

## Leprosy in Uganda

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*General Distribution.*—Investigation of incidence of leprosy in Uganda, which has been undertaken by Government, largely through the instigation of the British Empire Leprosy Relief Association, has shown that the most heavily infected districts comprise Teso and Busoga in the Eastern Province, and Kigezi in the Western Province. Kigezi lies in the extreme South-West of the Uganda Protectorate, where the latter borders on the Congo and Ruanda. Four hundred miles separate Kigezi from Teso and Busoga; the country lying between, consisting of the kingdoms of Buganda and Ankole, are comparatively free from this disease.

Busoga has a comparatively high temperature, heavy rainfall, and is mostly under 4,000 feet above sea-level. Kigezi, on the other hand, is mostly mountainous country, 6,000—8,000 feet above sea-level, and has a moderate rainfall, and temperate climate. The natives of Busoga live mostly on bananas, while in Kigezi their staple foods are peas and grain. Climatic conditions, therefore, and the food of these tribes seem to bear no causal relationship with the distribution of leprosy, as far as Uganda is concerned. Moreover, although the natives of Busoga are not particularly vigorous, those in Kigezi are very hard-working agriculturalists and are of fine physique.

The leprosy incidence in Kigezi is possibly about eight per mille. And, as will be gathered from accompanying statistics, 21.5 per cent. of these are nodular C.3. cases, indicating very heavy infection.

### NATIVE ATTITUDE TO LEPROSY.

In Kigezi the natives employ no special segregation. A man suffering from leprosy will continue to live with his wife, or wives and children, usually in course of time infecting the whole family. A healthy man will continue to live with his leprous wife unless he is wealthy and has other wives, when she may be sent away.

A woman driven from home on account of advanced leprosy will either be adopted by a poor man needing a wife or will become a vagrant, a danger to all whom she visits. The last state of these vagrant cases is very wretched. They are often found living in the bush or in some abandoned hut. They steal food where they can get it and finally die of jiggers and starvation. Occasionally leprous

members of the family may be given a separate hut to live in, and be fed by pitying relatives.

Until recently, when the propaganda of the last three years has begun to take effect, leprosy, being a slowly progressing disease, was little feared or shunned, and was certainly increasing rapidly. I have found some villages in which most of the inhabitants were infected.

#### EUROPEAN METHODS OF DEALING WITH LEPROSY.

All the usual methods of tackling this problem have been tried in Uganda in recent years except compulsory segregation and treatment.

(1) *Quarantine Camps*.—These have been tried by government at various centres and have housed quite a number of down-and-out cases of leprosy at different times. They were placed in charge of native orderlies, and owing to distance could not be adequately supervised by Medical Officers so as to make the necessary treatment really effective.

(2) *Permanent residential treatment in hospitals*.—Although by this method the latest treatment can be carried out in a thoroughly satisfactory manner and a great deal of suffering removed, yet clearly only a few can be treated in this way owing to the expense and the accommodation available being limited. Dr. Wiggins used this method in Kapiri Hospital in Teso, where he treated over a hundred advanced patients as in-patients for several years. I found in Kigezi that the tendency was for the most advanced cases, owing to their need of dressings, etc., to come and fill up all available beds to the exclusion of the early more hopeful cases. Moreover, continuity in treatment was frequently interrupted by prolonged visits to their friends and relatives.

(3) *Treatment as out-patients at county dispensaries*.—This method, so strongly advocated by authorities in India, has been extensively tried by Dr. Wiggins; and in his able hands met with a considerable amount of success so long as pressure could be applied by the chiefs to ensure regular attendance. Whether cases in large numbers will continue to attend at these dispensaries for any length of time is open to doubt; involving as it does a tiring journey to the centre every week and a still more tiring journey home again after the injections. Certainly in the mountainous country of Kigezi such arduous and frequent journeys are quite beyond the ability of the average patient. It is doubtful if sufferers attend, except occasionally, the numerous county dispensaries dotted about the Protec-

torate, although these dispensaries are well situated for the purpose.

(4) *The voluntary leprosy colony.*—This, I venture to think, is the method most suitable to the conditions and African temperament. We have been trying it for the last two years in Kigezi, and it has met with almost instant success. The general plan is as follows :—

(a) Suitable unoccupied land is selected. It should be separated from the rest of the community by natural features such as hills, rivers, or lake water.

(b) On the selected site a central hospital, school and staff buildings are erected, which should be designed to cope with the need of a large leprosy colony.

(c) Model native villages should be laid out radiating from the centre, having good cultivatable land for each hut.

(d) Families of those suffering from leprosy, and individuals, must then be induced to migrate to these model villages, where being near to the central hospital, treatment can be carried out under skilled observation with the minimum of inconvenience to the sufferers.

#### ADVANTAGES OF THE COLONY METHOD.

The advantages of this method over others for this country will become apparent if we consider the following points :—

(1) *The advantages to the community* are as follow—

(a) Leprous families and individuals withdraw themselves from the healthy population, the spread of the disease being thereby prevented.

