REPORTS

Colonial Medical Research Committee: 15th Annual Report, 1959–1960.

In 57 pages this report deals with a wide range of research activities, including helminthiasis, malaria, virus diseases, tuberculosis, leprosy (pp. 116–129), Sickle-Cell Anaemia, etc. In Northern Nigeria, Dr. D. G. JAMISON made interesting histological investigations in formalin-fixed skin biopsies from 5 normal subjects in daily contact with untreated lepromatous cases. Even after examining 2,230 serial sections he could not detect the presence of acidfast bacilli in the skin. He also examined biopsies taken from enlarged nerves of patients with various kinds of leprosy, choosing in each case the dorsal cutaneous branch of the radial nerve. He used silver staining techniques. He also studied the Schwann cells in enlarged peripheral nerves after Indian Ink injections and injections of dead acidfast bacilli. Changes in skin and nerve structure were also studied in 15 leprosy patients under "Etisul" inunction therapy, and animal experiments of parallel nature are being carried on. It was found that in all the lepromatous cases that *with daily inunction of Etisul there was a very marked reduction of the number of bacilli in the dermis* following 3 weeks of treatment, though acidfast bacilli could still be found in peripheral nerves in the same biopsy. Lepromin and Tuberculin skin testing was carried out in 79 selected children in Katsina (the lepromin was made in Oxford by Dr. R. L. Vollum from material sent from Katsina). For the tuberculin test the Heath multipuncture method and PPD were used. It is hoped to extend the experiment to at least 1000 children. During each visit overseas lepromatous material was collected for making lepromin at Oxford and for culture studies. Dr. J. M. GARROD, of the *East African Leprosy Research Centre at Alupe, Kenya* has reported on therapy by DPT (Ciba–1906). Those who have completed 3 years of treatment showed some signs of drug resistance, first shown by apparent lack of further progress, then by the appearance of new lesions and an increase of bacilli in lepromatous cases. When transferred to DDS treatment, normal progress is resumed. *Etisul* was tried in combination with DDS or DPT, or TB_1 in 17 lepromatous, 5 borderline, and 1 tuberculoid cases. The tuberculoid did not respond much more quickly than usual, and of the others those on TB_1 did rather better than with the other accompanying drugs. *Etisul has a direct and speedy effect on the bacilli, causing granulation and beading, loss of acidfastness, and disintegration of globi. The bacillary index drops by a fourth in* 4 *months, and nearly half in* 8 *months. Clinical progress in speeded three-fold.* Progress then slows remarkably, even when the Etisul is continued and signs of resistance develop. It seems that all the benefit of Etisul is obtained in the first few months of its use.

This benefit is permanent and is maintained if DDS is the accompanying and following drug. There have been *no toxic effects with Etisul*. There is little objection to the smell.

Biochemical studies have been carried out by Mr. G. A. Ellard, M.Sc. on the estimation of DPT by a ferric chloride quantitative method and it has been possible to suggest *the optimum dosage of DPT* as 1.5 g. daily or preferably in 3 divided doses daily. The metabolites of DPT have also been studied, with hopeful results.

Dr. R. F. NAYLOR of the Dept. of Chemistry of Makerere College has continued studies on the measurement of dehydrogenase activity in saphrophytic mycobacteria by tetrazolium salts, and latterly *by radioactive tracers*. He is using C–14 to detect protein synthesis in *M.phlei*, and the actual uptake of DDS, DPT, and Etisul when labelled with S–35 (this in collaboration with Mr. Ellard).

From the National Institute of Medical Research, London, Dr. R. J. W. REES reports on his laboratory studies *on the morphology of leprosy bacilli* (with Dr. R. C. VALENTINE) *on the multiplication of* M. lepraemurium *in cell cultures* (with Miss Y. M. BARR and Miss E. W. GARBUTT); on *attempts to transmit* M. leprae *to experimental animals*. This last work is based on a colony of the strain of hybrid black mice in which K. R. CHATTERJEE of Calcutta claimed to have transmitted human leprosy. It is interesting that this hybrid strain of mice has proved to be much more resistant to tuberculosis yet more susceptible to rat leprosy than an albino strain of mice. These transmission studies are being closely integrated with those of Dr. M. F. R. WATERS at Sungei Buloh, Malaya, who also supplies much of the fresh leprosy tissue.

