NEWS and NOTES

This department furnishes information concerning institutions, organizations, and individuals engaged in work on leprosy and other mycobacterial diseases, and makes note of scientific meetings and other matters of interest.

1990 DAMIEN-DUTTON AWARD RECIPIENT IS WAYNE M. MEYERS, M.D., Ph.D.

The INTERNATIONAL JOURNAL OF LEPROSY is extremely proud to report that the 1990 Damien-Dutton Award winner is the President of the International Leprosy Association and Chairman of the Board of the JOURNAL, Dr. Wayne M. Meyers. We present below the announcement by the Damien-Dutton Society.—RCH

"In a departure from our usual practice of selecting awardees from outside of our organization, it was the opinion of our judges that Dr. Wayne M. Meyers so exemplified its spirit and aims and his contribution to the field of leprosy so outstanding that the 1990 Damien-Dutton Award this year belongs to him without question, and that it is we who are honored in his acceptance of the nomination.

"President of the International Leprosy Association (ILA), Dr. Meyers is former Chairman of the Board of Directors of the American Leprosy Missions. He is Chairman of the National Hansen's Disease Center Research Advisory Committee, consultant to chemotherapy trials supported by the German Leprosy Relief Association, and is Consultant Scientific Director for the Leonard Wood Memorial Leprosy Foundation, in addition to serving on the Board of the Damien-Dutton Society—all this on top of his duties as Chief, Mycobacteriology Branch, Department of Infectious and Parasitic Diseases, Armed Forces Institute of Pathology (AFIP), Washington, D.C.

"Dr. Meyers was born in Pennsylvania in a small farming community, attended Juniata College there earning a B.S. in chemistry, going on to the Moody Bible Institute in Chicago. There he met and married Esther Kleinschmidt, daughter of missionaries to Africa. With a M.S. and Ph.D. in medical microbiology from the University of Wisconsin, and an M.D. from Baylor College of Medicine, he took up what was to be his life's interest in leprosy, moving to Africa which was to be home for him, his wife and four children for many years. He returned to Washington in 1969 as a visiting scientist at the Special Mycobacterial Diseases Branch of the AFIP, as a Leonard Wood Memorial Fellow in Research Pathology in Leprosy. His African tours were followed by two years as Professor

of Pathology, University of Hawaii School of Medicine, Honolulu. He took up his post as Chief, Division of Microbiology and Parasitic Diseases in Washington in 1975. He likewise became Registrar for Leprosy, AFIP, in 1975.

"On constant call as consultant for various groups and committees, he lives out of a suitcase, criss-crossing the United States, commuting to Europe, Africa, Asia and the Far East, wherever his experience can be of help. His knowledge, global; his zeal, boundless; he adds luster to our roster of Damien-Dutton Awardees dating back to 1953."

Previous Recipients of the Damien-Dutton Award

1953 Stanley Stein, U.S.A.
1954 Rev. Joseph Sweeney, KOREA
1955 Sister Marie Suzanne, FRANCE
1956 Perry Burgess, U.S.A.
1957 John Farrow, U.S.A.
1958 Sister Hilary Ross, U.S.A.
1959 Dr. H. Windsor Wade, PHILIPPINES
1960 Mgr. Louis Joseph Mendelis, U.S.A.
1961 Dr. Kensuke Mitsuda, JAPAN
1962 Rev. Pierre de Orgeval, FRANCE
1963 Eunice Weaver, BRAZIL
1964 Dr. Robert G. Cochrane, U.K.
1965 John F. Kennedy, U.S.A. (Posthumous)
1966 Peace Corps, U.S.A.
1967 Dr. Howard A. Rusk, U.S.A.
1968 Dr. Franz Hemerijckx, BELGIUM
1969 Dr. Victor George Heiser, U.S.A.
1970 Dr. Dharmendra, INDIA
1971 Dr. Chapman H. Binford, U.S.A.
1972 Dr. Patricia Smith, VIETNAM
1973 Dr. Jacinto Convit, VENEZUELA
1974 Dr. José N. Rodriguez, PHILIPPINES
1975 Dr. Oliver Hasselblad, U.S.A.
1976 Dr. Yoshio Yoshie, JAPAN
1977 Drs. Paul and Margaret Brand, U.S.A.
1978 Dr. Fernando Latapi, MEXICO
1979 Dr. Stanley G. Browne, U.K.
1980 Robert Watelet, ZAIRE
1981 American Leprosy Missions, U.S.A.
1982 Dr. Ma Haide, PEOPLE'S REPUBLIC OF CHINA
1983 Murlidhar Devidas Amte (Baba Amte), INDIA
1984 Mother Theresa, INDIA
1985 Dr. John H. Hanks, U.S.A.
1986 Samuel J. Butcher, U.S.A.
1987 Dr. W. Felton Ross, U.S.A.
1988 Hermann Kober, WEST GERMANY
1989 Catholic Medical Mission Board

ILEP 1991 Workshop Dates

The ILEP training discipline organizes two types of workshops on health education: a) to help leprosy workers better understand the psychological, social and cultural aspects of the disease and how these affect the lives and socioeconomic status of patients, and b) to improve their skills in communicating with patients, families and communities.

The first workshop, "Basic Workshop on Health Education and Psycho-Social Aspects of Leprosy," lasts 2 weeks and is offered once a year at the Leprosy Training Centers ALERT (Ethiopia) for African participants and KARIGIRI (India) for Asian participants. The second workshop is aimed at those who will assume responsibility for teaching or training other health workers in communication skills or psycho-social aspects. This "Workshop on Methodology of Teaching Health Education and Psycho-Social Aspects of Leprosy" also takes 2 weeks; training sites are ALERT and KARIGIRI.

1991 dates

Basic Workshop on Health Education and Psycho-Social Aspects of Leprosy

ALERT 11–22 March
KARIGIRI 14–24 October

Workshop on Methodology of Teaching Health Education and Psycho-Social Aspects of Leprosy

ALERT 2–13 September
KARIGIRI 4–24 February

Apply as soon as possible to your ILEP Coordinator or to: Dr. L. Van Parijs, Educational Expert and Trainer, 22 Av. Hellevelt, 1180 Brussels, Belgium. All workshops are limited to 20 participants, are conducted in English, and preparatory work prior to each workshop is required. Background documents and handouts are provided at the training site. Small group work, case histories, and video with feedback are used extensively.

Dates for the 1992 ILEP workshops will be announced in October 1991.

Brazil. *New home-base for* Hansenologia Internationalis. *Hansenologia Internationalis* has moved its base to the Instituto Lauro de Souza Lima in Bauru, S.P., Brazil, and Dr. Diltor Opromolla has been appointed as the new Editor for this publication devoted to all aspects of Hansen's disease (HD).

