UGANDA

BUNYONYI LAKE SETTLEMENT

I arrived, in company with Mr. Edgar, at Kabale, headquarters of the Kigezi District, on May 16th. The Kigezi District forms the extreme S.W. corner of Uganda. On the following day Dr. Boase motored us to Bunyonyi Lake, where we visited the leper island of the C.M.S. in company with Dr. Symonds. We were shown round by Miss Gardner, the sister-in-charge, and Miss Nash, in charge of school work.

Site. The leper settlement is beautifully situated on an irregularly shaped island in the lake. About the middle of the island is the hospital on the crest of a ridge, behind which the creche for non-leper children stands on a separate hill. At the east end of the island is the school, and between it and the hospital on another hill is the residence of the European staff. There are three promontories extending northwards, and two southwards. The huts of the patients are placed along paths which crown the main part of the island and its promontories. The rest of the land is cultivated by the patients and their families, as is also a certain area on the mainland.

Patients. According to the report of 1937 there are 547 resident on the island. Of these 469 are lepers; 12 are non-leprous adults living in leper houses; 32 are infants living in leper homes because they are "under creche age"; 34 are children in the creche which have not shown signs of leprosy.

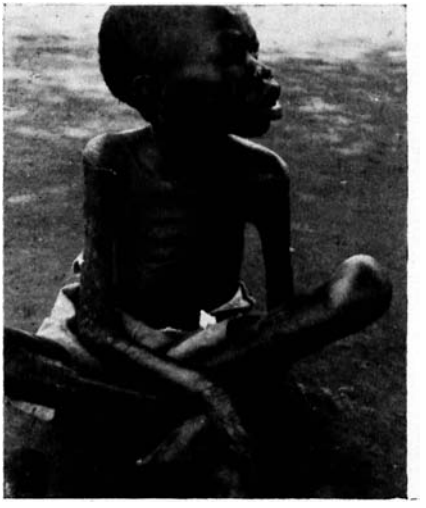
Of the 469 lepers there are 150 men, 136 women, and 183 children living in family huts.

Finance. In 1937 the expenditure on staff was about £700; on drugs and dressings £107; on general care of the lepers and food a little over £150; on buildings about £830; on repairs and up-keep £192. This expenditure was met from the following sources: Protectorate funds—including building grant—£1,260; Kigezi Administration £153; British Empire Leprosy Relief Association £50; Mission to Lepers £100; C.M.S. and other donations, etc., £417.

Types of Patients. On the 17th and 18th of May I examined 402 patients and divided them into five categories: (a) obviously open cases of the lepromatous type (L_2 and L_3); (b) diffuse leprous lesions suspicious of lepromatous nature, but requiring confirmation by bacteriological examination; (c) cases with distinct tuberculoid lesions; (d) flat lesions of the simple macular type, many of which were residual; (e) those who showed no definite

signs of active leprosy. The numbers in each of these categories were as follows:—

Types	Children	Male adults	Female adults	Totals.
L_2 and L_3	12	34	22	68 (17%)
Diffuse	7	15	15	37 (9%)
Tuberculoid	18	22	10	50 (12%)
Flat lesions	13	42	31	86 (21%)
No definite active signs	82	34	45	161 (40%)
Totals	132	147	123	402



Extreme form of leprosy and malnutrition in child (Nyenga).

The 132 children attend school together. The 82 children with no definite signs of leprosy (although a few of them have marks suspicious of leprosy) are allowed to mix freely with the 12 advanced nodular cases. This is permitted on the supposition that once the slightest signs of leprosy have appeared there is no danger of reinfection or superinfection. It is perhaps impossible to prove conclusively that this supposition is not correct, but there seems to be strong evidence against it. If we compare the sister disease, tuberculosis, it is generally held that the chief danger to the child is not from slight but from massive infections, and especially from superinfection. In leprosy the tuberculoid lesion has been considered to be a sign of increased, or at least of comparatively high, resistance or immunity. But these 82

children had no tuberculoid lesions. I therefore consider that contact of such cases with advanced lepromatous cases involves risk to the former, and that all children found to be bacteriologically positive on routine examination of the skin or nasal mucous membrane should be effectively isolated from the rest of the children.

