THE STORY OF KULUVA

E. H. WILLIAMS, M.R.C.P. (Lond.)
P. H. WILLIAMS, M.R.C.P. (Lond.)

Leprosy has at some time or another affected all the races of mankind, and the feeling of pity it has usually engendered has probably been more marked than that associated with any other disease. In the West Nile District of Uganda it was therefore only a matter of time before an effort was made to care for those who had become infected. This district lies to the North West of Uganda, being bounded to the East by the White Nile and to the South and West by the Belgian Congo, and to the North by the Sudan. The Western half of the district ranges between 3,500 and 5,000 feet in height, and the Eastern half in the Nile valley averages

about 2,500 feet. Nothing had been attempted in the pre-sulphone era, so it will be seen that the development of the work presented some unusual features.

In 1946 medical missionaries of the African Inland Mission already working in the West Nile District began to contemplate leprosy work, and to search for a suitable site. This was not easy to find as the population was relatively thick, and there was some local feeling against utilising land for this purpose. Eventually, however, through the kind offices of a senior chief a site was found some seven miles from Arua, the administrative centre of the district, and named Kuluva after the local hill which is a well known landmark. Due to the feeling already mentioned 200 acres only could be obtained, and the smallness of the area delayed official recognition in some quarters for some years. Nevertheless it was the very smallness of the area leased to the Mission which led to the conception of the most unique development of the work in the end.

In 1948 the lease for the land was granted and work was started immediately, demarcating boundaries, cutting roads and erecting necessary buildings. This was made possible only through the interest of the British Mission to Lepers.

During 1949 and the first half of 1950 one residence was completed and six cottages for the accommodation of patients, but the work was slowed up by the absence on furlough of two of the staff. It was in 1949 that the concept which later came to be the most unique feature of Kuluva came into being. The leprosy problem of the West Nile was quite unknown in its extent, and no proper survey had ever been undertaken. A preliminary investigation, although later proved to be exaggerated in its conclusions, suggested the problem was considerable. Local government officers immediately began to look to Kuluva to provide a solution, but the insufficiency of land leased to the A.I.M. was a difficulty. The possibility of enlarging the lease was considered but opposed on the grounds of being contrary to accepted land policy. As a result a local officer specifically asked if we would endeavour to make suggestions to get over the difficulty. After much thought and a rapid survey of the land surrounding the Mission area at Kuluva we made the following suggestion. It was that the African Local Government of the West Nile District should take over an area of up to 1,500 acres of land surrounding our Mission site, comprising a well watered fertile valley and a fairly scattered population, and that this land should then be settled with patients on a county village basis beginning with the uninhabited portion of the area, meanwhile warning the inhabitants of the other portion that they would be expected to move away in a few years. The whole project would be

administered by the African Local Government, treatment and missionary activities being the province of the Mission. The idea had two prime advantages. Firstly it gave a means of expression to the newly awakened consciousness of the African authorities of their responsibilities towards aiding the less fortunate of their peoples, and secondly it relieved the Mission of a great weight of administrative responsibility.

In September 1950 the first patients were admitted to the Mission settlement, but they were only 30 in number and scores had to be turned away. Many of these came from nearby, and it was realised that they could be given outpatient treatment, and so this was started, and with it came another idea, giving treatment by means of the intramuscular injection of D.D.S. in watery suspension. The details of this are given later in this article. Also, because of the paucity of accommodation, it was decided to admit wherever possible lepromatous cases only, and without their families. The sulphone treatment of leprosy has completely altered the prognosis of leprosy, so that settlements need no longer be considered as asylums, but as treatment centres, with a slow but definite intake and discharge rate. Discharged patients should have a home to go to, kept going by their families during their time in the treatment centre. Essential to the working of this idea is of course the allowing of fairly frequent leave of absence.

