INCIDENCE AND CAUSES OF BLINDNESS IN THE MALTESE ISLANDS*

A SURVEY BASED ON THE EXAMINATION OF 638 BLIND PERSONS

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THE number of blind people in these islands has been recorded in the decennial Censuses held since 1881, but no study has been made of the incidence and causes of blindness, and the aim of the present survey is to fill this gap.

The small size of the islands and their population and the ease of access to the towns and villages have helped to make this survey thorough and complete.

As a register of the blind has never been instituted, a systematic search was necessary to trace all blind persons. Use was made of several sources of information:

- (1) The parish priests were asked to furnish lists of blind people, and the latter were subsequently examined in their own homes.
- (2) An examination was made of all the inmates in the various homes for the aged and for patients suffering from mental disease.
- (3) The records of all blind persons attending the out-patients' department at the Eye Hospital were studied for several years.

The survey was carried out during the 6 months January to June, 1958.

Prevalence of Blindness

Table I (opposite) shows the number of blind persons enumerated, and the rate of blindness per 100,000, according to decennial Censuses from 1881. No census was taken in 1931 and 1941.

The earlier figures indicate a steady decline in the frequency of blindness, but no ophthalmic specialist took part in the examination of the blind, the Census particulars being based on a declaration made by the patient or someone responsible for him. Blindness is a vague term, and a considerable number of patients do not consider themselves to be blind so long as they possess light perception. The census figures may therefore be considered to be too low and to represent only those who were completely blind with no perception of light.

* Received for publication May 4, 1959.

TABLE I
PREVALENCE OF BLINDNESS ACCORDING TO CENSUS REGISTRATION,
1881—1948, AND PRESENT SURVEY, 1958

Year	Total Number of Blind Persons			Rate per 100,000 Population
	Total	Male	Female	
1881	453	—	—	302
1891	483	237	276	292
1901	418	221	197	226
1911	345	178	167	163
1921	329	168	161	155
1948	375	202	173	124
1958	638	302	336	199

In the present survey, an attempt was made to trace all blind persons. The total of 638 for 1958 should be regarded as a maximum one, as very few could have been left out, and all persons were considered to be blind whose corrected vision was less than 3/60 and who could not find their way about in unfamiliar places.

The estimated population of the Maltese Islands in December 1957 was 320,019, and the rate of blindness per 100,000 therefore works out at 199.06. This proportion is almost the same as that obtaining in Great Britain (Sorsby, 1950, 1956). One may assume that in such a small island as Malta the estimate will be more accurate than in a large and populous country.

Degree of Blindness

Table II shows the degree of blindness in the 638 cases discovered. More than two-thirds (67.03 per cent.) of the blind population are blind in the full meaning of the term. The remaining one-third (32.96 per cent.) possess some degree of vision, but not enough to find their way about in unfamiliar places or to pursue a normal occupation.

TABLE II
DEGREES OF BLINDNESS

Degree of Visual Acuity	Number of Cases	Percentage of Total Blind Persons
No Perception of Light	189	29.67
Perception of Light Only	238	37.36
Hand Movements to Counting (under 3/60) Fingers	211	32.96
Total	638	100.0

Age Distribution

Table III shows that the frequency of blindness increases with age. The incidence rises sharply after the age of 50 and reaches a maximum in the 60—69 age group. The greatest number of blind people is to be found in the 60—79 age group; after age 80 there is a sharp decline.

As much as 84.42 per cent. of the blind are over the age of 50, and less than 4 per cent. are children (0—4 years 1.41 per cent. and 5—14 years 2.35 per cent.). The rate of blindness for the working years of life (15—60 years) is 29.35 per cent., 23.56 per cent. being found in the two decades 40—59 years.

TABLE III
AGE DISTRIBUTION OF BLIND POPULATION, BY SEX

Age Group (yrs)	Males	Females	Total No. of Cases	Percentage of Total Blind Persons
0—4	3	6	9	1.41
5—14	10	5	15	2.35
15—19	7	2	9	1.41
20—29	11	7	18	2.82
30—39	5	5	10	1.56
40—49	29	15	44	6.89
50—59	46	61	107	16.67
60—69	72	96	168	26.33
70—79	71	84	158	24.76
80—89	41	42	83	13.00
90 and Over	4	13	17	2.66
Total	302	336	638	100

Age at Onset

Apart from the cases due to congenital causes, one is entirely dependent on the recollection of the patient for information on the onset of blindness. When blindness is due to diabetes, the patient can generally give fairly accurate information, because of the relatively short time taken for complete loss of vision to occur. The majority of cases of blindness due to this cause occur in the age group above 50. Correct information is also obtained regarding blindness due to retinal detachment; the majority of these patients lost their sight between the ages of 30 and 40. In chronic glaucoma, since the sight is lost extremely slowly, the information obtained was very vague.