Altogether there were 68 cases which could be considered as of a highly infectious nature, and 37 more were also considered possibly infectious, subject to bacteriological examination. Of the highly infectious cases 56 were adults, and many of these were the parents of the 82 children without definite signs of the disease. When I suggested that these children should be separated from their parents and lodged in a special hostel, I was met by the objection that in many cases the parents were dependent on the work of their children as they (the parents) were in a weak state. I believe however that many of the infectious patients are able to work, and that those who are infirm have generally a wife or a husband who is able to work. In this connection it is important to emphasise the fact that young children are more susceptible to leprosy infection than adults. If it is found impracticable for the reasons mentioned above to separate any children from infectious parents during the day, they might at least be separated at night; for it seems clear that infection is most likely to take place at night when promiscuous contact takes place at close quarters in dark huts.

I would suggest: (a) that all patients found bacteriologically positive be segregated in a separate promontory of the island;

(b) that their children be housed at night in a hostel, or with non-infectious families;

(c) that these children be allowed to come in contact with their infectious parents during the day only in instances of extreme necessity;

(d) that special help by way of food or assistance in cultivation be given to infectious parents when removal of children constitutes a difficulty.

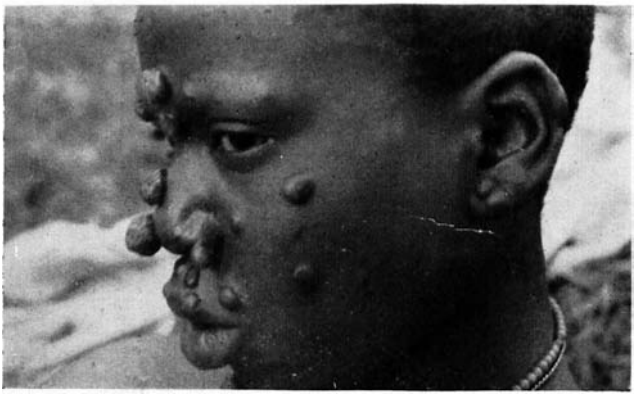
Treatment. I would suggest the following: (a) Cases should be carefully selected before being given any form of special injections. I think it would be wise not to give injections of chaulmoogra to patients who are in bad general health, or to those with soft, flabby muscles. Many of the patients require treatment for skin diseases and other complicating conditions.

(b) Few of the patients without definite signs of present active disease are likely to benefit by chaulmoogra treatment, and these number 161, or 40%, of the whole. Of these, the 82 children

showed little or no sign of present or past leprosy, but many of the adults showed deformities as the result of previous active disease.

(c) The 50 tuberculoid cases, constituting 12%, are those most likely to benefit by treatment, as also many of the cases with flat lesions and those with diffuse lesions. In these I would recommend injections of pure chaulmoogra oil given intramuscularly and intradermally.

(d) Many of the 68 lepromatous (L_2 and L_3) cases would benefit by similar injections, but great care would have to be exercised in grading the doses, and only those should be selected who are physically fit and are taking sufficient daily exercise.



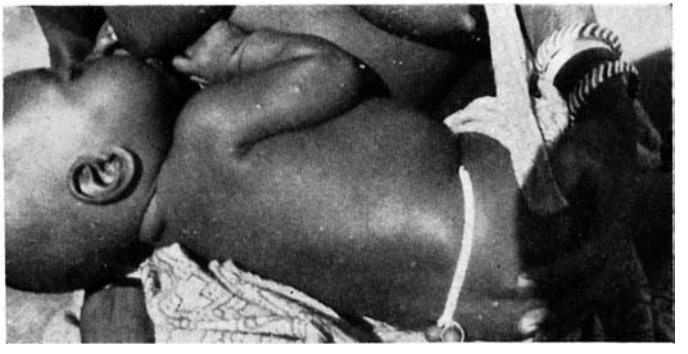
Extreme localisation of leproma in the form of pedunculated nodules (Bunyonyi).

(e) In an institution where economy is an important consideration expensive proprietary drugs are a drain on financial resources. At the recent International Leprosy Congress held in Egypt injections of pure chaulmoogra oil and esters prepared from that oil were recommended. Such oil can be obtained at a low price from India, and I would recommend its use.