This journal was previously published as *Revista Brasileira de Leprologia* which discontinued publication in 1970. With the leadership of Dr. Abrahao Rotberg, a new journal was founded in 1976, replacing the former publication. This new journal, *Hansenologia Internationalis,* has broadened its horizons to other specialities involved in HD, such as microbiology, immunology, surgery, social aspects, and health education.

Hansenologia Internationalis is the official organ of the College of Hansenology of the Endemic Countries. For subscription information, contact: Editor, *Hansenologia Internationalis,* C. P. 62, Bauru, S.P., 17 100 Brazil.

China. *National Leprosy Conference held in Nanchang.* The National Leprosy Conference, sponsored by the China Leprosy Association, was held in Nanchang, Jiangxi Province, on 25–27 October 1990. About 150 leprologists from the whole country attended the conference. Prof. Chen Minzhang, Minister of Public Health, sent a letter to the conference as an opening speech, stressing the combination of theory with practice in leprosy control. A total of 176 papers on epidemiology, therapy, rehabilitation, experimental techniques, and nursing of leprosy were received and exchanged during the conference. Participants also discussed how to strengthen and speed up the National Leprosy Control Program in order to achieve the goal of basic elimination of leprosy from China by the end of the century.—Prof. Ye Gan-yun.

Congo Republic. *WHO Interregional Conference on Leprosy Control in Africa.* Figures produced at this World Health Organization conference on leprosy control in Africa, held in Brazzaville 6–10 November 1990, showed that Africa, with a population of 610 million, has approximately 558,000 registered cases of leprosy with 110,000 cases receiving multidrug therapy. There were 32,000 new cases in 1988, among which 9% were children. The conference was attended by approximately 100 prominent leprosy workers from the region and various WHO agencies.—WHO Report WHO/CDS/LEP/89.1

Germany. *German award to AHM Chairman.* Mr. Maximilian Gruner, Chairman of AHM, was awarded "Bundesverdienstkreuz am Bande" by Bundespraesident Richard von Weizsäcker for taking initiative in leprosy control work in the developing world and for establishing contact with numerous international organizations. The citation read by Honorable Minister for Social Affairs, Dr. Gebhard Glück says: "Of fundamental importance in AHM's work is the idea of making people progressively aware of the suffering and need among children, youth and adults in the developing countries of the world."—AHM Bulletin.

India. *Acworth Leprosy Hospital Research Society, Bombay, celebrates 20th anniversary.* Acworth Leprosy Hospital Research Society, Bombay, celebrated its 20th Anniversary Day on 9 June 1990. On that

occasion, a book entitled "Indian Leprologists Look Back" containing leprosy work done by 16 prominent Indian leprologists was brought out and released by the Society. The function was attended by eminent leprologists Dr. N. H. Antia, Dr. D. K. Dastur, and Dr. R. Ganapati who took part in the question-and-answer session with the audience that followed the function. Topics such as the results of multidrug therapy, possibility of leprosy vaccine in the near future, and participation of community in the leprosy control program were discussed at the session.—Kusht Vinashak Aug. (1990) 31.

Bombay Leprosy Project starts extension center at Sion Medical College. The Bombay Leprosy Project (BLP), a voluntary organization established in 1976, opened an extension center in LTMM College, Sion Hospital, with the object of involving medical students more effectively in the leprosy control program. As a unique gesture, the Preventive and Social Medicine Department of the College has offered a small space on its premises for this purpose.

At a function held on 14 December 1990 to mark the inauguration, Dr. R. Ganapati, Director, BLP, in his welcome address complimented and thanked the Bombay Municipal Corporation for taking this highly progressive step. He observed that the war against leprosy stigma should be fought from general medical institutions and not from leprosy hospitals. Sion Hospital has been a pioneer in absorbing all aspects of leprosy into its fold, thereby setting an example for other institutions. Mr. A. B. Maduskar, Deputy Municipal Commissioner, released a souvenir and emphasized the importance of the integration of leprosy into general medical services. Dr. (Mrs.) S. S. Deshmukh, Dean, LTMM College, presided over the function and complimented BLP on its activities in collaboration with medical institutions and offered all help to the project in the antileprosy program in the Sion Medical College. The function ended with a vote of thanks by Dr. C. R. Revankar, Deputy Director, BLP.

Earlier, Mr. Maduskar inaugurated an exhibition on "Leprosy and Medical Education" on the college premises arranged in memory of the late Dr. M. V. Yellapurkar, former President of BLP. The program ended with a scientific session on "Leprosy Control—Role of Medical Institutions." Dr. M. G. Deo, Research Director, Cancer Research Institute; Dr. P. S. N. Reddy, Dr. Shanta Shankarnarayan, and Dr. (Mrs.) Hemangi R. Jerajani (all from LTMM College) presented papers. Dr. R. G. Valia, Professor Emeritus of Dermatology, LTMM College, presided over the scientific session.

Dr. (Mrs.) K. Katoch wins Dr. C. G. S. Iyer 1989 Oration Award. Dr. C. G. S. Iyer Oration Award of the Indian Council of Medical Research for 1989 for young scientists for research in the field of leprosy has been awarded to Dr. (Mrs.) K. Katoch, Assistant Director, Central JALMA Institute for Leprosy (ICMR), Agra. Dr. (Mrs.) Katoch wins this award for her work on the chemotherapy of leprosy.—Indian J. Lepr. **62** (1990) 270.

Dr. Vinita Chaturvedi wins Indian Science Congress 1990 Young Scientists' Award. Dr. Vinita Chaturvedi, Senior Research Fellow, Department of Immunology, Central JALMA Institute for Leprosy (ICMR), Agra, was the recipient of the Indian Science Congress Young Scientists' award in the field of medical and veterinary sciences. Dr. Chaturvedi obtained this award at the Indian Science Congress Association meeting held in Cochin 4–9 February 1990 for her work on "Sequential serology of leprosy patients for monitoring chemotherapy."—Indian J. Lepr. **62** (1990) 170.

Indian Journal of Leprosy office moves to Madras. Dr. H. Srinivasan, Hon. Editor of the Sangh's quarterly journal the *Indian Journal of Leprosy,* had relinquished the post of Director, Central JALMA Institute for Leprosy, Agra, on 15 November 1990

and had moved to Madras. Consequently, the office of the *Indian Journal of Leprosy* has been shifted to Madras. Temporarily, manuscripts meant for publication in the *Indian Journal of Leprosy* may be sent to:

Dr. H. Srinivasan
Hon. Editor
Indian Journal of Leprosy
No. 1 Third Avenue,
Besant Nagar, Madras 600 090, India

—Kusht Vinashak Monthly **12** (1990) 31.

