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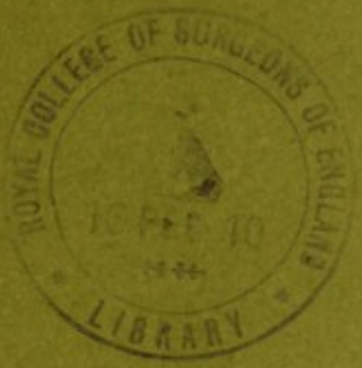

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THE RELIEF OF EYE DISEASE IN EGYPT, WITH SOME CONSIDERATION OF THE INCIDENCE OF BLINDNESS AND TRACHOMA.*

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EGYPT has been well-called the classic home of trachoma, the land of eye sufferers and the blind.

Trachoma.—Trachoma is practically universal among the middle and the poorer classes, as is instanced by my examination of the pupils of one of the Government Primary Schools, that of Tanta, the chief town of Gharbieh, the largest and most important province of Egypt, in May, 1909, where I found that 96·43 per cent. were affected with this form of conjunctivitis. To show that the sequelæ of the disease are not escaped, I may remark that out of 18,239 patients examined at three ophthalmic hospitals during the year 1908, 6,439 were cases of ingrowing eyelashes (trichiasis or entropion), practically in every case the result of trachoma.

Blindness.—As regards blindness, the census for 1907 shows that more than half a million persons are blind in one or both eyes.

Total enumerated population 11,189,978.

Blind in one eye 363,702 or 3.25 per cent.

Blind in both eyes 148,280 or 1.32 per cent.

Total number of blind 511,982 or 4.57 per cent.

These figures must be taken with the greatest reserve, for, as stated by the Director General of the Census, "Proposals have frequently been made to collect such data in European countries, but after consideration have, I believe, been almost invariably rejected, on the ground that the reticence which naturally exists to delare personal infirmities or infirmities of relations, would make the returns entirely valueless. If these objections are well-founded in countries where the standard of education is very much higher, and the prevalence of prejudice much less than in Egypt, they are emphasised in the case of the present statistics.

It is therefore probable, that the above figures are too low and that the percentages should rather approximate to those obtained at the hospitals over which I have control. During the last three years we have examined 84,133 patients, of whom 7.3 were found to be blind in one or both eyes. The amount of monocular blindness was 4·69 per cent. and of binocular blindness 2·61 per cent. The actual numbers are here given.

	Total No. of patients examined	Monocular		Binocular		Monocular and Binocular	
		No. of cases	Per cent.	No. of cases	Per cent.	No. of cases	Per cent.
1906	40,103	1,297	3·2	663	1·6	1,960	4·9
1907	24,416	1,450	5·9	697	2·8	2,147	8·7
1908	19,614	1,189	6 06	852	4·34	2,041	10·4
Total	84,133	3,936	4·69	2,212	2·61	6,148	7·3

These percentages applied to the enumerated population of Egypt would give :—

Blind in one eye	524,810
Blind in both eyes	292,058
Total number of blind	816,868

It is obvious that percentages obtained from hospital statistics applied to the general population of most countries may well be criticised as very much

*A communication made at the XVI International Medical Congress, Buda Pesth, September, 1909.

too high, but in Egypt where 96 per cent. of the population suffer from trachoma, and where acute ophthalmias are seasonally rife, it is probable that they are very little, if at all, too high.

The idea of there being a quarter of a million persons in Egypt blind in both eyes is striking; it is about the same number as that of the inhabitants of Tanta and its environs. Even if the census figure 148,280 be taken as correct, it is greater than the population of Assiout (the most important town of Upper Egypt) and its environs.

The only data I have for purposes of comparison from a western country are obtained from the census figures of 1900 in the United States of America, where the cases of blindness in one or both eyes number 85·2 per 100,000 of population as compared with 4,650 in Egypt. The coloured population of Idaho, the State most affected with blindness in U.S.A., has 590 per 100,000 blind in one or both eyes.

Egypt is therefore nine times as much affected with blindness as the coloured population of the most affected state and fifty-five times as much as the average in the United States.

