

## OJI RIVER SETTLEMENT

### REPORT ON THE PATELLA-TENDON BELOW-KNEE PROSTHESES PROJECT

by W. F. ROSS,

*Area Superintendent, Ministry of Health, Rural Health Division,  
Oji River, via Enugu*

This project was undertaken during 1962 with the help of Mr. Thomas Forrest, a Voluntary Service Overseas volunteer, who was financed by a special grant from British Leprosy Relief Association. Materials and workshop for the project were provided by the Ministry of Health, Eastern Nigeria.

Prior to coming to Nigeria, Mr. Forrest spent three weeks at Queen Mary's Hospital Artificial Limbs Centre, Roehampton, where he worked in the experimental workshop under the guidance of Dr. Mackenzie.

A real start was not made with the limbs until April, by which time we had obtained all necessary materials and a copy of the manual published by the University of California. Since then, more than 30 limbs have been made for leprosy patients, including a pair of limbs for a patient with bilateral below-knee amputations. This particular patient had not walked for more than fifteen years. Her feet were completely destroyed, and her only means of locomotion was crawling with the aid of a stool.

A few of the limbs have had to be modified following fitting, as they caused friction blisters, but the majority of the patients have been able to wear the limb as made, and have been walking well within ten days of receiving it.

We have very much simplified the construction of the limb from the instructions laid down in the University of California manual, and have used cotton stockinet only as the filler in socket and shin. This has a disadvantage that when either part is machined, it leaves a slightly rough edge, but makes for a very much simpler supply situation. Cotton stockinet has been found easy to work with, and used in six or seven layers is of adequate strength, even for the biggest amputee. We have found that although it is possible to fit a prostheses to a below-knee stump as short as four inches, it is easier to fit the longer stumps and re-education of the patient is easiest also, when the stump is as long as possible. We have also used, in one instance, leather cloth instead of horsehide to line the socket. This appears to have many advantages in humid climates and we have been prevented from fitting all our patients with leather cloth only because of delay in obtaining suitable supplies of this material.



We have not yet been able to obtain an alignment device, and have had to align the socket and the shin by eye. This seems to be a perfectly satisfactory procedure. The earlier limbs were all fitted with a peg leg, but later, patients have had a modification of the 'Hanger' foot made at our own workshops. This is not strictly necessary, and we feel that the patients walk better with the peg leg than with the foot; but for aesthetic reasons, the patients very much prefer the foot.

Two Nigerians were trained by Mr. Forrest in making limbs and for the last three months of his visit, when he was engaged part of the time on other projects, they carried on with only general supervision.

We are satisfied:—

1. That the patebear limb is suitable for fitting to leprosy patients in tropical countries.
2. That very good limbs can be made with simple equipment by locally trained workers.
3. That the cost of the limbs compares extremely favourably with the cost of standard type below-knee prostheses.

The limbs are fully described in the manual called 'The Patella-Tendon-Bearing Below-Knee Protheses'. Authors: C. W. Radcliffe and J. Fort, published by University of California Press, Berkley, California. No one should attempt to make these limbs without first obtaining the manual.

We shall be pleased to supply notes on the modification made on the limb at Oji River and also a list of essential materials and sources of supply to anyone who wishes.