within contact range of that leper. It is also unfortunately true that in many places the conscience and imagination of the community have, as yet, been insufficiently aroused to the essential tragedy of this needless inoculation of children.

In this issue, by the courtesy of Dr. Lowe, we reprint an article, "Comments on the History of Leprosy" from Leprosy in India, January 1943. We feel that this historical study merits the careful attention of those who may have missed it through the restrictions of its original wartime publication.

In conclusion we present the following message to our readers from Dr. Ernest Muir:

In retiring from the Editorship of Leprosy Review I am glad to be able to hand over the task to Dr. Gordon Ryrie, my successor as Editor and Medical Secretary of BELRA.

Dr. Ryrie has the two main requirements of an editor: he has a thorough mastery of the subject, having worked at leprosy in Malaya for some twenty years, and he has a flair for interesting and concise writing.

Leprosy Review has an important role to play, and we have frequently received letters of gratitude from readers, both medical and non-medical, engaged in leprosy work in lonely corners of the Empire.

I wish to thank all those who have contributed during the last ten years, and trust that they will continue their help. I hope also that others will assist by sending in articles, news, and other items which will be of help and interest to our readers.

I am particularly grateful to Sir Leonard Rogers who, besides helping in many other ways, took over my duties as Editor during the last four years of the war.

NOTE ON THE EARLIER WORK ON LEPROSY OF DR. ERNEST MUIR.

Leonard Rogers.

It was in 1920 that Dr. E. Muir accepted the post of whole-time research worker in leprosy in the newly founded Calcutta School of Tropical Medicine. The work was financed by an endowment fund which I had raised to provide for five additional research units.
In 1916 and 1917 I published, with coloured drawings and photos before and after treatment, very promising results in comparatively early cases of leprosy by the injection of soluble preparations of chaulmoogra oils, in place of the inefficient age-long oral use of these nauseating drugs. Muir at once took up the new method of treatment and was the first to confirm my work. I turned to him, therefore, as the best qualified man to continue my leprosy research in India when I went home on leave early in 1920 preparatory to retirement under the age rules.

Leprosy is a disease which shows such great variations in type, symptomology, degrees of mildness and severity and in its prolonged course, that only patient and prolonged investigations could allow the limits of the value of the improved method of treatment to be determined, and further technical improvements in the use of soluble chaulmoogra preparations to be worked out. Moreover, owing to the then small amount of interest of the medical profession in such an apparently hopeless disease as leprosy, no-one had any idea of its real incidence in India and other afflicted countries and its earlier stages were little known. How then were the earlier cases, which alone I had found to be amenable to treatment, to be discovered and induced to attend dispensaries for long periods for treatment?

These and other difficult problems awaited the attention of the newly constituted leprosy research unit in Calcutta. The following account will show how efficiently they were tackled by Muir and his assistants.

Muir's early work in Calcutta was mainly on two lines: firstly, further technical improvements in the use of chaulmoogra preparations for the injection treatment; and secondly, extensive surveys in selected areas to determine the true incidence of leprosy in India and to ascertain the most practical methods of extending the treatment of early cases of leprosy with a view to the ultimate control and reduction of the disease.

I had mainly used intramuscular and intravenous injections of weak solutions of the sodium salts of the lower melting points fatty acids of hydnocarpus wightiana oil. Its intravenous use was handicapped by its irritant effect causing blocking of the veins, but Muir got over the difficulty by the simple expedient of diluting the solution by drawing up some blood into the syringe before injecting the whole. A more important advance resulted from his finding that pure fresh hydnocarpus oil was unirritating when injected intramuscularly with a little creosote as an antiseptic. Both methods are very cheap, as compared with the use of ethyl ester of chaulmoogra oil, introduced in 1919 by American
workers in Hawaii, although the latter is very useful by intradermal injection into the skin lesions.

