Several factors may account for this.

(a) Most of the cases were referred and treatment by various drugs had already been given.

(b) A great deal of attention has been drawn to dietetics in the last ten years or so and its importance in this condition has been emphasised by articles in the lay press and by special reports.

(c) The education authorities are becoming dietetic-minded.

(d) The effects of treatment by marmite, yeast and/or a balanced diet are being realised.

(e) General educational uplift of the public.

With regard to (d) figures are appended to show the quantities of marmite and yeast prescribed in Lagos during the past four years and to this must be added an unknown quantity sold by commercial firms.

<table>
<thead>
<tr>
<th>Year</th>
<th>Yeast lbs.</th>
<th>Marmite lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1936</td>
<td>Nil</td>
<td>1,869</td>
</tr>
<tr>
<td>1937</td>
<td>150</td>
<td>347</td>
</tr>
<tr>
<td>1938</td>
<td>1,267</td>
<td>404</td>
</tr>
<tr>
<td>1939</td>
<td>1,274</td>
<td>160</td>
</tr>
</tbody>
</table>

It is probably correct to assume that most of these drugs have been issued to the school children who form the majority of the group now under consideration.

In 1938 when stationed at Warri on the Nigerian Coast the writer examined 787 school children for visual acuity and epithelial
lesions, e.g., the types connected with the syndrome mentioned above. The following results were obtained:

1. Ninety-seven or 12.3 per cent. had subnormal vision, i.e., less than 6/6 each eye.
2. One hundred and seventy-four or 22 per cent. had epithelial lesions.
3. Forty-nine had both epithelial lesions and defective vision — this means that 28 per cent. of cases with epithelial lesions suffered from defective vision.

In North Ceylon 19.8 per cent. of 1,497 children showed the characteristic mouth lesions.15, 16.

As a complete investigation of the causes of defective vision in the cases related above was not possible at the time no definite conclusion can therefore be drawn from these figures but they may prove of interest to future observers.

The following figures extracted from Annual Medical Reports for Nigeria give some indication of the extent of primary disease of the eye. Figures for the African Hospital, Lagos, but not including the school clinic are also appended:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Trachoma</th>
<th>Refract. Errors</th>
<th>Conjunctivitis</th>
<th>Lagos total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1935</td>
<td>13,536</td>
<td>217</td>
<td>329</td>
<td>9,942</td>
<td>1,040</td>
</tr>
<tr>
<td>1936</td>
<td>18,341</td>
<td>184</td>
<td>392</td>
<td>11,906</td>
<td>1,154</td>
</tr>
<tr>
<td>1937</td>
<td>19,805</td>
<td>137</td>
<td>294</td>
<td>13,824</td>
<td>1,029</td>
</tr>
<tr>
<td>1938</td>
<td>14,447</td>
<td>136</td>
<td>302</td>
<td>11,955</td>
<td>1,308</td>
</tr>
<tr>
<td>1939</td>
<td>18,885</td>
<td>201</td>
<td></td>
<td></td>
<td>1,266</td>
</tr>
</tbody>
</table>

In his foreword to the Annual Medical Report for 1938 Sir Rupert Briercliffe, Director of Medical Services, wrote: "Nigeria is a country offering much field of study, as yet unexplored for the specialist in every branch of science."

That the field of study for the ophthalmologist is great will be obvious from the observations detailed above. Many blind spots remain for the investigator of the future.

REFERENCES

A NOTE ON TWO CASES OF MEGALOCORNEA

BY

L. H. SAVIN

LONDON

ALTHOUGH over 80 cases of megalocornea are on record (Duke-Elder, 1938), cataract extractions in the condition are sufficiently rare to rank as unusual surgical procedures. It would seem worth while reporting other cases.

On September 16, 1941, I was asked by Dr. Bourne of Dulwich Hospital to see a man with very large eyes. He was aged 58 years, and was recovering from haemorrhage from a gastric ulcer. He had also had severe bleeding from piles. He complained that since the illness his vision had failed considerably. Previously, vision had been good, in fact, he had been an army driver in the 1914-18 Great War. On examination I found he had bilateral megalocornea. The corneas measured 14 mms. in the horizontal meridian, and were large and lustrous. Slit-lamp examination showed no folds or splits in Descemet's membrane. Each iris presented a somewhat atrophic appearance with a vertically oval pupil rather like that of a cat. There were very deep anterior chambers. The pupils reacted well to light and dilated widely with homatropine. The tension of the eyes was normal. Bilateral arcus senilis was present. (Figs. 1 and 2).

Both lenses showed cuneiform cortical lens opacities which effectually masked the fundus appearances. He could see hand movements, and projection of light was good in the left eye. In the right eye only the temporal half of the visual field was present. At this period the patient was still weak from haemorrhage from an ulcer.