The years 1951 and 1952 saw an extensive building programme, as yet incomplete. The accommodation in the Mission Settlement is now 102, and there is also a small general hospital, together with residences for African and European staff. Mention should be made of generous government assistance in the carrying out of this programme in addition to the aid given by the Mission to Lepers and through other voluntary contributions.

The Kuluva terrain has proved very suitable. The 200 acres Mission area is roughly lozenge shaped, divided into two parts by a hill running transversely across. The larger portion is occupied by the Mission settlement and the smaller by the hospital and residences. A considerable amount of space is taken up by the land cultivated by the patients and African staff, and the whole site is convenient of access from the adjacent African Local Government scheme which will now be described in detail.

The West Nile District has four distinct tribes in its area, totalling some 300,000 people, its local Government leading up to a District Council and its executive officers being the various grades of chief. Administrative responsibility is being gradually transferred to this body in accordance with Protectorate policy and, as mentioned before, the organisation of a settlement at Kuluva under the

aegis of the Local Government is a natural out-come of the general development of responsibility. After about two years' consideration the idea gained acceptance, and a start was made in 1951 with the penetration of the area by a road. The work was begun on the erection of a Reception Camp of 9 buildings together with houses for resident staff, and this was completed in March 1952. A safari was then undertaken through two counties in the district by the District Medical Officer and a doctor from Kuluva to select the first entrants to the settlement, 48 in all. These consisted as far as possible of lepromatous cases together with tuberculoid cases best suited for treatment. There were a number of defections and attempts at gate crashing by unsuitable cases but these difficulties were surmounted in the end. Treatment was started immediately, by once weekly injection of D.D.S., and work was also begun on the county villages for this group of patients. The village was completed in September 1952 and the patients moved in to their permanent homes, three in a house, while another safari was undertaken to select 48 more patients from another county in the district, for admission to the Reception Camp. And so the process continues to be repeated at intervals of 5 months. Each village is surrounded by an area of arable land on which the patients grow food to supplement the basic ration that they receive. The building of villages on a county basis has been found to be of great importance. There are usually more than two patients in each of different clans represented and the preservation of the clan and community spirit goes far to secure orderly functioning of each village as well as providing a safeguard against untoward incidents. The settlement is under the aegis of the African Local Government, but the actual executive responsibility has come to devolve upon the District Team which consists of various Government Officers and Africans sitting under the chairmanship of the District Commissioner. One of the missionaries at Kuluva is co-opted. Various Government departments are therefore represented and so the project also has an afforestation scheme an Agricultural scheme, and a Health scheme. This latter is concerned with the protection of springs and the proper planning and erection of villages. The work has been in operation now for over a year and has proved a very well worth while experiment with considerable promise.

Recent Government circulars have referred to the Mission settlement at Kuluva as a Primary Centre and the Local Government settlement as a Secondary Centre. A diagrammatic representation of the whole idea is appended with this article.

Some description should be given of the particular mode of

usage of D.D.S., which has been a feature of the leprosy work of Kuluva. Whereas those residing in the Mission Primary Centre have received and continue to receive D.D.S., tablets by mouth in dosage of 800 mgms weekly, others have received intramuscular injections of a watery suspension of D.D.S. The group under treatment by mouth has served as a very valuable control for assessing the efficacy of the injection technique. This is now described in detail. In the first place the reasons for the adoption of this technique should be given.

(1) Although the injection craze in Africa is a thing to be greatly deprecated and resisted by all means, yet it had been found in our experience of treating large numbers of cases of Yaws by injecting a watery Bismuth suspension, that by attention to technique a great deal of time otherwise spent in counting out and dispensing tablets could be saved.

(2) It is common knowledge that there has been and still is a widespread black market in sulphonamides in Africa, a matter that must be regarded seriously. It seemed that history might very well repeat itself in regard to D.D.S. tablets. Injection offered a way of making the illicit sale of the drug a virtual impossibility.