(b) The cost to the community of treating leprosy is reduced to a minimum, because the migrated cases in the colony, instead of being permanently fed at public expense as pertains in hospitals, cultivate their own food and become more or less self-supporting within six months.

(2) *Administrative advantages.*—All patients in the colony can be treated under careful observation, and accurate statistics can be kept showing progress of cases and success or otherwise of treatment. Moreover, homes can easily be visited, the lives and habits of the inmates regulated, and schooling provided with economy of central staff.

(3) *Advantages to the patients themselves.*—Home life is not broken up, but the sufferer lives in his own hut surrounded by his own garden and livestock. He is, therefore, content.

All the cases are near the means of treatment.

All are under the immediate care of trained European workers.

In the case of acute exacerbations of the disease, or where surgical intervention is necessary, these are close at hand.

(4) *Advantages to the children.*—All are agreed that, to save the children from infection and if infected, to treat disease in its early stages should be our chief purpose.

It is clearly only possible to separate the healthy children from the leprous where the colony method is employed. In the same way the earliest signs of the disease can be detected as they manifest themselves in the children actually under observation living in the colony.

#### THE BUNYONYI LEPROSY COLONY IN KIGEZI.

The Uganda Government have entrusted the Church Missionary Society with the responsibility of dealing with leprosy in Kigezi.

An unoccupied island on the beautiful Lake of Bunyonyi, with an additional acreage on the mainland, have been allotted to the colony. Here has been erected the central hospital complete with all necessary departments, and having ward accommodation for 50 of the more serious cases. The European staff house and huts for the native staff are built on a part of the Island apart from the four model villages which radiate from the central hospital. Fine airy school buildings have been erected for the children. The cost of building, staffing and maintenance of the colony, hospital and school are borne jointly by Friends of the Mission, the Uganda Government, B.E.L.R.A., and the Mission to Lepers.

The colony was opened at the beginning of 1931 with 25 cases transferred from a ward at Kigezi Mission Hospital. By the end of the year 100 additional patients had migrated to the colony and settled in happily. By the end of 1932 this number had more than doubled, and at the date of writing, two years and three months after its inauguration, 300 cases are resident in the colony, nearly 100 of whom are children.

There is a Local Council of elders to maintain order and good behaviour. The colony is run on a voluntary basis, but the friendly co-operation of Government authorities has been of the greatest assistance in enabling me to undertake surveys in different parts of the country, where by propaganda, patience and kindness the confidence of the

sufferers has been won and they have been persuaded to migrate to the colony.

#### TREATMENT.

The treatment adopted at the Lake Bunyonyi Leprosy Hospital may be summarised under four headings:—

(1) Treatment aimed at eradicating intercurrent diseases which lower their powers of combating the major infection. In this district yaws is the chief offender. All cases are given on arrival a course of bismuth potassium sodium tartrate injections. Other blood, skin and intestinal infections are dealt with as the case demands.

(2) Treatment aimed at improving the patient's hygiene and physique. This is largely a matter of inculcating habits of personal cleanliness by bathing parades and laundry work; and by encouraging regular exercise such as cultivation with the hoe, physical drill, football, etc.

(3) Treatment aimed at enlightening the spirit and mind whereby as new life is imparted by God to the soul, fresh hope, courage and strength pervade the whole personality.

(4) Treatment specially aimed at the leprous lesions, including injections, subcutaneous and intradermal, of hydnocarpus oil preparations. The preparations now most used are alepol and hydnocarpus oil with creosote. The effect of gradual increase of these injections is noted and all rises of temperature are recorded, modifications in dosages being controlled accordingly.

#### GENERAL STATISTICS FOR 1932.

<i>Total number of patients, 277.</i>				<i>Sexes and ages.</i>	
Adult males ...	120	Male children ...	53	Total males ...	173
Adult females...	72	Female children	32	Total females ...	104
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Total adults ...	192	Total children ...	85	Total ...	277

#### TYPES OF CASES.

<i>Pure Cutaneous.</i>			<i>Pure Nerve.</i>		
C.1 ...	45		N.1 ...	56	
C.2 ...	17		N.2 ...	15	
C.3 ...	23		N.3 ...	16	
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Total ...	85		Total ...	87	

#### *Mixed Types.*

C.1 N.1 ...	8	G.2 N.1 ...	6	C.3 N.1 ...	2
G.1 N.2 ...	27	C.2 N.2 ...	19	C.3 N.2 ...	20
C.1 N.3 ...	18	C.2 N.3 ...	1	C.3 N.3 ...	4
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Total ...	53	Total ...	26	Total ...	26

*Mixed types total* : 105.

*Total Nodular cases* : 49. =21.5%.