	Egypt.	U.S.A.	U.S.A. Coloured population in most affected State—Idaho.
Average per 100,000.			
Blind in one eye ...	3,320	38	302
Blind in both eyes ...	1,330	46	288
Total blind	4,650	85	590

Prevalency of Ophthalmia.—It is the custom to say at the present time that blindness and acute ophthalmias are much less prevalent than they were fifteen years ago, but in the face of the statistics and estimates I have given above, it is difficult to believe that conditions can ever have been much worse than they are at the present time.

The actual amount of ophthalmia (using this word as a generic term for all diseases of the conjunctiva) is, in all probability, as great as it ever was.

The reason fewer severe cases are noted now than formerly may be because there actually is less acute disease in the country, or because owing tc changed conditions, the European has less opportunity of noting the severer cases.

Reasons for the diminution of acute forms of ophthalmia are somewhat difficult to find. It cannot be attributed to any wide-spread measures of sanitary reform, for as Lord Cromer* says "Sanitary reform has of course progressed less rapidly than improvements in the medical service. In the former case, the conservative instincts of the people, and their indifferences to sanitation, constitute an almost insuperable barrier to rapid progress."

The increase in the general prosperity of the mass of the Egyptians has not had as yet much real influence on their personal hygiene or mode of life.

In former times the European quarter of Cairo and of the other large towns was not differentiated from the native quarters as it now is, and travellers and others came more into contact with native life and had more opportunity of seeing people in the streets suffering from eye disease.

Both in Cairo and the tourist resorts there has been in recent years an effort to prevent the former all-pervading demand for "backsheesh" by beggars, many of whom exhibited their mutilations and diseases for the purpose of exciting the pity of the charitable. Amongst these beggars were many with discharging eyes, now seen no more as the result of the efforts of the police.

It may thus be that the diminution of acute forms of ophthalmia is more apparent than real.

If the improvement is real it can only be in the acute forms of ophthalmia, for the chronic forms are just as prevalent as they have ever been, as instanced

by 96 per cent. of trachoma at Tanta School. It has been suggested that this is due to a diminution of the virulence of the various organisms which cause purulent ophthalmia, an explanation not based on any evidence with which I am acquainted, although not necessarily to be rejected on that account.

The extraordinary density of the population in Egypt, 939 per square mile, greater than that of any European country (of which the most densely populated is Belgium with 588 per square mile), and only outdistanced by Bengal, is, and will always be, a barrier to the diminution of contagious ophthalmias

Ophthalmic Hospitals in Egpyt.—I came out to Egypt in 1903 at the request of the Egyptian Government, to organize and administer a travelling ophthalmic hospital and to train in ophthalmic surgery Egyptian surgeons attached to it. This hospital was maintained by the generosity of Sir Ernest Cassell, and was subsequently increased by the addition of a similar hospital, both under my general superintendence. These hospitals were organized somewhat on the lines of the pre-existing "ophthalmic flying columns" founded by Professor Belljarminow, which have done such exceedingly useful work in Russia. Each hospital consists of ten or twelve large Indian tents containing all the necessaries in the way of equipment and a complete set of ophthalmic instruments.

The staff consists of two Egyptian surgeons at each hospital working under my supervision, together with hospital attendants, servants, etc.

Ten or twelve in-patients are provided for, but the large majority of those who seek relief (including all trichiasis cases operated on) are treated as out-patients Very little reliance is placed on home-treatment by the patients themselves, and the large majority, 200 or 300 a day, attend daily until relieved or cured. Clinical work is carried on summer and winter for five or six hours daily, the rest of the day being employed in preparation for the next day's work.

Full clinical notes of every patient treated at the hospitals are kept.

Each camping ground is occupied for a period of about six months, at the end of which time work is transferred to some other place. This is not because, even after prolonged stay in a place, there is any diminution in the number of people applying for treatment, but because we consider it only just to give different provinces the benefit of ophthalmic treatment by the travelling hospital.