Muir and his assistants also carried out comprehensive house to house surveys for cases of leprosy in selected areas in each province of India with a total of two and a half million people examined. On comparing the data so obtained with the census figures for the same areas, which only included very advanced cases easily recognized at a glance by non-medical enumerators, they thus showed that when the early cases were included the true number amounted to four and a half times those returned at the last census. The proportion has since been placed by some as high as ten times. Fortunately some four-fifths of the early cases proved to be of nerve type, which are little, if at all, infective. They can therefore be treated as out-patients without being isolated. This patient enquiry enabled Muir to formulate his Propaganda-Survey-Treatment plan, under which the confidence of the people is first obtained by instructing them on the subject, house to house surveys are then carried out to disclose the true prevalence of the disease and special leprosy dispensaries are opened under doctors trained for the purpose at the Calcutta school. Within a few years hundreds of such clinics were opened all over India at which scores of thousands of early amenable cases were treated, and the people were also instructed on house isolation of infective cases in the villages. I had also advocated early in 1920 the establishment in every province of India of agricultural colonies for voluntary isolation, with adequate treatment, of the more highly infective nodular, or as they are now called, lepromatous cases; but lack of funds has prevented much advance in this essential feature of leprosy prophylaxis except in Madras.

Muir also availed himself of the abundant clinical material attending his Calcutta leprosy out-patient department to describe the phases and stages of the disease and especially its early little known stages. In the meantime I had spent three years in England on a comprehensive study of the literature of leprosy for some six decades, to ascertain the conditions favouring the spread of the disease and the most practical methods of its control. I then enlisted Muir's help in writing the clinical and pathological sections of a book on leprosy, to which I contributed sections on its history and distribution, epidemiology and communicability and on prophylaxis. This appeared in 1924 and reached a third edition in 1930; and it has influenced progress throughout the British Empire and far beyond it. In 1924 the British Empire Leprosy Relief Association was founded in London, and as the result of a visit to India in 1925 of its first Secretary, Mr. Frank Oldrieve, Lord
Reading, the then Viceroy, issued an appeal for an Indian branch. The success of this appeal enabled the Indian fund to take over financial responsibility for the Leprosy Research section of the Calcutta School of Tropical Medicine and for work in every province of India.

**CLAMP METHOD TO OBTAIN CUTANEOUS LYMPH IN THE DIAGNOSIS OF LEPROSY.**

H. C. DE SOUZA-ARAUJO

During research work conducted in Colombia in the early part of 1939 I had an opportunity of examining the Lleras method of obtaining skin lymph for the detection of Hansen bacilli. My Colombian colleagues used the common clamp of Pean to produce ischaemia of the affected part, thereafter obtaining lymph by a single puncture of the lesion.

Returning to Brazil I introduced the Lleras method with certain modifications. 1. The area of skin to be examined is, after sterilisation, gripped up with a haemostatic clamp of Pean (See fig. 1. Ref. fig. 2538 Catalogue Jetter and Scheerer). The blades are tightened till the first, second or third tooth of the handle is engaged according to the thickness of the skin. 2. The area of skin thus clamped, say 5 cms. long, becomes quite ischemic within a minute. It is then punctured deeply at four separate points with a large needle. 3. Four drops of clear lymph exuded from the sub-corium are collected each with a vaccination pen and smeared separately on a new and well cleaned slide. The slide requires a few hours to dry and is best covered with a Petri dish to avoid contamination from the air. 4. The slide is then stained by the usual Ziehl-Neelsen method.

This modification of the Lleras method by eliciting four samples of material, proportionately increases the chances of finding bacilli as compared with single smear scraping methods.

When the lesion to be examined is situated in a region of the body characterised by dense subcutaneous tissue, e.g. the back, buttocks, etc., the technique is modified by using two clamps.

Where the lymph is obtained from a diffuse lepromatous lesion, the quantity of acid fast bacilli found in each microscopic field is enormous. Further, these bacilli stand out conspicuously owing