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News and Notes

GOLDEN JUBILEE OF THE BRITISH LEPROSY RELIEF ASSOCIATION

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Director

Fifty years is a very short time in the known history of leprosy, yet it seems a long time when one looks back to the early 1920's, when Sir Leonard Rogers was a Major General in the Indian Medical Service, and Mr Frank Oldrieve the Secretary for India of the Mission to Lepers, now the Leprosy Mission. Sir Leonard Rogers had just completed the research at Calcutta on chaulmoogra which opened up a new era in leprosy treatment, giving hope for the first time that the disease might be eradicated. This vision, set against the tragic background of leprosy in India which both knew so well, brought both men together. At an historic meeting on 29 March 1923, the idea of a new, non-sectarian organization dedicated to the eradication of leprosy was mooted, and when Sir Frank Carter, also recently retired from India, offered to organize the financial side, the launching of the British Leprosy Relief Association (BELRA) followed in January 1924, under the patronage of the Prince of Wales.

The enthusiasm and great authority of Sir Leonard Rogers in particular gave importance and official standing to the Association from the outset, and Branches were formed in several countries administered by Britain. The Indian Branch, known for many years as the Hind Kusht Nivaran Sangh, has served independent India in a most outstanding way.

From the start, the main emphases of BELRA were on leprosy control, especially the promotion of treatment in the early stages, and in research in all its aspects. Throughout its history the Association has been served by a succession of distinguished leprologists in the role of Medical Secretary. The development of leprosy control work in territories administered by Britain overseas owed a great deal to visits made by the Medical Secretary of BELRA, often with official backing, and so able to stimulate interest and to concern at government level, while at the same time bringing encouragement and support to those actually engaged in leprosy control work. In several countries it was as a result of such visits, and the practical support of BELRA in both finance and personnel, that leprosy control work really began. The LEPRA leprosy eradication project in Malawi is a continuing example of the activity of BELRA in this sphere.

Certain other aspects of the Association's work stand out, and have stood the test of time. In 1928 *Leprosy Notes* was introduced, and developed into the *Leprosy Review* by 1931. At that time this was the only publication in the British Empire outside India which dealt exclusively with leprosy. Though by no means the only publication of its kind today it still is playing a most important role wherever the English language is understood.

1933 saw the foundation of LEPRA's overseas staff, following the Reverend Dr Clayton's visit to West Africa during the previous year. No one who has had any experience of leprosy control in Africa will doubt the wisdom and the foresight of Tubby Clayton in suggesting that TOC H and LEPRA should join forces to make available LEPRA workers for service overseas. A long succession of devoted workers followed, doctors, nurses, pharmacists, administrators, and accountants, and their contribution to the work has been very considerable.

The importance of early treatment had long been recognized, but it was not until 1937 that steps were taken to set up the Child Adoption Scheme, when the first 12 children became adopted. This Scheme provided the money needed to ensure the best treatment of children, thus preventing them from becoming disabled. With changes in treatment and the emphasis on domiciliary care the Scheme has been modified, and today more than 29,000 children receive their treatment at home as a result of grants made to organizations in India and Africa from the successor to the Child Adoption Scheme, the Children's Fund.

The fostering of research has always been a primary objective of LEPRA. There is no more outstanding example of this than the founding of the Research Unit at Uzuakoli hospital in 1947, destined to contribute so much towards leprosy therapy in succeeding years.

To be successful an Association has to adapt its methods to contemporary conditions. As will be seen, the overall policy decided upon when the Association was set up has largely stood the test of time, but the methods employed for fighting leprosy throughout a self-governing world have had to be modified. In 1964 BELRA became LEPRA. Now in this its Jubilee year, the optimism shown throughout the history of the Association is probably more surely based than it ever has been. LEPRA is currently becoming more and more involved with various aspects of leprosy research, since it is felt that the ultimate solution to the problem lies in finding quicker-acting drugs or a prophylactic. In view of the dramatic increases in knowledge over the past few years it is not unreasonable to assume that whilst during the first 50 years of the Association's existence the estimated number of cases of leprosy in the world has risen from 3,000,000 to 15,000,000, during the next 50 years there is every chance that the original object of the Association—the eradication of leprosy, will be achieved, not only from the British Empire, as it then was, but from the world.