Dr. E. M. BRIEGER and Miss J. M. ALLEN of the Strangeways Laboratory, Cambridge visited several leprosaria in Uganda and Belgium Congo, Dec. 1958 to May 1959, for observations on behaviour of leprosy bacilli in tissues; electronmicroscopic studies were made of thin sections through lepromata (by treating osmum-fixed tissues with uranyl acetate one could avoid much of the distortion seen in previous studies). Many bacilli showed a defined general structure with definite close-fitting cell walls and a well-delimited cytoplasmic cortex, and the cytoplasm was interpenetrated by membranous sheets in a well-nigh parallel arrangement. Inclusions made up of a granular uniform material were found at one or both ends of the bacilli. These inclusions were bounded by a membrane and in texture were different from the cytoplasm itself. They are not likely to be spores but more probably are inclusions of metabolic material. A *nuclear structure* has not so far been identified in the bacillus. The correlation between structural anomalies in the bacteria and *viability* has not yet become possible. The potassium tellurite work in conjunction with Dr. NAYLOR at Makerere has not shown respiratory activity in *M.leprae*, indicating an absence of dehydro-

genase activity. Dr. NAYLOR also had a pilot experiment on the uptake of labelled amino-acids in bacilli recovered from explants after various lengths of time in culture. There was a meagre uptake in *M.leprae* compared to *M.phlei*.

East African Leprosy Research Centre (John Lowe Memorial): Annual Report, July 1959—June 1960.

Some patients still remained in the clinical trial of DPT (Ciba–1906). In 12 out of 18 remaining patients, signs of *drug* resistance in the shape of clinical regression, after an average of 35 months' treatment. The treatment had been DPT by mouth in a single undivided dose, and the giving of divided doses might well have prevented any clinical regression. Nevertheless, DPT might better be reserved for the first year only of treatment.

Etisul (diethyl dithiol*iso*phthalate) has been given trial at the Research Centre, combined with DDS or DPT, or Thiacetazone, and the results are favourable. In the first 4 months it has a marked antimycobacterial effect, first shown by a disintegration of the bacilli and globi, and loss of acidfastness. *Bacterial and histological effects and clinical progress in the first year are similar to that of* 2 *or* 3 *years of standard treatment*. It seems that most of the benefit from Etisul takes place in the first 3 months, and little is to be expected from continuance. When standard treatment follows, quick progress continues for some time, slowing gradually until at 18 months the rate of progress resembles that of standard treatment alone. In cases with few bacilli the effect is not marked. No toxic effects from Etisul have been noted up to a dose of 10 g. daily. The average dose is 5 g. by inunction as a cream into the skin twice a week, or 1.5 g. daily is effective.

In the Centre a guinea pig colony has been established. The Centre also has made lepromin. In biochemistry further study has been made of the ferric chloride method of estimating DPT, and studies of the amounts of metabolites excreted. Above 1.5 g. further increases in oral dosage cause no further increase in the amount absorbed. To clear 1.5 g. takes about 4 to 5 hours. *A dose of* 1.5 *g. DPT thrice daily is recommended for the best results*. Radio-isotope work on DPT has been done in conjunction with Dr. R. F. NAYLOR of Makerere. Extraction of urinary metabolites of continued and samples have been sent to U.K. The extracted metabolite seems to be even less soluble than the parent substance.

The Director of the Research Centre now acts as medical officer of the leprosarium.

First Course of Instruction in Dermatology—Leprosy for Doctors and Nurses, in Mexico. Dr. A. SAÚL reports on this course, in Dermatologia, Revista Mexicana **4**, 2: June, 1960, pp. 131–138.

The Director of the Course is Prof. F. LATAPÍ. Dr. AMADO SAÚL was the professor of the Course, which was held 15 Mar. to 31 July,

1960, in the Dermatological Centre PASCUA in Mexico City and in the Dermatological Institute of Guadalajara, Mexico. There were 12 weeks of theoretical and practical study, and 4 weeks of practical exercises in the field.

Prof. SAÚL says that the modern Mexican approach to the control of leprosy began and developed gradually since 1937, and as in other countries, and changed the plan of internment of the patients in leprosaria with almost police persecution and devoted a more humane and wise attention to the patients in antileprosy dispensaries (which were afterwards called Dermatological Centres). These are now the basis of control and are sited in the areas of the country which have most endemic leprosy; on paper at least there are 24 of these centres now, but many of them are not fully completed and in full action. Because of the wide spread of the endemic zones of leprosy in Mexico, the poverty of the patients which hindered travel to the Centres, the poor performance of the Centres, and the imperfect treatment of the patients, the work of the Centres became changed to an intramural one with scanty rural effect. Little effort and interest and much "burocratismo" characterized the Antileprosy Campaign during recent years. The patient labour of Mexican leprologists, headed by Prof. LATAPÍ, the continuous and tenacious influence of the Mexican Association for Antileprosy Action, the recent international Leprology Congresses, and the visit to Mexico of distinguished leprologists of world-wide fame, awakened the interest of the national Health Authorities. By the express desire of the Secretary for Health and Social Assistance, Dr. J. A. AMEZQUITA, a different new plan was drawn up. This was called "Programme for the Control of Chronic Skin Diseases". It continues on all general and special lines as laid down often by Mexican leprologists. Its basic principle is to continue work in the rural zones where the patients actually live, by means of the creation of *mobile teams* made up by 1 doctor and 1 nurse, both properly trained in leprosy.