*Results of treatment* :

Arrested ...	...	6%
Improved ...	...	47%
Stationary ...	...	25%
Worse ...	...	18%
Died ...	...	4%

There are some authorities in tropical medicine who maintain that the improvement in cases treated, reported from so many institutions in recent years following the use of alepol and similar preparations, was not in fact due to the use of these injections but to the improved general treatment of leprosy brought about by the new outlook on this disease and the wholesale treatment of early cases. The truth or otherwise of this contention has never had an adequate opportunity of proof. The advent of hundreds of new untreated cases to the colony offered a unique opportunity of testing this question on a large scale and with an adequate number of controls. With this purpose in mind all cases admitted to the Bunyonyi colony were treated under categories 1, 2 and 3 (*vide* p. 155), whereas only a proportion received category 4 (alepol and hydnocreol). The results of these observations over a period of 12 months are appended below :—

#### PATIENTS TREATED WITH AND WITHOUT HYDNOCARPUS PREPARATIONS.

(1) Early Nerve Cases (N.1 and 2). No Nodular Cases included.

*Cases treated* : 113.

Treated with Hydnocreol : 11.

Treated with Alepol : 32.		{	Arrested ...	1	2%
Arrested ...	0		Improved	25	60%
Improved ...	7		Stationary	11	25%
Stationary	3		Worse ...	5	11%
Worse ...	1		Died ...	1	2%
Arrested ...	1		Total ... 43		
Improved ...	18				
Stationary	8				
Worse ...	4				
Died ...	1				

Treated without Hydnocarpus Oil preparations : 70.

Arrested ...	7	10%
Improved	47	67%
Stationary	9	13%
Worse	6	9%
Died	1	1%

Total 70

## (2) Advanced Nerve Cases (N.3) : 36.

Treated with Hydno reol : 16.

	Arrested ...	3	}	Arrested ...	3	...	12%
	Improved ...	5		Improved	9	...	36%
	Stationary	5		Stationary	8	...	32%
	Worse ...	3		Worse ...	4	...	16%
Treated with Alepol : 9.	Improved ...	4		Died ...	1	...	4%
	Stationary	3					
	Worse ...	1					
	Died ...	1					
			Total ...	25			

Treated without Hydnocarpus Oil Preparations : 11.

(Including cases too weak for injections.)

Improved	4	...	37%
Stationary	4	...	37%
Worse ...	2	...	17%
Died ...	1	...	9%
Total ...	11		

## (3) Cutaneous Cases (C.1 and 2) : 124.

Treated with Hydnoceol : 20

				Arrested ...	2					
				Improved ...	7					
				Stationary	6	{	Arrested ...	2	...	3%
				Worse ...	5		Improved	27	...	44%
Treated with Alepol : 41	Improved ...	20		Stationary	19		...	32%		
	Stationary	13		Worse ...	12		...	20%		
	Worse	7		Died ...	1		...	1%		
	Died ...	1								
				Total ...	61					

Treated without Hydnocarpus Oil preparations : 63

Arrested ...	2	...	3%
Improved	34	...	54%
Stationary	16	...	27%
Worse ...	10	...	15%
Died ...	1	...	1%
Total ...	63		

## (4) Nodular Cases (C.3) : 45

Treated with Hydnoceol : 9

Treated with Alepol : 13		{	Improved	4	...	18%
Improved ...	2		Stationary	8	...	36.5%
Stationary ...	2		Worse ...	8	...	36.5%
Worse ...	5		Died	2	...	9%
Improved ...	2		Total	22		
Stationary ...	6					
Worse ...	3					
Died ...	2					

Treated without Hydnocarpus Oil preparations (including cases too ill for injections): 23. Improved, 5, 22%; Stationary, 9, 38%; Worse, 6, 27%; Died, 3, 13%; Total, 23.

(5) Total cases treated with injections: 128.

Arrested, 4%. Stationary, 31%.

Improved, 43%. Worse, 19%. Died, 3%.

Without injections: 149. Arrested, 5%; Improved, 54%; Stationary, 23%; Worse, 14%; Died, 4%.

Careful study of these figures appears to suggest that no demonstrable improvement can be attributed to the use of hydnocarpus oil preparations in the treatment of leprosy.

It is true that a large number of cases appreciate the injections, ask for them, and feel the better for them. And we ourselves have used them for ten years with apparent benefit, and propose to continue in cases willing to receive them. At the same time these figures have rather shaken one's faith in these preparations.

In this connection the following questions seem to demand an answer:—

(1) Why do so many cases feel better for the injections? Partly perhaps because the African has the profoundest faith in all medicines given by injections, and the local pain and general reaction resulting therefrom is regarded by them as indicating the efficacy of the medicine given?

(2) Why did we when treating a limited number of cases attribute improvement to these injections?

Possibly because leprosy is a disease which is prone to periods of improvement alternating with relapses, and our results were not checked by a sufficiently large number of controls?

(3) Is it possible that the strain of leprosy found in Uganda is less susceptible to the influence of hydnocarpus oil than strains of leprosy met with in the East? And is it possible that the African does not react so favourably to the exhibition of hydnocarpus oil as do the Indian and Chinese?

The general statistics of results of treatment in the colony as a whole appear to be very encouraging, more than half the cases showing improvement or arrest of the disease.

The general cheerfulness and contentment of the colonists and their growing numbers seem to suggest that we have hit on the method of dealing with leprosy best suited to the African mentality and outlook, and which is reasonably economical in outlay and maintenance in relation to the numbers treated and the benefit to the community as a whole.