(f) I would deprecate mass treatment. Every case should be studied carefully and treatment, both general and special, should be continued systematically. Above all, it is essential to win the co-operation of the patient. No good results can be hoped for where any element of compulsion enters in. As in tuberculosis, the chief emphasis should be laid on general treatment and improvement of the patient's physique, and special treatment should only be given when the patient is fully co-operating and leading an active, healthy life.

(g) I enquired into the diet of the patients and was informed that they took but little to supplement their staple diet of plantains,

Fish are abundant in the lake, and fowls, eggs, sheep are available. But to many of the patients these things are taboo, as is also milk. I was told that though many of the patients looked physically fit, they had very low resistance and easily became ill. It would seem as if many of the people were suffering from undernourishment although they live in a land of plenty. This can only be remedied by an educational campaign. Diet must form the basis of physical fitness, and therefore of the treatment of leprosy, and good results cannot be hoped for until these primitive taboos are overcome.



HOW LEPROSY IS SPREAD.
Notice leprosy on mother's arm and on child's loin. The widespread papules are due to scabies.

Creche. I visited the creche where some 34 children are cared for. Of these 6 were found to be children of infectious leper parents; the remainder were children of lepers with neural lesions. I examined these 6 children, but could find no signs of leprosy. The children in the creche are isolated from their parents when weaned, that is at about two years of age. In the case of parents with slight lesions or with only neural lesions, the contact of the children for the first two years of life may be fraught with little danger of infection. But the six children of open lepromatous cases must have received a severe infection. The reason for the delay in isolating the children is the unwillingness of the parents to part with them, and the difficulty of rearing the children apart from their parents. I think that an effort should be made to separate the children of open cases at birth. If this is done, and if all open cases are segregated in a special area of the island, then the chance of infection of children within the settlement should be very materially diminished.

Considerable care had been taken to keep the creche children separate from the leprous school children. I consider that if the

open lepromatous cases among the school children, some 12 to 19 in number, are removed there should be little danger in the creche children of school age attending the school and mixing with the other children, as the latter have either no signs of the disease, or only neural lesions. Many of the children, both in the school and in the creche, showed skin disorders probably partly due to avitaminosis. Possibly small doses of cod liver oil would be of benefit.

Both in the creche and in the settlement generally it is important to distinguish between open infectious cases and the

SAVE THE CHILDREN.
Children's creche on Lake Bunyonyi's leper island with the European and African staff of the Settlement. See the lake in the background.

other patients, who are of little or no danger as spreaders of infection. This will require a number of adjustments, but I consider that it is very important that these be carried out.

General Policy. Regarding the settlement itself and the general policy for dealing with leprosy in the Kigezi District, I have a few comments and suggestions to offer.

The site of the settlement has certain advantages and disadvantages. It is amongst beautiful surroundings, there is land for cultivation and abundant water is available. On the other hand, communication with Kabale is long and difficult. Leprosy is transmitted by close contact and is not of a highly infectious nature necessitating the banishment of lepers to a distant island. A site on the mainland nearer to Kabale might have been more convenient in many ways, without bringing the lepers into too close contact with healthy people.

I am told that the natives of Kigezi have little or no dread of leprosy, and that, therefore, lepers are not abhorred or driven out of their homes or villages, at least until deformities appear. In consequence, the lepromatous, highly infectious case has full opportunity for spreading infection. Apparently on this account a certain amount of compulsion has been used through the Chiefs in segregating the lepers and collecting them on to the island. While such a method gives quick initial results in removing at once a large proportion of the recognisable cases of leprosy from the community, it has the disadvantage that it makes it difficult to secure the full co-operation of the patients themselves. The leper naturally says: " You have brought me here against my will, you must therefore provide for me whether I work or not." But it is the general experience of those who have compared the voluntary with the free system that without the willing co-operation of the patient good treatment results are difficult to obtain, and under compulsion satisfactory discipline is hard to secure.

I understand that the settlement has now reached saturation point as far as land for cultivation is available. This might be remedied by discharging some of the adults in whom active signs of leprosy have been absent for a considerable time. This would make room for the admission of open lepromatous cases, if such exist in the district.

Comparing Bunyoni with other leper settlements, it appears to me that the community life of the lepers requires to be organised, occupation therapy initiated and the lepers taught how to lead a healthy life. The present European staff have their hands more than full and it would be difficult for them to undertake this essential side of settlement activity, which could be best initiated by a suitable European male lay-worker. This kind of work would make the settlement more attractive to the type of case requiring treatment and segregation.