There was some doubt at the inception of the scheme as to its probable success, and as to the readiness of the fellahin to take advantage of it. All doubt was, however, soon set at rest by its immediate and complete success. There never was the smallest hesitation on the part of the people to visit the hospital for treatment, nor to submit themselves to whatever operation was advised. All patients are treated free of charge, and are given lotions, etc., when necessary, for use at home. By far the larger number of the patients have every appearance of poverty.

As an instance of the amount of work done, I may say that on June 12th, 1907, at Damanhour, the number of new patients treated was 45, the number of old patients was 412, and the number of incurable cases was 18. Sixty-five patients on this day applying for treatment were deferred owing to lack of time to treat them efficiently.

It is, indeed, by means of these travelling hospitals that interest in the means of affording ophthalmic relief has been aroused in the country; that more than £10,000 has been privately subscribed by the public for building purposes; and that the Government has been induced to spend £15,000 on building hospitals, and is giving at the present time more than £5,000 a year for their maintenance.

Three permanent hospitals are either built, or are in the course of construction, as well as the two travelling hospitals. All these are under my charge and are staffed by Egyptian surgeons whom I have trained.

My pupils and I have obtained a much clearer idea of the phases of the principal disease against which we have to contend in Egypt, namely, trachoma, since I adopted a system of classification of these phases.

Trachoma is a condition of the mucous membrane of the eyelids, in which gross changes occur, resulting in the formation of so-called granulations (with or without a papillary hypertrophy), which in favourable cases disappear, and are replaced by connective tissue. My classification of four stages is based on the comparative prominence of the three features—granulations, papillary hypertrophy, and connective tissue formation.

Trachoma I is the beginning of the disease, and trachoma IV is its end, when a cure has resulted (either naturally or by treatment).

Trachoma I is well described by Hourmouziadès: "One finds on the conjunctiva of the tarsus and of the superior *cul-de-sac*, especially at the two extremities of the tarsus, slight roughnesses, forming greyish or greyish-yellow islands, which are semi-transparent and almost avascular, with small blood-vessels converging towards them. These roughnesses generally resemble grains of sago. There may or may not be a mucous discharge."

This simple form lasts a variable time, sometimes as long as a year, but after the development to a certain degree of the granulations, the conjunctiva becomes more vulnerable, and complications with species of conjunctivitis other than trachoma usually occur.

This form may pass into trachoma II or, in favourable cases, or cases which have been treated, into trachoma III or IV.

Trachoma II is the stage in which granulations are numerous and large, or in which a papillary hypertrophy is present. It may be divided in the above sense into trachoma IIa and trachoma IIb.

Trachoma IIa. Gelatinous granules are present all over the tarsi and in the upper fornix. In some cases the individual granulations can no longer be distinguished, as they fuse into tumour-like masses or merge into a general infiltration, the tissue assuming a peculiar glassy gelatinous appearance.

Trachoma IIb. There is formation and hypertrophy of pseudo-papillæ consisting in red raspberry-like elevations which mask more or less the typical gelatinous granules. This papillary form, as it is called, is especially marked on the upper tarsus. It may easily be mistaken for spring catarrh and for a condition occurring as the result of any long-continued irritation or of a protracted attack of purulent ophthalmia in non-trachomatous eyes.

Trachoma III. In this stage cicatrization has definitely begun, and is more or less advanced. Islands of inflamed conjunctiva or of trachomatous granules are seen to be surrounded by a network of fine lines of connective tissue. It is in this stage that necrosis often results from the pressure of the shrinking connective tissue (post-trachomatous degeneration). The necrotic tissue may become calcareous. The cicatrization which is typical of this stage is generally supposed to be pathognomonic of trachoma; this statement, however, is not strictly true.

Trachoma IV is a condition in which there is a smooth conjunctiva, seamed by white lines of connective tissue. This is the stage of practically complete cicatrisation of the conjunctiva or of cured trachoma.

I am aware that there are many cases which cannot be definitely stated to belong to one or other category—for instance, a case may be between trachoma II and trachoma III, or between trachoma III and trachoma IV, but it is my experience that for teaching purposes this division of trachoma is a valuable means of differentiating between its various phases.