JALMA Trust Fund 1989 Oration Award to Dr. U. Sengupta. The JALMA Trust Fund Oration Award of the Indian Council of Medical Research for 1989 for "Leprosy research" has been awarded to Dr. U. Sengupta, Deputy Director (Immunology), Central JALMA Institute for Leprosy, Agra. Dr. U. Sengupta's award-winning work has been mainly in the areas of standardization of lepromin, identification of *M. leprae*-specific antigens and study of host-parasite relationships in leprosy—Indian J. Lepr. **62** (1990) 269.

International Mitsuda Award to Dr. K. N. Rao and Dr. K. Saha. Dr. N. M. Chawla, General Secretary of the Coordination Committee for the Welfare of Leprosy Patients, Delhi, India (Regd), writes to inform that two of their Executive Committee members, namely, Dr. K. N. Rao and Dr. K. Saha, Department of Immunology, Vallabhbhai Patel Chest Institute, Delhi, have been awarded the International Mitsuda Award, given to outstanding world personalities by the Institute for Investigations on Leprosy, Argentina. Among others Albert Schweitzer (in memoriam), Mother Theresa and Dr. Cesar Milstein, all Nobel Laurates, received this award. The famous leprologists receiving this award include: Professor L. Mester de Parajd, discoverer of deoxyfructoserotonin for the treatment of leprosy; Dr. K. Ramanujam of India, and Dr. Ray Foster, President of the Leprosy Research Foundation of the United States of America.

This award has been sent to Dr. K. Saha and Dr. K. N. Rao through Mr. A. N. Ram, Ambassador of India in Argentina, Ministry of External Affairs, Government of India, and Dr. A. S. Paintal, F.R.S., Director General of the Indian Council of Medical Research, New Delhi.

New appointment for Dr. V. P. Bharadwaj. Dr. V. P. Bharadwaj has been appointed Officer-in-Charge of Central JALMA Institute for Leprosy, Agra. All correspondence pertaining to the Institute should be addressed to him.—S. Kumar, Administrative Officer

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1990 Best Scientific Film award. I am happy to announce that the film "Neuropathic Foot In Leprosy" produced by the Poona District Leprosy Committee received the highest National Award of the Government of India as Best Scientific Film (including Environment and Ecology) at the 37th National Film Festival 1990 held at New Delhi. This documentary has been mainly filmed at the routine foot clinics of the Dr. Bandorawalla Leprosy Hospital, Kondhawa, with special emphasis on the research work on tarsal disintegration. The evolution of the foot, its unique features, and certain innovative procedures of "graded weight bearing" and "auto-correction of gait" have been described. In this work, commendable contributions have been made by Dr. Sanjay Sane, Mr. Vivek Kulkarni, and Mr. Anjay Dey. The scientific direction, commentary and overall features have been prepared by Dr. Mehta, while on the technical side, Director: Mr. Vishram Revankar, Cameraman: Mr. Vijay Deshmukh, and Artist: Mr. S. Phansalkar, have made worthy contributions. The animation sequences well explain the function and pathological changes of the foot. The advantages of barefoot walking and the better development of the foot without restrictive footwear have been studied in the Indian context. The Producer's Award was con-

ferred on Dr. Mehta and the Director's Award on Mr. Revankar. The principles of foot management enunciated in the film are applicable to foot conditions in other peripheral nerve disorders and diseases like diabetes mellitus. The film is ideally suited for medical training.

Technical details: This is a 25-minute English language 16 mm film in Eastman color (optical sound track). Price: Film print (16 mm) Rs. 9900/copy; video (VHS format) Rs. 1600/copy. Packing and shipping charges are extra.—Jal Mehta, Poona District Leprosy Committee, 35 "Manisha," 2-A Moledina Rd., Pune 411001 India.

1990 Padma Shri Awards to two leprosy scientists. Dr. N. H. Antia (Bombay) and Dr. M. G. Deo (Bombay) were decorated by the President of India, Sri R. Venkataraman, with Padma Shri awards on 23 January 1990. Dr. Antia is well known for his pioneering work in reconstructive surgery in leprosy patients and for research in the biology of leprosy at the Foundation for Medical Research of which he is the Chairman, as well as for his social concern in matters of health and rural development. Dr. M. G. Deo, Director, Cancer Research Institute, is well known for his work in developing an antileprosy vaccine based on the ICRC bacillus, which is now undergoing field trial in Maharashtra, besides his contributions in the field of experimental pathology.—Indian J. Lepr. **62** (1990) 269.

India. *Proposals for Research in Leprosy During VIII Plan Period.* It is currently estimated that there are about 4 million cases of leprosy in India, and about one third of all leprosy cases in the world occur in India. The Government of India has set the target that by 2000 A.D. leprosy will have to be eradicated.

Research efforts of ICMR during the 8th Plan will be geared up to provide all the essential support to the National Leprosy Eradication Programme to achieve this target. Epidemiological studies to assess the usefulness of standard dapsone regimen, and multidrug treatment in different forms of leprosy will be continued. Efforts to evolve better chemotherapeutic and immunoprophylactive regimens will be intensified. Improvement of immunodiagnostic tests for early and easy case detection, and improved surgical treatment for disability limitation will also receive due attention. Basic research on the metabolism of *Mycobacterium leprae, in vitro* maintenance and cultivation of *M. leprae,* development of animal models for leprosy, and development of *in vitro* systems for testing drug sensitivity will also receive support.

Chemotherapy. Long duration of therapy and the emergence of dapsone resistance have been considered as two major problems in effective chemotherapy for control of leprosy. Therefore, evolving newer chemotherapeutic regimens and testing them with the objectives of reducing the total duration of treatment without compromising the cure rate, reducing the complications (especially type 1 and 2 reactions) and obtaining early bacterial clearance from the skin, will be undertaken during the 8th Plan period. It is expected that modifications of current drug regimens as well as regimens containing newer antileprosy drugs like minocycline and/or poflexacin will be tried. Besides clinical assessments, laboratory assessments of various parameters including foot-pad inoculations of normal and immunocompromised mice/rats will be used for evaluating the results.

Epidemiology. Studies in the epidemiology of leprosy will continue to receive attention during the 8th Plan period. Investigations on the impact of NLEP, prevalence of leprosy in different parts of the country, prevalence of dapsone resistance, impact of multidrug therapy on prevalence and incidence of leprosy will be continued during the 8th Plan period. With the availability of immunological tests for detection of subclinical infection, the studies on transmission dynamics of leprosy are expected to receive newer impetus. In addition, it is expected that information on the socioeconomic dimension of the disease and its therapy will be gathered.

