Lepr. Rev. (1979) **50,** 337–346

Abstracts

1. MICROBIOLOGY

98. KATO, L., MANKIEWICZ, E. & de THOKOLY, I. **An approach for the *in vitro* screening of drugs for activity against leprosy.** *Experientia,* 1978, 34/10.

After an introduction stressing the difficulties of assessing new drugs for their action against *M. leprae,* the authors indicate the disparity between the efficacy of a range of drugs against *M. leprae* as measured in mouse and man. Four drugs, streptomycin, isoniazid, P.A.S., and ethionomide, completely suppress multiplication in mice but have little or no effect in man. Two drugs, a thiosemicarbazone and cycloserine, partially suppress multiplication in the mouse and have little effect in man and ethambutol has no effect in either mouse or man. Only DDS and rifampicin have a similarly good effect in both animals. Against this background the authors assess the *in vitro* sensitivity of three strains of *M. scrofulaceum* isolated by Professor Skinsnes from leprosy patients and one strain isolated from a patient with pulmonary mycobacteriosis to the same range of drugs. All strains are sensitive or partially sensitive to 1μg/ml rifampicin, but only the strains from leprosy patients are sensitive to 25 μg/ml of DDS. None of the strains are sensitive to any of the other drugs.

This apparent similarity between the sensitivity of Skinsnes' strains *in vitro* and therapeutic efficacy in man is taken as the basis for the authors recommendation that *in vitro* sensitivity tests with these strains should be used for primary selection of new leprosy drugs.

Comment. The significance of the disparity between the *in vitro* results and those obtained in experimental *M. leprae* infection of mice is not discussed and the difference in dose of DDS effective in mouse and man and that effective in the *in vitro* studies is barely mentioned. To achieve the *in vitro* suppressive level of 25 μg/ml a 70 kilogram individual would require more than 1700 mg of DDS to be equally distributed over his entire volume. The selection of any one group of mycobacterial strains with very limited drug sensitivity as a primary screening method for the selection of new drugs seems a thoroughly bad recommendation. Nevertheless organisms of this kind should be amongst the battery of strains, thoroughly representative of the genus *Mycobacterium* that are used for screening procedures.

J. L. Stanford

99. BAPAT, C. V. & MODAK, M. S. **Growth of the ICRC bacilli in the footpad of mice.** *Lepr. India,* 1978, v.50, 144–155.

The work reported here is part of a comparative study of *Mycobacterium leprae* and the ICRC bacillus, which was originally isolated in tissue culture from human leprous nodules, and subsequently adapted to bacteriological culture media. The strain selected was C-44, isolated by S. R. Khanolkar, a slow-growing non-chromogenic acid fast bacillus with bacteriological characteristics similar to those of *M. intracellulare,* which was known to give "lepromin" reactions very similar to those of ordinary lepromin. Other strains had previously been shown by Dr K. Ranadive, Dr C. V. Bapat and their co-workers to produce foot-pad infections in mice similar to those due to *M. leprae,* and in some cases there were deformities suggestive of footdrop. The present object was to study multiplication and growth patterns.

In normal CBA mice the organism gave limited multiplication in the footpad, reaching a plateau after about 6 months, with a maximum of about 3×10^7 organisms. The bacilli were located principally in skeletal muscle or in macrophages adjacent to it. There was no nerve involvement. However, in thymectomized irradiated (T/900r) mice a few bacilli were observed in a local nerve twig and in the sciatic nerve, and there was a mild foot-drop. The generation time was estimated at 15 to 20 days.

The reported results are so similar to those associated with *M. leprae* that one immediately has to ask, why is this organism not *M. leprae* or an organism closely related to it which has become slightly modified through adaptation to culture media? Obviously there is more data needed, the biochemical and serological properties of the organism and its sensitivity to drugs. But the question is perplexing when one recollects that isolation of ICRC bacilli of this type has been going on from human leprosy lesions for almost 20 years, and the fact that the strains appear not to be identical does not simplify the problem. Surely there is a need for some other group of workers to repeat and confirm these findings.

D. S. Ridley

100. SEOK DON PARK. **Microbiological studies of plantar ulcers in leprosy patients.** *Korean Medical Abstracts,* 1979, v. 9, 27. (original in Korean).

From the leprosy patients hospitalized at the Korean National Leprosarium on Sorokdo Island, forty-five leprosy patients with plantar ulcers were selected randomly for microbiological studies.

A total of 84 strains of bacteria, with the most common being Neisseria sicca (25 strains: 29.8%), 34 strains (40.5%) were present as a pure growth and 50 strains (59.5%) were present in ulcers with multiple infection. Antibiotic susceptibility tests indicated that bacterial isolates were rather highly susceptible to gentamicin and kanamycin, but varying degree of isolates were resistant to 12 antibiotics including streptomycin, rifampicin, lincomycin, penicillin, terramycin, colimycin etc. From a total of 30 plantar ulcers, 17 ulcers produced 24 strains of fungi and 1 strain of Balantidium coli. They consisted of 17 strains of saprophytic fungi (70.8%) and 7 strains of yeast-like fungi (29.2%).