I was unable to gather any recent reliable information as to the extent to which leprosy still exists in the district outside the settlement. A survey based upon examination of contacts with cases recently admitted to the settlement might give interesting results. If leprosy is found to be common an educative campaign might be conducted and infectious cases induced to enter the settlement voluntarily.

NYENGA LEPER SETTLEMENT

On May 27th, we visited the Nyenga Leper Settlement, in company with the sister-in-charge. Nyenga lies a few miles to the west of Jinja and in the east of the Buganda Province. The

settlement is supervised by the sisters of the Nkokonjeru Catholic Mission. The buildings and running expenses are supplied by the Native Administration, and by grants from the Protectorate Government through the Uganda Branch of the British Empire Leprosy Relief Association. The patients sleep in large dormitories and in round thatched huts, each of the latter accommodating four. The beds are composed of cement blocks and are vermin-proof. All the buildings are clean and tidy and the patients are very well looked after.

I examined 133 patients who may be classified as follows:—

	With deformity.	*Without deformity.*	*Total.*
Open lepromatous (L_3 and L_2) ...	11	18	29
Requiring bacteriological examination (possibly open lepromatous)	5	7	12
Tuberculoid	7	9	16
Flat Macules	33	31	64
No active signs	9	3	12
Total	65	68	133

Those patients who are able do a certain amount of work on garden and field plots. This side of the work needs further development. General treatment, and special treatment with chaulmoogra preparations, are given, and many of the patients show distinct signs of improvement. I suggested to the sisters some further lines of treatment.

The isolation of the 29 highly infectious cases and possibly some of the 12 patients in the second category is of value towards the prevention of the spread of leprosy outside the settlement. It is important, however, that further segregation of these dangerous cases within the settlement take place, or at least that such cases should not be allowed to live in the same buildings with slightly affected, non-infectious cases.

The settlement is visited periodically by the mission doctor. I am informed that leprosy is highly endemic in the eastern part of Buganda, and that some 200 of the school children are supposed to have the disease. A carefully conducted survey might show some interesting results.

BULUBA LEPER SETTLEMENT

On the afternoon of May 27th we visited the Buluba Leper Settlement in company with the Senior Medical Officer of the Eastern Province. The settlement is situated some 15 miles to the S.E. of Jinja in the Busoga District, and lies on the shores of Lake

Victoria. We again visited this settlement on the 28th and examined the patients. The care of the patients is entrusted to the sisters of the Catholic Mission at Nkokonjeru, and they have had 20 acres of land allotted to them on which are the administrative buildings and quarters of the staff along with dormitories for women and children. Adjoining land is allotted by the Administration to patients for cultivation on the basis of 4 acres per patient. The object of this is that the patients should support themselves by their cultivation. An allowance is made by the Administration to newly admitted patients during a period of six months, to maintain them until this land becomes productive. The period for allowance was originally three months, but as this was found insufficient the period has been prolonged.

The patients at present in the settlement are divided as follows:—

	Men	*Women*	*Children*	*Babies*	*Total*
On the mission land ...	—	17	31	3	51
On the allotted land	75	19	7	—	101
Totals	75	36	38	3	152

Of these, 30 are already independent through cultivation, and it is hoped that the majority of the remainder on the settlement will be independent by the end of the year. There are at present 14 tiled huts on the settlement, the rest of the patients living in mud-wattle-thatched houses. A tiled house has recently been erected to lodge new patients until huts can be built to accommodate them.

At the time of our visit 13 patients were absent on leave. Of the remainder I examined 152 men, women and children, who may be classified as follows, D indicating " deformed " and U indicating " undeformed ":

	Men		*Women*		*Children*		*Total*
	D	U	D	U	D	U	
Open lepromatous ... (L_2 and L_3)	2	8	3	6	0	1	20
Possibly open, requiring bacteriological examination	4	7	2	3	1	5	22
With tuberculoid lesions ...	5	8	3	6	4	5	31
With no active signs ...	3	8	2	1	1	8	23
With flat macules	14	12	6	1	1	4	38
Totals	28	43	16	17	7	23	134

There are thus 51 with deformities, but many of these are of lesser degree and do not preclude their working.