Immunodiagnosis. Various attempts are being made for early detection of leprosy in the field in order to understand the epidemiology of leprosy infection in the com-

munity. The currently available tests have not yet been found to meet the requirements. The stress now is to develop newer tests based on (i) specific synthetic antigens and (ii) specific antigens generated by recombinant DNA technology. It is proposed to initiate studies in this area with the aim of developing reliable tests that may be applied easily in the field.

In vitro tests for viability of M. leprae. Because of the long time taken for multiplication of *M. leprae* in the mouse foot pad, there is need for developing *in vitro* methods for the rapid determination of viability of *M. leprae.* Scientists from various institutions have developed methods for determining availability and monitoring drug resistance. It is proposed to carry out comparative evaluation of these tests during the 8th Plan to find out the most suitable test.

Since the bacterial index (BI) is used as the indicator of efficacy of chemotherapy and since the total bacterial load is an important parameter for the patient and the community, it is proposed to initiate a study to develop a method of assessing the bacterial load per unit weight of tissue (skin) for a given BI. Bacterial population will be assessed from biopsies from sites of known BI, taking care to make accurate measurements. This information will later be used along with available *in vitro* tests for viability for assessing efficacy of chemotherapy.

Basic Research

Immunology. Studies on immune complexes will be undertaken in order to identify the component mycobacterial antigens involved in the production of acute inflammation. Attempts will also be made to find out the genetic basis, if any, for the phenomenon of reactions.

Studies on metabolism of antileprosy drugs. Newer drugs are being developed to treat cases of leprosy. However, there is a need to understand their metabolism in the human body, disposition of them in human tissue and any complication that may occur as a result of therapy. Pharmacokinetics of rifampin and dapsone and their interaction has been worked out in 7th Plan period. Studies have been extended to include clofazimine and thioamides. New drugs, like fluoroquinolones, minocyclin and ansamycins, which are likely to come into use in the treatment of leprosy in the near future will be studied in 8th Plan period.

Efficacy of chemotherapy depends on the bioavailability of the drugs administered and that may be influenced by the presence of specific drug antibodies, especially when the drug is given for prolonged periods as in leprosy. In view of this, it is also proposed to initiate studies to detect and assess the role of specific antibodies developing against the antileprosy drugs in common use and their clinical relevance.

Studies on metabolism of M. leprae. Studies are being undertaken to gain knowledge about metabolic requirements of *M. leprae* so as to determine the condition necessary for cultivation of *M. leprae.* Studies carried out during the 7th Plan at CJIL, Agra, have provided important information for *M. leprae.* During the 8th Plan, investigations will be initiated for studying the kinetics of transcription and translation in *M. leprae* and other mycobacteria. These are expected to provide information about growth kinetics of *M. leprae* and also for finding suitable media for its eventual cultivation. Moreover these studies may provide information about drug-sensitive sites.

Studies on molecular biology. Recent advances in recombinant DNA technology have opened new frontiers for investigating this pathogen. Rapid techniques for isolation of different types of nucleic acids have been developed and fragments of interest identified. Work will be started soon for achieving production of specific antigens for potential immunodiagnostic and immunoprophylactic use and identification of enzymes, their genes, and production of enzymes, especially to develop drug targeting systems for *in vitro* screening.

Identification of M. leprae antigens and their role in host-parasite relationship. Several *M. leprae* antigens including some specific ones have been identified. These antigens will now be studied regarding how they are handled by the host, especially with reference to development of protection and hypersensitivity. Studies will also be undertaken on antigen excretion and its relation to bacterial load and clearance in order

to understand their role in host-parasite relationship.

Surgical studies. Surgical correction of deformities forms an important area of research of rehabilitation in leprosy cases. Newer techniques and approaches for the management of plantar ulceration and tarsal disintegration and disorganization of tarsal anesthetic foot will be evaluated for their usefulness and feasibility under Indian conditions.

Immunoprophylaxis. Efforts to evolve, test, and evaluate feasibility and use effectively of immunotherapeutic and immunoprophylactic agents against leprosy will continue to receive attention during the 8th Plan period. It is expected that preclinical toxicological evaluation of candidate vaccines initiated in the 7th Plan will be completed early during the 8th Plan period. Large-scale multicentric trials of some of the promising candidate vaccines are expected to be initiated. Field trials of one of the candidate antileprosy vaccines, i.e., ICRC, initiated in the 7th Plan period will be continued and the information on usefulness of this immunoprophylactic agent is expected to become available by the end of the 8th Plan period.

Immunopathology. Studies on neuroimmunohistological studies for detecting early nerve involvement, experimental and immunological studies of nerve involvement, immunological and cellular studies on leprosy granulomas in skin and nerves, and ultracytochemical studies (especially of cases of lepra reaction) are in progress and will continue in 8th Plan period.—Paper circulated by the Indian Council of Medical Research at the Expert Committee Meeting convened by it in Delhi, 5 July 1990.—Kusht Vinashak Aug. (1990) 14–18.

1988–89 Annual Report of the Director-General, Indian Council of Medical Research. Following are the relevant details on leprosy from this ICMR 1988–1989 annual report—RCH

Approximately, a third of all the leprosy patients in the world i.e., approximately 4.0 million, are estimated to be in India. As the Government of India has set a target of eradication of leprosy by the end of this century, the research programs of the ICMR in leprosy are geared to meet the requirements of the eradication program. Thrust areas of research in leprosy include epidemiology, immunology, chemotherapy, and immunoprophylaxis. These research activities are carried out mainly through the Council's Central JALMA Institute for Leprosy (CJIL) in Agra, Research Cell at the Central Leprosy Teaching and Research Institute (CLTRI) Chingleput, and a large number of task force and open-ended research projects.

Chemotherapeutic studies. Long duration of therapy and emergence of dapsone resistance have been considered as two major problems in effective chemotherapy of leprosy. To prevent drug resistance and to develop effective treatment for drug-resistant patients, studies on multidrug regimens have been undertaken by the CJIL, Agra, and the CLTRI, Chingleput. Short-course chemotherapy regimens are being evaluated to achieve effective cure in patients with paucibacillary leprosy. Multidrug regimens containing rifampin were found to be generally efficacious. However, there were instances of the currently advocated 6 months regimen being inadequate in patients of paucibacillary leprosy. Additional dapsone monotherapy for 6 more months in these patients significantly reduced the incidence of treatment failure.

Persistence of infection despite multidrug therapy has been demonstrated in 10%–15% of patients of multibacillary leprosy with higher bacillary index (BI). Long-term follow-up studies are continuing for finding out appropriate drug regimens and optimum duration of therapy for patients with multi- and paucibacillary leprosy.

Studies carried out at Chingleput over a 5-year period suggest that in spite of a rapid killing effect and reduction in infection load with rifampin, the incidence and prevalence of leprosy has not markedly reduced. Long-term follow-up studies to confirm these findings are underway.