PLANS FOR A COLONY OF ARMADILLOS IN ENGLAND

R. J. W. REES

Although the full impact of biomedical research in leprosy will be restricted until *Myco. leprae* can be cultured *in vitro*, important advances have been achieved since it was demonstrated that the leprosy bacillus could be grown in the mouse. In fact, from the time this was first achieved in 1960 using the "mouse footpad technique", experimental infections with *Myco. leprae* in the mouse and other small rodents have been exploited on an ever increasing scale. Growth of *Myco. leprae* in these animals has been applied wherever possible as a substitute for *in vitro* cultivation techniques used for other cultivable bacteria, and in addition the resulting experimental leprosy infections have been applied for studying the evolution and pathogenesis of the disease.

The direct and indirect application of these animal infections have provided, for the first time, the means whereby *Myco. leprae* can be studied in the laboratory, and have already encouraged workers in many other disciplines to undertake leprosy research. In the period of only 14 years since this animal infection was developed, it has contributed significantly to our knowledge of the pharmacodynamics of dapsone, the introduction of acedapsone and rifampicin for the treatment of leprosy, proof of the existence of dapsone resistant strains of *Myco. leprae*, new knowledge of the pathogenesis of leprosy neuritis, and the role of cell-mediated immunity in determining the "resistance and susceptibility" of the host. The latter findings were based on the fact that multiplication of *Myco. leprae* in the "normal" mouse was limited and reached a plateau six months after inoculation whereas mice made immunologically deficient (T-cell deficient) by thymectomy followed by total body irradiation, supported the continuous growth of *Myco. leprae* more or less throughout their 2-year life-span. Such mice replicated the bacterial and histopathological picture seen in patients with lepromatous type leprosy.

Thus, in the period 1960-1971 infections with *Myco. leprae* in the mouse and to a limited extent in other rodents, dominated the advances in leprosy research, mainly with a limited infection but also in an enhanced infection which could be artificially produced in the mouse by obliterating its cell-mediated immunity. In 1971 another and most important animal model was presented to the world by Kirchheimer and Storrs, who showed that the nine-banded armadillo (*Dasypus novemcinctus,* Linn.) could without any prior manipulation of its cell-mediated immunity develop a progressive lepromatous-like infection when inoculated with *Myco. leprae*. These two workers were based in Louisiana where this species of armadillo is commonly found. It is a large mammal weighing 3-5 kg and has a life-span of approximately 15 years, compared with a 25 g mouse with a life-span of only 2 years. Thus, the armadillo has tremendously important potentials for leprosy research. In particular the fact that at least a proportion of these animals develop, without any sophisticated immunological manipulation, a spontaneous heavy infection when inoculated with *Myco. leprae*, provides, for the first time, a laboratory source of *Myco. leprae* on a massive scale. Thus, while the readily available mouse substitutes conveniently for routine *in vitro* cultivation of *Myco. leprae,* the armadillo substitutes for the large-scale *in vitro* cultivation of *Myco. leprae*. Therefore, these two animal models should go a very long way towards enabling nearly all aspects of basic and applied research on *Myco. leprae* to be achieved without actually culturing the causative organism *in vitro.* Recent intensive studies on the armadillo in Louisiana have shown that the animal can be adapted to laboratory conditions and that a relatively high proportion of animals inoculated (probably up to 60%) develop progressive infection when inoculated with strains of *Myco. leprae.*

In June this year I visited Dr E. Storrs at the Gulf South Research Institute, New Iberia, Louisiana, to learn the techniques of husbandry and to arrange for her to despatch to England 20 laboratory adapted nine-banded armadillos. With her collaboration these animals are expected to arrive by air in England some time in October. Allowing about a month for them to acclimatize to our local conditions they will then be inoculated with *Myco. leprae* in November. From recent knowledge we can anticipate up to 12 of the animals developing in about 18 months a progressive infection. This, at least, is the anticipated rate of infection from experience with these animals in Louisiana. The importance of this

exercise will be to establish first of all that these infections can be reproduced in England, and if they can then in about 18 months a large supply of *Myco. leprae* will be available for research workers in this country. Biopsies of tissues will be taken from the armadillos at intervals following infection in order to determine their progress. Once such biopsies are shown to be positive, further consignments of laboratory adapted armadillos will be imported in order to maintain a continuous colony of leprosy infected armadillos for long-term research in the United Kingdom.

A major part of the financial support for this programme will be provided by LEPRA.