Two highly infectious women were found in the women's dormitory, and as there are three babies there it is highly important that these women be removed and that no other infectious cases be allowed to come in contact with these babies. Among the school children there was only one open case; he should be prevented from mixing with the other children.

Treatment is carried on with considerable skill by Sister Peter, and there was distinct evidence that many of the patients had made definite progress towards recovery. I cannot praise too highly the great devotion and talent with which the sisters, and especially Sister Peter, are carrying on this work in the absence of medical advice from a doctor. However, I was able to advise Sister Peter regarding the treatment of several of the patients.

Suggestions. The Buluba institution is a new experiment in the care of lepers and in the control of leprosy. It has some excellent qualities, but also some weak points and disadvantages.

Among the praiseworthy qualities should be mentioned the attempt to keep the patients in their natural surroundings, busy with farming and maintaining, as far as possible, their independence, while at the same time they are helped when necessary, especially at first. They are given medical aid and anti-leprosy treatment, and by their segregation sources of infection are removed from the general population.

Chief among the disadvantages is the dual form of control by the Administration and the Mission. The aim of the Mission is largely a desire to render physical and material help to a particularly unfortunate class of the community. It is felt, however, by the Administration that this object is sometimes prejudiced by a pre-occupation with the religious side of the Mission's activities.

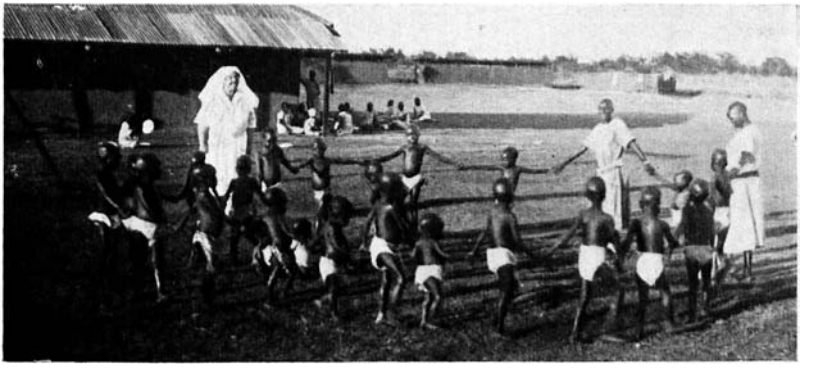
Leprosy is regarded by the Administration as one of many public health problems with which it is faced, and it is felt that other problems are of even more immediate importance than leprosy; they also consider that the ultimate control of leprosy is dependent on the general improvement of the education and hygienic condition of the people. They are therefore on their guard against spending a disproportionate amount on leper settlements. These and other divergencies of views have in the past caused clashes in the determination of detailed policy; but, as far as I was able to judge, many of the difficulties at issue are now in course of being satisfactorily settled.

It is difficult for the sisters to control the male patients. The chief has many other duties and, I am told, seldom visits the colony. The leper headman seems to have little personality and is not likely to be able to control the patients. I have suggested later in this report a method by which the social and occupationa

work of the colony might be organised and set on a satisfactory footing. This method would, I understand from the sisters, be welcomed by them.

KUMI CHILDREN'S HOME AND ONGINO SETTLEMENT

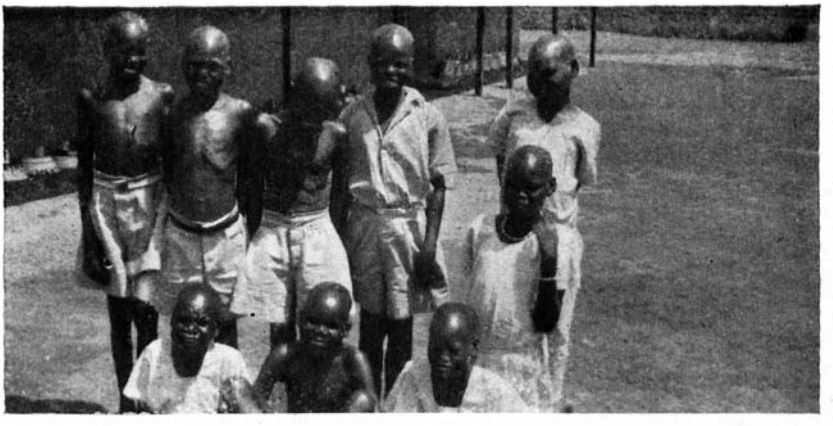
On May 31st I visited the Kumi Leper Home for Children, and was shown round by Miss Laing, the Superintendent. Here there are 315 leper children, of which 207 are boys and 108 girls. There are 26 children of various ages without signs of leprosy. The children attend school and are taught various industries such as tailoring, carpentry and building. Games, Scouts, Cubs and Girl Guides are well organised. The nourishment of the children