Clinical studies. Clinical studies are in progress for a better understanding of pure neuritic leprosy evolution of early lesions, indeterminate leprosy, and prognostic markers in paucibacillary leprosy. The results of the study on pure neuritic leprosy have shown that the clinical spectrum of neural leprosy cannot be predicted from the number and distribution of nerves involved or from the lepromin status.

Methods for rapid determination of viability of M. leprae. In view of the long time taken for the multiplication of *M. leprae* in mouse foot pad, a need has been felt for developing *in vitro* methods for rapid determination of viability of *M. leprae.* Standardization of an ATP assay, which is sensitive enough to detect very small numbers of lepra bacilli even after 3 years of treatment, has been developed by the CJIL. An ATP decay system for drug-sensitivity screening has also been standardized.

Histopathological studies. Studies on characterization of the cells in leprosy granuloma across the disease spectrum were continued at the CJIL, Agra. Soluble

factors, which could modulate the process of granuloma formation, have been identified and are being characterized. Granuloma cells, lymphocytes and macrophages have been characterized. These studies have been extended to include immunohistology of lesions during the course of immunotherapy with various mycobacterial vaccines. Attempts are being made to assess the correlation between histological features of Mitsuda reaction and morphological changes in skin lesions.

Ultracytochemical studies. Ultracytochemical studies for characterizing the lysosomal morphology and functions are also in progress at the CJIL, Agra. These have now been extended to include studies to follow the events in different types of therapy.

Immunological studies. Early diagnosis of leprosy, using simple reliable tests, which could be done in the field, is vital for ensuring early case finding. Several studies aimed at isolation, purification and characterization of antigens from *M. leprae,* which might be valuable as immunodiagnostic tools, are being conducted. A filter paper method for the collection of samples has been established and the test is now being assessed in the field. The technique is also being used for studying the effect of treatment on humoral responses. Immune status of the individual plays a major role in determining the progression and regression in leprosy, and may be implicated in drug reaction as well as drug resistance. Several investigations are therefore continuing to explore different aspects of immune function in leprosy.

Studies on immune responses to the antigens of *M. leprae* and related mycobacteria are being carried out at the CJIL, Agra, to characterize *M. leprae*-specific and nonspecific antibodies. This will be of use in developing a serodiagnostic test for leprosy, in understanding the role of antibodies in the immunopathology of the disease, and in characterization of the antigens involved in the modulation of cell-mediated immunity.

Studies are also being carried out at the CJIL, Agra, to identify *M. leprae*-specific and crossreactive antigens in immune complexes in patients of untreated leprosy. Studies on the role of circulating immune complexes in the pathogenesis of the disease, especially in the reactional states, are being continued. Attempts are being made to establish model systems in animals and to study the interaction of mycobacteria with human complement system.

Some environmental mycobacteria have been considered to be pathogenic and have been found to affect the protection conferred by different vaccines. Studies have been started to elucidate the role of saprophytic mycobacteria in immune modulation.

Surgical studies. Long-term follow-up studies on the correction of claw hand and single-stage procedures for reconstructive surgery are in progress at the CJIL, Agra. Studies are also being carried out at this institute on finger dynamography for the assessment of the effect of surgical correction, the management of tarsal disintegration, and the correction of ulnar palsy thumb by dermodesis and flexor pulley advancement.

Metabolic studies. Studies on metabolism and growth of *M. leprae* are being initiated to understand its metabolic requirements in order to achieve its cultivation. These studies at the CJIL have provided important information about metabolic cycle of *M. leprae* and substrates important for *M. leprae.* Other significant factors, like pH and temperature, have also been identified and studies are in progress to enlarge the available information on essential nutrients and factors conducive for ATP synthesis by *M. leprae.* Investigations have also been initiated for studying the kinetics of transcription and translation in *M. leprae* and other mycobacteria.

Techniques for identification and typing of M. leprae. There is need to develop parameters for identification of *M. leprae* from *in vitro* and *in vivo* sources. Characterization of subtypes and strains of *M. leprae* is important for a better understanding of the epidemiology of the disease. Several new methods have been developed at the CJIL, Agra. Studies are in progress to test their applicability in clinical situations.

Molecular biological aspects. A new economical stepwise procedure to isolate different types of nucleic acids from mycobacteria and the methods to identify RNA genes have been developed at the CJIL, Agra. The fragments comprising specific sequences could be identified in *M. leprae* and *M. tuberculosis.* Studies are continuing to clone and sequence these for their possible use as probes.

Pharmacological studies. For a better understanding of suitable combinations of drugs for the treatment of leprosy, drug interaction studies are in progress. The permeability of various drugs in mycobacteria is being studied. Immunopharmacological studies to monitor the anti-DDS antibodies and the effect of drugs on immune system have been initiated.

Field studies. A field unit of the CJIL, established at Avadi in Chingleput district of Tamil Nadu for undertaking long-term studies on chemotherapy and immunoprophylaxis of leprosy, has initiated studies on epidemiological and immunological characterization of the population. The methods for examination, skin smear reporting, reading of skin tests, analysis of batch-to-batch variation in skin test antigens and their specificity have been tested in endemic and nonendemic areas. Baseline data have been collected for the commencement of vaccine trials with candidate vaccines.—Pages 11–14 of the report

Nepal. *Leprosy Control Project Annual Report 1988–1989.* Program coverage remained the same as last year, only the number of fieldworkers decreased slightly. But thanks to the increasing number of patients released from treatment and released from observation, the actual workload/worker stayed about the same.

The downward trend in number of patients registered for treatment, paralleled by decreasing registered prevalence in all districts, is according to expectation in a control program with extensive MDT coverage. Although we are now 7 years beyond the introduction of MDT, and though the falling prevalence rates are a hopeful sign, there are as yet no signs that the incidence of leprosy in our control area is also decreasing. In fact the numbers of new patients found, the case detection rates, and the child proportions among new cases have all increased since last year. This increase was most marked for the child proportion, which increased from 3% to 5.5% in the field. Although it is still too early to draw the definite conclusion that this rise represents an increased incidence of leprosy in the population, it does cause serious concern and will need to be closely monitored in the coming year.

The total number of patients on register has been the same for the last 3 years, but the number of patients released from observation (i.e., deducted from the registers) is increasing. Since considerable numbers among those RFO patients still need attention (e.g., ulcer care, footwear, prevention of further disabilities), they are likely to cause an extra workload in the future.

Treatment regularity (or better: clinic attendance regularity) remained just under 80% average (just over 80% for MDT patients only). Defaulter rates went up by 1% from last year.