LEPRA MEDICAL ADVISORY BOARD

The Executive Committee of LEPRA when considering the complexity of leprosy, has decided that, in order to have the best advice available on all its aspects, the former Medical Committee should be replaced by a Medical Advisory Board (M.A.B.). Members of the M.A.B. would be appointed for three years initially with the possibility of further appointments provided they are still engaged in the medical discipline they were originally appointed to cover.

The following members have accepted appointment:

1.	Clinical	– Dr W. H. Jopling
2.	Clinical Research	– Dr C. McDougall
3.	Epidemiology	– Dr T. Meade
4.	Editor of *Leprosy Review*	– Dr T. F. Davey*
5.	Field Work	– Dr D. Molesworth
6.	Histopathology	– Dr D. Harmen
7.	Immunology	– Prof. J. L. Turk
8.	Medical Education	– Dr C. McDougall
9.	Microbiology	– Dr R. J. W. Rees*
10.	Neurology	– Prof. G. Weddell
11.	Pathology	– Dr D. S. Ridley*
12.	Pharmacology	– Dr G. Ellard*

(* Members of the Editorial Board of *Leprosy Review*.)

NEW LEPRA FILM: *LEPROSY*

LEPRA announces the release this autumn of a new film for the general public entitled *Leprosy*, and designed to present the facts about leprosy in their present day setting. Much care and skill have gone into the making of this film, and Sir Harold Himsworth, K.C.B., F.R.S., M.D., F.R.C.P., a Vice-President of LEPRA has contributed the following background to the film.

Perhaps no other ill that affects man has excited such fear and repulsion as leprosy. It is not surprising that this should be so, for the results of the disease are dreadful, the disfigurement it produces appalling, it is contagious and no respecter of persons, and until comparatively recently, all men's efforts to arrest its insidious progress were largely unavailing. Is it any wonder then that over the ages a mythology accumulated round leprosy which has coloured the whole attitude of

human societies towards its unfortunate victims and inclined them to avert their gaze from the problem it poses?

But times are changing. In the 1940's the discovery of sulphone treatment was an outstanding advance, both in the treatment of active leprosy and in reducing the period in which sufferers from leprosy were capable of infecting others. The gains thus made have been considerable. But, as every physician knows, the only way to conquer chronic infectious disease is to prevent it. The crucial steps to this end are to reproduce the disease in experimental animals and to cultivate the organism that causes it outside the body. Only thus is it possible to accelerate the production of drugs for treatment and to entertain the possibility of a vaccine for prevention. In the case of tuberculosis, the disease most closely related to leprosy, we found out how to do these things many years ago, and the fact that we are now within sight of getting the measure of this condition can largely be attributed to our having done so. But, until very recently, leprosy defeated all our efforts to do likewise. Now, however, we have discovered how to produce the disease in animals and, although we are still unable to grow the causative organism, it is clear that the day when we can hope to attack leprosy at its source, rather than simply defend ourselves against its manifestations, is now dawning.

That is the theme of the new chapter that is now opening on our field. Clearly, as LEPRA has appreciated, it points to an intensified research effort. But its implications go beyond this.

Leprosy has now been brought into the category of diseases that are yielding to scientific research. This should do much to orient human societies to regard it as a disease like any other and, as such, something with which it is their duty to deal. There is much that can be done at present. Further, even if we are successful and find a way to prevent leprosy and obtain drugs that will decisively and quickly cure it, there will still be an enormous legacy of casualties from a previous era whose lot has to be ameliorated. That era is today and the casualties are occurring daily. Given a reasonable hope of ultimate success, men are prepared to make greater efforts to develop what they have. If they are to do this, however, they must first be convinced that their efforts will not be wasted. This is where a body like LEPRA has an invaluable part to play. It is for this reason that we should be grateful to the Executive Committee for commissioning the production of that excellent film *Leprosy*. Nobody I think can see this without realizing, not only the promise of the future, but also what it is possible to achieve in the present. And having seen this, it will be difficult for them to pass by.

CLASSIFICATION OF LEPROSY

A set of transparencies covering the clinical and histological spectrum of leprosy has been prepared by Drs W. H. Jopling and D. S. Ridley on behalf of LEPRA and is available on request without charge. The set of 10 clinical and 14 histological transparencies, accompanied by legends and information, is suitable for teaching purposes. Apply to the Secretary, LEPRA, 50 Fitzroy Street, London, W1P 6AL.