The healthy children's creche at Kumi with Miss Laing.

is carefully attended to, complicating diseases are treated, and intramuscular injections of chaulmoogra oil mixture are given; I suggested that in suitable cases intradermal injections would give quicker results. Almost all the children look strong and healthy and are making satisfactory progress towards recovery. There are a few advanced nodular cases who cannot be expected to recover, and these will be transferred to the Ongino settlement. All the children have been admitted voluntarily, and this and the genius of the Superintendent are chiefly responsible for the excellent results obtained. The buildings are simple, but adequate. They are arranged round a large quadrangle. There are separate dormitories for boys and girls, and the dormitories are again subdivided according to the types of cases.

Some of the children are being trained as nurses and others as teachers. At present Miss Laing, who is a missionary of the C.M.S. and a trained nurse, is the only European worker. She has an efficient African male assistant, and some of the lepers, trained in the institution, give valuable help in the dispensary and



Infectious cases at Kumi who must be segregated from the other children.

Kumi leper children's home—the open air school.

Ongino leper settlement—the tailoring class.

in the other sides of the work. I understand that the main running expense of the Children's Home is met by grants from the Mission to Lepers.

On the afternoon of May 31st, and again on the 4th of June, I visited the Ongino Leper Settlement in company with Miss Laing. Here are 400 lepers, all of whom, I am told, have come entirely voluntarily without any outside compulsion. Of these 300 are now self-supporting by their own agricultural labour, and 50 others recently admitted are being subsidised for the first six months. Only 50 of the patients are too weak or disabled to support themselves.

Some of the patients are still lodged in mud and wattle huts, but these huts are being replaced as quickly as possible by better houses of two types. The cheaper kind has cement floors and iron roofs, but the walls are built of mud. There are two adequately large rooms. There is also a kitchen, store and latrine. This type of house costs £12. There are twelve other houses similar in size, but built of cement blocks. These have also other improvements as compared with the mud houses. They cost £90 each. For their construction a grant of £900 was given by the Protectorate Government.

There is a large building for treatment and central administration. This is made of cement blocks and has an iron roof. It was built chiefly from a grant given by the British Empire Leprosy Relief Association. These buildings have been constructed by the patients under the supervision of the Lady Superintendent.

The chief difficulty in the settlement is the want of an adequate supply of water in the dry season. Water is collected from the roof in tanks but is not sufficient. Estimates for a bore-well costing thirty shillings and sixpence a foot have been received, and it is hoped to construct this with a part of the Native Administration grant, though this will involve delay in further house construction.

The discipline and morale of the patients is excellent. They are well nourished, and the physique of most of them is excellent. Many of them have already recovered, and even bad nodular cases are progressing favourably towards recovery. I was particularly struck with the good physique of partially deformed patients who, in spite of their deformity, are able to support themselves entirely by cultivation of their land.

Each patient is given at least three acres of land; and more when necessary. A herd of cattle and goats is kept, and meat is supplied to patients on payment either in money or in kind. The patients have been taught independence, and this reacts favourably on their physique and improves their chance of recovery.

The way in which patients are recruited to the settlement is

particularly interesting. The chiefs are occasionally asked by the District Commissioner to call lepers together to headquarters where they are addressed by Miss Laing, recovered lepers being demonstrated to show the effect of treatment. At both Kumi and Ongino out-patient clinics are held which are attended by some 250 patients. Some of these, who are unable to attend regularly because of distance, enter the settlement.

The children of non-infectious lepers are allowed to remain with their parents. Infectious lepers in the settlement are persuaded to place their children in the Kumi Children's Home.

Apart from the salary of the Superintendent, the running expenses of the settlement amount to £500 a year, which is met by a grant from the Native Administration. The money received is used most economically, the buildings being constructed at a surprisingly low cost, and the work of the settlement being done almost entirely by leper labour. This is carried out without compulsion, the lepers taking a pride in their own institution. Several grants have also been received for both institutions from the British Empire Leprosy Relief Association through its Uganda Branch.