MDT coverage increased steadily from 17% in 1983 to 75% this year (field figures). In the referral centers some 45% of patients are still on DDS monotherapy. The reason for this often is that patients live too far away from the clinic to attend more than a few times a year (and therefore do not qualify for MDT). Nevertheless, this means that > 1800 patients in the program do not yet benefit from MDT. Among them, some 650 BL/LL patients are still in danger of developing secondary dapsone resistance. This causes serious concern and, therefore, we are seeking to implement an alternative MDT which can be taken largely unsupervised.

The low relapse rate of 1% confirms the success of the WHO multidrug therapy found by other control programs. It will be interesting to see in the next few years, whether the change in "MB" criteria implemented after 1986, will result in a further significant decrease of the relapse rate.—From the Discussion and Conclusions

Nigeria. *LEPRA in Nigeria.* A new agreement was signed at the end of June between the Nigerian Ministry of Health and LEPRA, the British Leprosy Relief Association, whereby LEPRA will provide support worth more than £0.5 million over the next 3 years for a leprosy control program in some of the areas of Nigeria worst affected by leprosy. The aim of the LEPRA program will be to provide MDT to all registered patients who need it in three targeted areas. The program will serve a total population of more than 12 million, with an expected caseload of at least 30,000 patients.—ILEP FLASH Aug. (1990) 2.

Moniaya Tuberculosis and Leprosy (TBL) Control Services 1989 Annual Report. Beginning with the initial fund raising in 1940, the Ogoja Leprosy Scheme (Cross River State, Nigeria) has been in operation for almost 50 years. The first medical missionaries arrived in Ogoja to care for leprosy patients in 1946. From 1967–1970, the government health ministry operated the facilities, but control was returned to the Ogoja Diocese in 1986. Multiple drug therapy (MDT) was first used at Moniaya Leprosy Hospital in 1982 and introduced throughout the three local government areas in 1986. During 1989, the total number of registered leprosy patients in Ogoja, Ikom and Obudu declined from 681 to 560. The National TBL Control Program was made a "health priority" in 1989, and there continues to be integration of leprosy and TB services into the basic health services of the area.—From the report by Sr. Dr. Cecily Bourdillon, Medical Superintendent

Switzerland. *Council for International Organizations of Medical Sciences (CIOMS) holds XXIV Round Table Conference.* CIOMS, of which the International Leprosy Association is a founding member, held its

latest Round Table Conference on the subject of *Genetics, Ethics and Human Values: Human Genome Mapping, Genetic Screening and Therapy,* in Tokyo and in Inuyama City, Japan, 22–27 July 1990. The Conference was held under the auspices of the Science Council of Japan, and cosponsored by the World Health Organization and the United Nations Educational, Scientific and Cultural Organization. It was the fifth in a series entitled *Health Policy, Ethics and Human Values: An International Dialogue,* begun in Athens in 1984. The 102 participants came from 24 countries, representing all continents.

In addition to biomedical scientists and physicians, the participants represented a wide range of disciplines including sociology, psychology, epidemiology, law, social policy, philosophy and theology, and brought with them experience in hospital and public health medicine, universities and private industry, and the executive and legislative branches of government. Through presentations and discussions in plenary sessions and working groups, they reached broad agreement on a number of central issues. At its final session the Conference agreed on the following Declaration.

"The Declaration of Inuyama"

I. Discussion of human genetics is dominated today by the efforts now under way on an international basis to map and sequence the human genome. Such attention is warranted by the scale of the undertaking and its expected contribution to knowledge about human biology and disease. At the same time, the nature of the undertaking, concerned as it is with the basic elements of life, and the potential for abuse of the new knowledge which the project will generate are giving rise to anxiety. The Conference agrees that efforts to map the human genome present no inherent ethical problems but are eminently worthwhile, especially as the knowledge revealed will be universally applicable to benefit human health. In terms of ethics and human values, what must be assured are that the manner in which gene mapping efforts are implemented adheres to ethical standards of research and that the knowledge gained will be used appropriately, including in genetic screening and gene therapy.

II. Public concern about the growth of genetic knowledge stems in part from the misconception that while the knowledge reveals an essential aspect of humanness it also diminishes human beings by reducing them to mere base pairs of deoxyribonucleic acid (DNA). This misconception can be corrected by education of the public and open discussion, which should reassure the public that plans for the medical use of genetic findings and techniques will be made openly and responsibly.

III. Some types of genetic testing or treatment not yet in prospect could raise novel issues—for example, whether limits should be placed on DNA alterations in human germ cells because such changes would affect future generations, whose consent cannot be obtained and whose best interests would be difficult to calculate. The Conference concludes, however, that for the most part present genetic research and services do not raise unique or even novel issues, although their connection to private matters such as reproduction and personal health and life prospects, and the rapidity of advances in genetic knowledge and technology accentuate the need for ethical sensitivity in policymaking.

IV. It is primarily in regard to genetic testing that the human genome project gives rise to concern about ethics and human values. The identification, cloning, and sequencing of new genes without first needing to know their protein products greatly expand the possible scope for screening and diagnostic tests. The central objective of genetic screening and diagnosis should always be to safeguard the welfare of the person tested: test results must always be protected against unconsented disclosure, confidentiality must be ensured at all costs, and adequate counseling must be provided. Physicians and others who council should endeavor to ensure that all those concerned understand the difference between being the carrier of a defective gene and having the corresponding genetic disease. In autosomal recessive conditions, the health of carriers (heterozygotes) is usually not affected by their having a single copy of the disease gene; in dominant disorders, what is of concern is the manifestation of the disease, not the mere presence of the defective gene, especially when years may elapse between the results of a genetic test and the manifestation of the disease.

V. The genome project will produce knowledge of relevance to human gene therapy, which will very soon be clinically applicable to a few rare but very burdensome recessive disorders. Alterations in somatic cells, which will affect only the DNA of the treated individual, should be evaluated like other innovative therapies. Particular attention by independent ethical review committees is necessary, especially when gene therapy involves children, as it will for many of the disorders in question. Interventions should be limited to conditions that cause significant disability and not employed merely to enhance or suppress cosmetic, behavioral or cognitive characteristics unrelated to any recognized human disease.

VI. The modification of human germ cells for therapeutic or preventive purposes would be technically

much more difficult than that of somatic cells and is not at present in prospect. Such therapy might, however, be the only means of treating certain conditions, so continued discussion of both its technical and its ethical aspects is therefore essential. Before germ-line therapy is undertaken, its safety must be very well established, for changes in germ cells would affect the descendants of patients.

VII. Genetic researchers and therapists have a strong responsibility to ensure that the techniques they develop are used ethically. By insisting on truly voluntary programs designed to benefit directly those involved, they can ensure that no precedents are set for eugenic programs or other misuse of the techniques by the state or by private parties. One means of ensuring the setting and observance of ethical standards is continuous multidisciplinary and transcultural dialogue.