The Dermatological Centres continued their function of centralization of activities and dermatological consultations, of teaching of staff, and of study. Of the 24 Centres in the land, only 2 had any great development, namely the Pascua Centre in Mexico City and that in Guadalajara.

An important point in the new programme was to consider and repair the lack of doctors trained in leprology and dermatology. Mexico is one of the few countries which insist on the need of a basis of dermatological knowledge for the training of a good leprologist and the first Course of Instruction for doctors and nurses was planned with this in mind. The course contained 10 doctors and 10 nurses, as well as 3 health nurses. For the doctors the theoretic course covered theoretic and practical lectures, "round tables", and

time for the library. The lectures covered fundamental dermatology and leprology, epidemiology, statistics, health administration, hygiene, anthropology, and psychology. The subjects in dermatology occupied 33 hours and gave special attention to the diseases most common in Mexico, such as superficial and deep mycoses, microbial, parasitic, and virus dermatoses, reactional dermatoses, tumours, syphilis, Mal de Pinto and many others. The use of the laboratory in dermatology and ideas on treatment completed this part of the study.

The leprology classes occupied 73 hours and dealt with the following subjects: the importance of leprosy in Mexico, its distribution and causes and pathogenesis, transmission, immunity, clinical features, cutaneous, neurological, ophthalmological, and orthopaedic; the use of the laboratory in leprosy, modern therapy of leprosy, leprosy as a problem of the individual, the family, and the community; the management of the patient, the problem of leprosy reaction, prevention of leprosy and modern ideas on that. The classes in epidemiology dealt with the concepts of health and disease, transmissible diseases and epidemic diseases, and of course the epidemiology of leprosy. Anthropology and Psychology occupied 9 hours and dealt with important themes like the characteristics of urban and rural populations in Mexico; social, cultural, and psychological data of the chronic patient.

Complementary classes were given on health administration and hygiene, with emphasis on education of the patient and his family. Statistics classes occupied 8 hours. There were practical classes for most of the time. Books and periodicals were studied in the library. Professors and lectures at the course included F. LATAPÍ, C. ESTRADA, BEIRHNA, A. SAÚL, NOVALES, CASTILLO, and many others. For the nurses the theoretical and practical course lasted 1½ months and the course was on similar lines but simpler. *Field studies* were incumbent on all students. They brought the students into contact with people where they lived and were most valuable. They were divided into teams for this work. The whole course was highly successful.

Department of Health, Union of South Africa: Annual Report, 1958.

This Report was received by us in London Jan. 1960. It is mainly of statistical nature. Leprosy is mentioned on p. 2 where it is stated that Leprosy Boards meet at frequent intervals for the purpose of discharging patients. Discharges seem to be greater in number for it is stated that the institutions in Tanskei and Pondoland (Mjanyana and Mkambati, respectively) have less than half their accommodation taken up, and the vacant section has been converted for tuberculosis patients. This transfer of use for tuberculosis is also foreshadowed for Amatikulu in Zululand. On p. 27 there is a table of

incidence. There were 32 "white", 1418 "Bantu" and 56 "coloured" patients, and only 4 Asiatics, in leprosy institutions, *a total of* 1510 *leprosy patients*. Of these, Westfort, Pretoria had 327 new cases, 470 discharges and 25 relapsed cases. The other 3 institutions had 257, new cases, 494 discharges, and 49 relapsed cases.

Report of the Director of Health Services, Ceylon, 1959.

This Report, on pp. 209–212, deals with the Control of Leprosy. There was an "Antileprosy Drive" in 1959 which brought 339 new cases to light. The cases are simply and practically classified as lepromatous or non-lepromatous on a bacteriological basis. The total of known cases is 3547, and 881 are in institutions. The average lepromatous rate is something approaching 30%. Contacts are kept under observation by field officers, and attention is being given to rehabilitation of cured patients.

Report on the Health Conditions of the Maltese Islands for the Year 1958.

On p. 129 leprosy is reported under the heading St. Bartholomew Hospital. The number of patients remaining in hospital was 43 at the end of 1957. Two patients were admitted during 1958 and 2 discharged. The type of leprosy is mainly lepromatous. Compulsory segregation was abolished in 1953. Patients now come forward voluntarily. At the outpatient clinic attached to the hospital there were 652 attendances. Sulphone therapy remains the main therapy for all patients, but Ciba–1906 has been tried on a few patients.