(3) The primitive African is liable to regard all medicines as medicine suitable for treating anything in the way of sickness. Hence if the patient is given a number of tablets to take home with him, he is quite likely to use some or all of these tablets from time to time on his sick relatives, and the dosage he should be receiving will in consequence be less than was intended.

A trial therefore was made with out-patients in the first place by injecting once weekly, 200 mgms of D.D.S. in watery suspension. In a few months we were seeing results comparable with what we were seeing with the group receiving tablets by mouth, and we felt and continue to feel that the experiment was an unqualified success and justifies our continuing the methods. Lepromatous and tuberculoid cases benefit at the same rate as similar cases receiving the drug orally.

It is perhaps interesting and instructive to trace the history of the development of this suspension. Originally a supply of D.D.S. powder was obtained and dosage begun at 50 mgms a week increasing slowly to 200 mgms a week, and the latest scheme is to give out-patients 400 mgms every two weeks. The suspension of the D.D.S. powder in water was sustained with Pulv. Tragacanth, but it tended to be lumpy and blocked needles were quite frequent. Serum No. II needles have been used throughout. The supply of powder eventually ran out so tablets were crushed and made up in the same way. The result was slightly better, but owing to the

occurrence of considerable pain at the time of injection it was decided to use normal saline instead of water. Pain diminished considerably but the lump continued. Finally the Tragacanth was dispensed with entirely and this is the type of suspension we are using now. Lumps are very unusual, the suspension is well maintained and pain at the moment of injection and during the next twenty-four hours is minimal. No abscesses over thousands of injections can be recalled. It should be particularly noted that the presence of excipient in the tablets which are crushed appears to have no effect at all, certainly no deleterious effect. A further word as to the dispensing of the suspension. The tablets are first ground to a fine powder in a pestle and mortar. Saline is slowly added and the powder worked into a smooth paste, but we have found an easier and more effective way of making the suspension than this. The powder and saline are placed together in a household article known as a ' Quikmix ' which is a cup-like vessel with a tight fitting lid. Within the cup and lid are an arrangement of ridges and whorls which are designed thoroughly to mix the contents when the whole is shaken. The effect in producing a suspension of crushed D.D.S. tablets in saline is almost magical. The resultant suspension is then sterilised by boiling for 20 minutes in a water bath. We make a fresh supply once a week. The proportion of powder to saline is 200 mgms to 1.0 cc.

The method of injection is as follows. Racks of needles are sterilised by boiling and placed in flamed trays. The patients then stand in line in groups of five or ten with the buttocks bared. A team of three then begins to operate as follows. No. 1 walks down the row cleaning an appropriate area of buttock on each patient with a suitable cleansing agent. No. 2 follows with a rack of needles. He selects a needle and plunges it sharply into each patient's buttock in turn. This method of inserting a needle is completely painless. No. 3 follows with a 5 or 10 cc syringe loaded with D.D.S. suspension. He allows a moment after the insertion of each needle before attaching the syringe and injecting in order that blood will have time to drip from the needle if the point of this has by chance hit a vein. On completing the injection he withdraws the needle and drops it into a tray. It is possible by this means to inject 100 patients in 15 minutes, which is a substantial saving of time.

We see no reason to increase the dosage above 200 mgms per week or 400 mgms per two weeks as results seem to be sufficiently rapid. Undesirable reactions are quite uncommon, very much rarer than with 800 mgms per week by mouth, yet the results are as good. We have abandoned graded dosage and all patients (except children

who receive a half dose) receive 200 mgms per week from the beginning.

In the past two years some 900 persons have received treatment. The attendance of many however had been erratic and not a few had discontinued on their own accord. The alteration to a fortnightly regime has resulted in a more regular attendance and it is hoped that the introduction of appropriate propaganda will achieve even greater continuity.

That we have found the particular ideas and methods set out in this article effective does not mean to say that they would universally be so. Our experience is limited to the West Nile District of Uganda only, but as a story of a work with some unusual features it may be of interest to other leprosy workers.

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