VIII. The needs of developing countries should receive special attention, to ensure that they receive their due share of the benefits that ensue from the human genome project. In particular, methods and techniques of testing and therapy that are affordable and easily accessible to the populations of such countries should be developed and disseminated whenever possible.—

From materials received from Dr. Z. Bankowski, Secretary-General. CIOMS

U.K. *TAMILEP English Language Booklist 1990.* The following materials are available from The Leprosy Mission International, 80 Windmill Road, Bentford, Middlesex TW8 0QH, U.K.

Books are grouped by various categories of health workers. Because of increasing demand, TLM may restrict the number of free items to any one individual. Students should order through their college principals. Training institutions with currency exchange problems should order through their ILEP coordinators.

No.		Price (£)
	Leprosy Specialists	
101	*Leprosy* edited by R. C. Hastings (1985) Comprehensive textbook on leprosy. Paperback (developing countries only) Hardback (other countries)	 4.00 65.00
103	*Surgical Reconstruction and Rehabilitation in Leprosy* by E. P. Fritschi (1984) Basic textbook for surgical management of complications in leprosy.	4.00
106	*Chemotherapy of Leprosy for Control Programmes: WHO Tech. Rep. Ser. 675* (1982) Outlines multidrug regimens for leprosy.	1.65
	General Practitioners	
201	*An Atlas of Leprosy* by Sasakawa Memorial Health Foundation (1983) 56 pages of laminated color photos showing clinical leprosy in people with light-brown skin.	Free
202	*Leprosy in Africans* by W. K. Jacyk (1986) 52 color photos with short notes in French and English in the one volume.	Free
203	*Care of the Eye in Hansen's Disease* by M. E. Brand (2nd ed. 1987) 32-page leaflet; discusses management of eye complications in leprosy.	Free
204	*Implementing MDT for Leprosy* by A. C. McDougall (4th ed. 1988) OXFAM Practical Guide No. 3 Update of *Questions and Answers on the Implementation of MDT for Leprosy.*	2.95
205	*Insensitive Feet* by P. W. Brand (1986) Practical handbook on foot problems in leprosy.	Free
207	*Leprosy* by A. Bryceson & R. Pfaltzgraff (3rd rev. 1989) 5 chapters revised extensively + 1 new chapter on *M. leprae*; some color illustrations. Developing countries only Other countries	 2.00 9.95
	Medical Students	
301	*Essentials of Leprosy* by J. M. H. Pearson (4th ed. 1986) 48 pages which review briefly epidemiology, clinical features, diagnosis, complications, treatment, rehabilitation and control of leprosy.	Free
	Paramedical Professionals	
402	*A Footwear Manual for Leprosy Control Programmes, Part I* edited by P. J. Neville (1983) Information for those who plan footwear programs.	Free
403	*A Footwear Manual for Leprosy Control Programmes, Part II* edited by P. J. Neville (1983) Construction details for the workshop technician.	1.00
404	*A Simple Sandal for Insensitive Feet* edited by P. J. Neville (1989) 2 chapters taken from Footwear Manual II.	Free
405	*Technical Guide for Smear Examination for Leprosy* by D. L. Leiker & A. C. McDougall (2nd rev. 1987) How to take smears, stain, and do a bacteriological examination.	Free
406	*The Social Dimension of Leprosy* by A. Kaufmann, S. Gebre Mariam & P. J. Neville (1982) To help staff understand leprosy from patient's point of view.	Free
407	*Health Education in Leprosy Work* by L. Van Parijs (1986) Training manual of 8 units: leprosy from patients' and community's points of view (units	

1–4); educating patients/community about leprosy (units 5–8). Free

408 *A Trainer's Guide to Health Education in Leprosy Work* by L. Van Parijs (1987)
Guidelines for those who conduct training sessions using the manual *Health Education in Leprosy Work.* Free

409 *Disabled Village Children* by D. Werner (1987)
Guide for rehabilitation and community health workers; many practical ideas for village-based rehabilitation—645 pages; many line drawings. 4.20

410 *Skin Smears for Leprosy* (ALERT, Ethiopia) edited by T. Nilsson & G. Sparell (1989)
Basic manual for laboratory technicians and supervisors; many clear line drawings; minimal text. Free

501 *Preventing Disability in Leprosy Patients* by J. M. Watson (1986)
For health staff responsible for many leprosy patients; covers main causes of disability in leprosy and action needed to deal with it. 1.50

Senior Health Workers, Nurses

502 *A Guide to Health Education in Leprosy* by P. J. Neville (6th ed. 1987)
"Messages" on 11 topics for patient education: hand, foot, eye care; first aid; treatment of wounds; treatment of leprosy, etc. Free

503 *A Guide to Leprosy for Field Staff* (ALERT, Ethiopia) (2nd ed. 1983)
For paramedical workers who have responsibility for leprosy patients in outpatient clinics. 1.00

Junior Health Workers

601 *Essential Action to Minimize Disability in Leprosy Patients* by J. M. Watson (1986)
For general medical staff who treat a few leprosy patients; 32 pages taken from *Preventing Disability in Leprosy Patients.* Free

602 *A Practical Guide to the Diagnosis and Treatment of Leprosy in the Basic Health Unit* by H. W. Wheate & J. M. H. Pearson (3rd ed. 1985)
To assist health-center staff recognize early leprosy and treat it confidently. Free

Program Managers

701 *On Being in Charge* by R. McMahon, E. Barton & M. Piot (1980)
Guide for middle-level management in primary health care. 6.00

702 *A Guide to Leprosy Control* by WHO (2nd ed. 1988)
Guidelines for management of leprosy control programs as recommended by WHO. 8.75

707 *Manual of Training: Multiple Drug Therapy for Leprosy* by Department of Health, The Philippines (1987)
Contains learning modules, session plans, handouts and evaluation checklists. Written for The Philippines but useful for other countries wanting to write their own manual. Free

Trainers

801 *Helping Health Workers Learn* by D. Werner & B. Bower (1982)
248 pages full of ideas, methods, guidelines for those who teach at village level. 4.00

802 *Teaching Health-Care Workers* by F. Abbatt & R. McMahon (1985)
Detailed guide for teachers of health care workers; simply written; well illustrated. 3.95

805 *Education for Health; A Manual on Health Education in Primary Health Care* by WHO (1988)
For those who train health staff and community workers to carry out health education. Chapters on health education with individuals, groups, communities; planning for health education; working with people. 13.50

Journal

1000 *Partners*
Journal published twice a year for paramedical workers; articles on leprosy and other primary health care topics in English, French, Portuguese, and Indonesian. Free (small charge in India)