Sex Distribution

There were 302 males and 336 females. The excess of females over males, though partly related to the excess of females in the general population (females 166,817; males 153,202), can be explained by the heavier incidence of blindness caused by diabetes and cataract in females. On the other hand all the cases of blindness due to trauma are males.

Causes of Blindness

In the Past.—No statistical data are available. If one were to draw conclusions from the high incidence of trachoma in Malta in the past, this single cause must have been the predominant one. An examination of the records for the year 1925 of the Ophthalmic Sub-division at the Central Hospital shows that, out of 1,063 out-patients treated during that year, 573 (50·2 per cent.) were suffering from trachoma, and 173 in-patients (58·4 per cent.), out of 296 admitted to the wards during the same year, were treated for the complications and sequelae of trachoma. It is clear that trachoma was then the most important disease of the eyes.

At Present.—The significance of the different causes of blindness is shown in Table IV.

TABLE IV
CAUSES OF BLINDNESS, BY SEX, IN ORDER OF INCIDENCE

Cause		Males	Females	Total No. of Cases	Percentage of Total Blind Persons
Myopia		57	62	119	18·6
Cataract (Non-congenital) ..		45	70	115	18·0
Glaucoma		59	50	109	17·2
Diabetes		23	69	92	15·9
Trachoma		39	40	79	12·3
Optic Atrophy	Congenital ..	12	12	24	48 } 3·7
	Unknown Origin	12	4	16	
	Cerebral Tumour	5	3	8	
Cataract (Congenital)		13	7	20	3·1
Congenital Abnormality ..		9	6	15	2·3
Iritis and Iridocyclitis		8	5	13	2·0
Trauma		11	—	11	1·7
Leprosy		5	2	7	1·0
Vascular Disease		2	3	5	0·7
Retinitis Pigmentosa		2	2	4	0·6
Sympathetic Ophthalmitis ..		—	1	1	0·1
Total		302	336	638	100·0

Myopia, cataract, glaucoma, diabetes, and trachoma are the five main causes, and are responsible between them for 80·6 per cent. of all cases of

blindness, trachoma alone accounting for 12.3 per cent. Congenital causes account for 9.1 per cent. (congenital optic atrophy 3.7 per cent., congenital cataract 3.1 per cent., and congenital abnormalities 2.3 per cent.). The remaining 10 per cent. includes optic atrophy of unknown origin (2.5 per cent.), optic atrophy caused by cerebral tumour (1.2 per cent.), trauma (1.7 per cent.), iridocyclitis (2 per cent.), leprosy (1 per cent.), vascular disease (0.7 per cent.), retinitis pigmentosa (0.6 per cent.), and sympathetic ophthalmitis (0.1 per cent.).

No cases of blindness were found to be due to senile macular degeneration, ophthalmia neonatorum, or syphilis.

Different Causes in the Two Eyes.—In 33 cases (26 males and 7 females representing 5.1 per cent. of the total) the two eyes were blind from different causes. The excess of males is due to the number of men who had lost one eye through injury. The most important causes are trauma (seventeen cases) and iridocyclitis (thirteen cases). In two cases blindness was attributed to optic atrophy of unknown origin and in one case to chronic glaucoma.

In Children.—The number of children examined was 24, of which 9 were infants (0–4 years) and 15 of school age (5–14 years). Four children were mentally deficient. In all cases the blindness was congenital (14, 58.33 per cent. had congenital cataract, two had optic atrophy, three retinoblastoma, three microphthalmos, one aniridia, one glaucoma).

No cases of blindness were found to be due to retrolental fibroplasia, toxoplasmosis, or ophthalmia neonatorum.

About eleven of these children may be considered as suitable for education, and a school for the blind has been established in recent months.

Plans for Dealing with the Main Causes of Blindness in the Future

Trachoma.—This disease accounts for 12.3 per cent. of the total number of blind. Table V (opposite) shows that all patients blinded by trachoma are over 40 years of age, the majority being over 60 years of age. This blindness is the result of infection contracted between 40 and 50 years previously, when treatment was not sought or was ineffective. Blindness due to trachoma is not usually complete and most of the patients are left with some degree of vision.