Land allotment and discipline are carried out by the chief, who co-operates harmoniously with the Superintendent in this side of the work.

The Children's Home and the Settlement are able to help each other. The former supplies staff in the form of trained young men and women for working the Settlement, while the latter receives infectious cases from the Home and provides land for patients who have not recovered when they reach the age for leaving the Home.

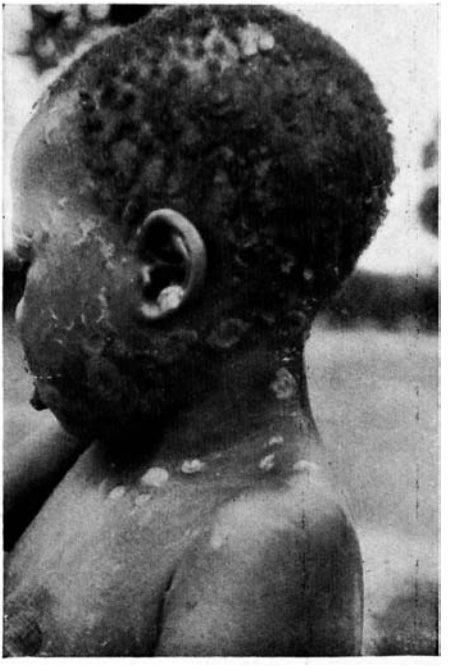
In my opinion, both institutions are run on the best possible lines; and the methods used are worthy of careful study by those concerned with leprosy relief and control.

THE LANGO DISTRICT

From Kumi and Ongino I went north, via Mbale and Soroti, to Lira, where I stayed with the District Medical Officer for a day and a half and visited several dispensaries with him. In two of the dispensaries the number of lepers on the registers was high, especially at Kaberamaido near Lake Kioga. In 1930 a survey of four counties in the Lango District showed 650 cases among 40,000 people, that is 1.7%. On this basis it is calculated that there may be 2,500 lepers in the district. Formerly there was a small leper camp with 36 patients at Aduku, but this was dissolved in 1932 on the recommendation of the District Medical Officer.

I consider it advisable that anti-leprosy work be undertaken in

this district. I have suggested to Canon Laurence, of the Church Missionary Society at Lira, that if the Native Administration are willing to give land, houses and support of patients, and the Church Missionary Society to sponsor the staff, the British Empire Leprosy Relief Association might possibly be able to supply a trained worker. As a preliminary step, however, to making a leper settlement, I consider that it would be better to begin with voluntary



Leprosy's younger sister, florid yaws.

out-patient treatment to ascertain whether lepers would attend for treatment without compulsion, as they do at Kumi and Ongino. Such out-patient treatment carried out by a sympathetic and expert leprosy worker might lead on naturally to founding a permanent leper settlement.

I would suggest that the Church Missionary Society should approach the British Empire Leprosy Relief Association with a request that they should supply a sanitary worker already experienced in leprosy work. If such a worker is available he might first be sent to the Bunyonyi Settlement where, as mentioned in the former part of this report, he could organise occupation therapy and the social side of the work. After this he could spend some time similarly organising this side of the work at Buluba. Later he could, if the Government, the Native Administration and

the Church Missionary Society were willing, assist with out-patient leper treatment at various centres in the Lango District with a view to the formation of a leper settlement near Lira. In this later work Miss Laing would be able to supply trained native assistants from her Children's Home who would act as interpreters and otherwise help the sanitary worker.

If such a worker were supplied under the British Empire

Transport in East Uganda with the gourd hood up.

Leprosy Relief Association—Toc H scheme he would work (as in Nigeria and elsewhere) under the British Empire Relief Association and its Uganda Branch, and under the auspices of the local missions, to which he would be attached for this special work.

Acknowledgments. I wish to express my gratitude to the Director of Medical Services for his welcome to Uganda, and for the comprehensive arrangements for my tour. I wish to thank the medical officers, missionaries and others who have generously supplied hospitality, transport and every facility towards making my visit interesting, and, I hope, of some use.

NOTE. In the original report there were notes on *treatment* and some general remarks. As these apply equally to other East African territories they are omitted here and are dealt with on pp. 100-102.