ADDITIONAL READING LIST

Leprosy Specialists

204	*Implementing MDT for Leprosy*	2.95
406	*The Social Dimension of Leprosy*	Free
702	*A Guide to Leprosy Control*	8.75

General Practitioners

406	*The Social Dimension of Leprosy*	Free
407	*Health Education in Leprosy Work*	Free
501	*Preventing Disability in Leprosy Patients*	1.50
702	*A Guide to Leprosy Control*	8.75
805	*Education for Health*	13.50

Medical Students

207	*Leprosy* by Bryceson & Pfaltzgraff	9.95
	(Developing countries)	2.00
702	*A Guide to Leprosy Control*	8.75

Paramedical Professionals

205	*Insensitive Feet*	Free
207	*Leprosy* by Bryceson & Pfaltzgraff	9.95
	(Developing countries)	2.00
502	*A Guide to Health Education in Leprosy*	Free
503	*A Guide to Leprosy for Field Staff*	1.00

Senior Health Workers, Nurses

406	*The Social Dimension of Leprosy*	Free

601	*Essential Action to Minimize Disability in Leprosy Patients*	Free
707	*Manual of Training: MDT for Leprosy*	Free
	Junior Health Workers	
502	*A Guide to Health Education in Leprosy*	Free
	Program Managers	
106	*Chemotherapy of Leprosy for Control Programmes*	1.65
204	*Implementing MDT for Leprosy*	2.95
207	*Leprosy* by Bryceson & Pfaltzgraff (Developing countries)	9.95 2.00
402	*A Footwear Manual for Leprosy Control Programs Part I*	Free
	Trainers	
207	*Leprosy* by Bryceson & Pfaltzgraff (Developing countries)	9.95 2.00
406	*The Social Dimension of Leprosy*	Free
407	*Health Education in Leprosy Work*	Free
408	*A Trainer's Guide to Health Education in Leprosy Work*	Free
702	*A Guide to Leprosy Control*	8.75
707	*Manual of Training: MDT for Leprosy*	Free
	BASIC BOOKLIST FOR LIBRARIES General and Clinical Leprology	
101	*Leprosy* edited by Hastings (Developing countries)	65.00 4.00
201	*Atlas of Leprosy*	Free
301	*Essentials of Leprosy*	Free
503	*A Guide to Leprosy for Field Staff*	1.00
602	*A Practical Guide to the Diagnosis and Treatment of Leprosy in the Basic Health Unit*	Free
	Laboratory	
405	*Technical Guide for Smear Examination for Leprosy*	Free
	Control Program Management	
106	*Chemotherapy of Leprosy for Control Programmes*	1.65
702	*A Guide to Leprosy Control*	8.75
707	*Manual of Training: MDT for Leprosy*	Free
	Disability Prevention, Education of Patient and Public	
501	*Preventing Disability in Leprosy Patients*	1.50
	Rehabilitation and Social Aspects	
103	*Surgical Reconstruction and Rehabilitation in Leprosy*	4.00
406	*The Social Dimension of Leprosy*	Free
409	*Disabled Village Children*	4.20
	Education (Including Patient and General Public)	
407	*Health Education in Leprosy Work*	Free
802	*Teaching Health-Care Workers*	3.95
805	*Education for Health*	13.50
	Management	
701	*On Being in Charge*	6.00
	Journals	
1000	*Partners*	Free

Wellesley Bailey Scholarship. We wish to inform readers that the Wellesley Bailey Scholarship fund is now closed.—The General Director, The Leprosy Mission International

U.S.A. *ALM International education and training materials.* Produced by Dr. Roy Pfaltzgraff, under the auspices of TAMILEP, ALM is offering "Leprosy a Curable Disease" in three forms: a) a set of seven full color posters of leprosy for health information in community health centers, dispensaries, clinics, and hospitals; b) 28 individual pictures in full color depicting leprosy and its complications for classroom use; and c) handy ready-reference pocket-size diagnostic cards. These materials are available, free of charge, with either English or French text. Order English versions from: ALM International, 1 ALM Way, Greenville, SC 29601, U.S.A. Order French versions from: Damien Foundation, 16 rue Stevin, B-1040 Brussels, Belgium.

Heiser Program's first decade. The Heiser Program for Research on Leprosy was initiated in 1974 and made its first grants for research in 1975. Because it took some time for the existence of the program to become generally known, there were few applications and thus only a modest number of awards in the initial year. Since that time, however, the supply of funds has been the limiting factor. The present report includes all of the research awards from 1975 to 1986 that had terminated by the time the review was initiated in 1988. Thus, it covers slightly more than a decade but provides a co-

herent picture of the activity during the formative period of the program.

The guidelines that were established for the program at the beginning have been maintained without major change, placing the primary emphasis on training of young investigators in leprosy-related research. To provide flexibility in the identification and selection of promising candidates, applications for postdoctoral fellowships were accepted either directly from the candidate or from the head of a laboratory engaged in leprosy research. A second type of award, the small research grant, was included, since it was recognized that many useful projects might be promoted by this mechanism. In a third area, visiting research awards were established to provide travel funds for collaborative studies and for studies involving clinical leprosy.

The 103 research awards represented in this report include all three of these areas. There were a total of 53 postdoctoral fellowships: 19 by direct application and 34 by application of a head of laboratory. Research grants numbered 38, awarded to 30 different investigators, and there were 12 visiting research awards. Details on the grants in each of these categories are provided in tabulated form in the *Appendix* to this report.

Reflecting the international nature of leprosy research, awards were made to investigators in 18 different countries. Nevertheless, a substantial majority of all recipients of research funds were in the United States. This may seem surprising, but it appears to depend upon the strength of the biomedical research enterprise in this country and the widespread reawakening of interest in leprosy. India, with its large burden of patients afflicted with leprosy, has also developed an active program of research on the disease, and ranked second to the United States in the number of awards, all in the fellowship category.

Heiser grantees have been major contributors to all of the new developments in the understanding of leprosy that have emerged during the period of this report.—From the report by Maclyn McCarty, M.D., Chairman, Scientific Advisory Committee

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New leprosy cases in 1990. There were 203 leprosy patients newly diagnosed in the United States in 1990. California reported 76 new cases, Texas 37, Hawaii 35, New York 15, and Massachusetts and American Samoa each had 10 new cases.—MMWR 39 (1991) 941–942.

We were deeply saddened to learn of the death of Dr. Dharmendra in New Delhi on 10 March 1991 at the age of 91. Dr. Dharmendra was an Honorary Vice-President of the International Leprosy Association, and well known to generations of leprologists. A suitable obituary for Dr. Dharmendra will be forthcoming in the JOURNAL.