In the years between the two world wars, trachoma was gradually brought under control. Suitable legislation and preventive and therapeutic measures, and more recently a higher standard of living, better sanitation, an efficient school medical service, and the advent of sulpha drugs and antibiotics have all combined very nearly to stamp out the infection. About thirty cases of asymptomatic pure trachoma are still seen every year, but response to treatment by antibiotics such as Terramycin and Achromycin is very satisfactory, and sequelae are never reported.

In the course of a few years, when the patients who are now blind because of trachoma are dead, this disease will no longer figure as a cause of blindness.

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TABLE V
BLINDNESS FROM TRACHOMA IN 79 CASES, BY AGE, VISUAL ACUITY,
AND SEX

Distribution		No. of Cases	Percentage
Age Group (yrs)	0—39	0	0
	40—49	3	3·7
	50—59	7	8·8
	60—69	24	30·3
	70—79	33	41·7
	80—89	10	12·6
	90—100	2	2·5
	Total	79	100·0
Visual Acuity	No Perception of Light	9	11·3
	Perception of Light Only ..	19	24·0
	Hand Movements to Counting Fingers (Under 3/60)	51	64·5
	Total	79	100
Sex	Male	39	49·5
	Female	40	50·5
	Total	79	100

Myopia.—The structural changes associated with myopia—choroidal atrophy and retinal detachment—are responsible for the greatest number (eighteen per cent.) of cases of blindness in Malta.

Retinal detachment accounts for more than half of these cases, and the rest are due to degenerative choroidal changes in the macular region, which gradually lead to serious impairment of vision. Many patients suffering from retinal detachment were blind before the introduction of modern treatment, but ten have been treated surgically.

The exact incidence of myopia in the general population in Malta is not known, but judging by the number of cases seen in the out-patient clinics it is fairly high.

Cataract.—The majority of cases of cataract are remediable, but surgery is not possible in all cases because of the age of the patient. 62 per cent. of patients who are blind because of cataract are over 70 years old, and are reluctant to be operated upon. About 36·5 per cent. are suitable for operation and it is to be hoped that eventually they will cease to be classed as blind persons.

There is a strong popular belief that a patient must be completely blind before the operation is carried out, but modern surgical technique allows of early operation, before senility and sickness set in.

Glaucoma.—This is the third major cause of blindness. In 95 per cent. of cases it is of the chronic insidious type; in most of these cases the patient has been under the impression that his poor sight was due to cataract and that complete blindness was necessary before treatment could be given. Only twenty cases—18·3 per cent.—have been operated upon in one or both eyes.

Early detection followed by treatment will possibly lead to a reduction of the number of persons who are blind from this cause. Much can be done by making the family doctor aware of the possibility and dangers of glaucoma, and also by informing the public on this subject by means of newspapers and the radio.

Diabetes.—No figures are available of the incidence of diabetes in the general population in Malta, but it is known to be very high. The use of insulin has prolonged the life of these patients and the incidence of diabetic retinopathy leading to blindness has increased very considerably.

Table VI shows that over 75 per cent. of the diabetic blind are to be found

TABLE VI
BLINDNESS FROM DIABETES IN 92 CASES, BY AGE, VISUAL ACUITY,
AND SEX

	Distribution	No. of Cases	Percentage
Age Group (yrs)	0—39	0	0
	40—49	7	7·6
	50—59	24	25·0
	60—69	46	50·0
	70—79	14	15·2
	80—89	1	1·0
	Total	92	100
Visual Acuity	No Perception of Light	16	17·3
	Perception of Light Only ..	50	54·3
	Hand Movements to Counting Fingers (Under 3/60)	26	28·2
	Total	92	100
Sex	Male	23	25
	Female	69	75
	Total	92	100

in the 50–69 age group. The sharp fall in the 70–79 age group suggests that the diabetic soon dies after the onset of blindness. The incidence of blindness due to diabetes is three times greater in females than in males.

With few exceptions, the patients' history has shown that the duration of the disease is closely related to the incidence of blindness. Treatment has generally been irregular; the diet has not been adhered to and the use of insulin has often been haphazard or non-existent.

Cooperation between patient, physician, and ophthalmologist in establishing the proper management and consistent treatment of diabetes will no doubt prevent or limit the ocular lesions due to diabetes.

Leprosy.—There are about 150 lepers in Malta, in whom ocular complications such as iritis or iridocyclitis are common. Seven patients are known to be blind. Cortisone drops and ointment have proved invaluable in preventing blindness from this cause.

Summary

The blind population of the Maltese Islands has been traced and examined. The blindness rate is 199.06 per 100,000 population. The incidence, causes, and future outlook are discussed.

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