Of the culture media for Balantidium coli, Sabouraud's glucose medium is the most specific and selective that the author found.

The Abstracts which follow are reprinted from the Tropical Diseases Bulletin, June, 1978, *through the courtesy of the Director, Bureau of Hygiene and Tropical Diseases, London. They are classified according to subject.*

101. KIRCHHEIMER, W. F. **Experimental transmission of leprosy world-wide.** *Lepr. India,* 1978, v. 50, No. 3, 371–374.

This short article emphasizes the need in leprosy research for experimental animals which would present fewer problems than do the armadillo and the mouse. Reference is made to the European hedgehog, the slender loris (India), the Korean chipmunk, and the white-handed gibbon (Malaysia) in all of which some preliminary work has shown promise.

T. F. Davey

102. HASTINGS, R. C. **Growth of sulfone-resistant *M. leprae* in the foot pads of mice fed dapsone.** *Proc. Soc. Exp. Biol. Med.,* 1977, v. 156, No. 3, 544–545.

"One hundred and twenty-three viable isolates of *M. leprae* from skin biopsies of leprosy patients have been tested for sulfone resistance in the mouse foot pad since 1970. In 33 strains, growth occurred in animals fed 0.0001% (w/w) dapsone, but not at higher concentrations; in 22, growth occurred at 0.001 and 0.0001% (w/w) dapsone, but not at the higher concentration; and in 20 isolates, growth occurred at all three concentrations, 0.01, 0.001, and 0.0001% (w/w) dapsone. In each group, in animals fed the highest concentration of dapsone at which growth occurred, the number of bacilli harvested was significantly less than that in controls. Thus 75 strains of *M. leprae* had some degree of sulfone resistance, and with each degree of sulfone resistance, there was a threshold above which dapsone could still inhibit multiplication of the resistant strain in the mouse foot pad. This finding, in light of the probable mechanism of action of sulfones and mechanism of bacterial resistance to sulfones, strongly implies that maximal subtoxic dosages of dapsone are indicated in all leprosy patients with multibacillary disease treated with this drug."

2. IMMUNOLOGY, PATHOLOGY

103. GUPTA, S. C. *et al.* **Serum proteins and immunoglobulins in leprosy.** *Int. J. Lepr.,* 1978, v. 46, No. 1, 9–13.

"Serum proteins and immunoglobulins were studied in patients suffering from various types of leprosy. A significant increase in total protein and decrease in albumin was found in all types of leprosy except borderline-tuberculoid. Gamma globulin was found to be increased in all types. An increase of alpha-2-globulin in lepromatous, a decrease of beta globulin in borderline-lepromatous, and a decrease of alpha-2 and increase of beta globulin in borderline-tuberculoid were observed. These changes do not seem to be of diagnostic importance.

"A statistically significant increase of IgG in borderline-lepromatous and lepromatous, IgM in all types of leprosy and IgA only in lepromatous was found. The increase of different immunoglobulins in leprosy, especially the lepromatous type, suggests a humoral response which was found to be directly proportional to the severity of the lesion."

[See also *Trop. Dis. Bull.,* 1969, v. 66, abstr. 1039.]

104. HOGERZEIL, L. M. & PRABHUDASS, N. **Delayed hypersensitivity skin reactions to lepromins prepared from *M. leprae* and selected cultivable mycobacteria. Investigations at the Victoria hospital, Dichpalli.** *Lepr. India,* 1978, v. 50, No. 4, 560–565.

"Lepromins prepared from *M. leprae* and from selected cultivable mycobacteria were tested in 5 leprosy patients. Preparation M.W. showed the best correlation with true lepromin, especially in the group of TT patients."

105. COWDRY, E. V. **Cytological studies on globi in leprosy.** *Int. J. Lepr.,* 1978, v. 46, No. 2, 175–201.

It is valuable to have a reprinting of this little known classic, a study of globi made in 1939 which has not been bettered from some points of view, and deserves to be read in the original by those interested. The distribution of leprosy bacilli in various types of cell is described. The clumps of bacilli known as globi are classified as cigar packs, seed globi (more elongated structures) and giant globi, the latter being enveloped by a volume of "Schleim" (watery fluid and amorphous debris). These forms are regarded as specific for human leprosy, whereas rosettes are characteristic of rat leprosy, peripheral bodies of Johne's disease and large bundles embedded in much fat of water buffalo leprosy. Some space is devoted to the controversy of the period, that giant globi might be in lymphatics or other extra-cellular situations. This view is disposed of, though it is shown that in lymph nodes giant globi may communicate with sinuses. These globi are shown to be situated in, or derived from, giant cells. The author touches on a present day controversy when he remarks that granular forms of bacilli are not an expression of death because they occur in actively extending lesions.

[See *Trop. Dis. Bull.,* 1941, v. 38, 23.] *D. S. Ridley*

106. SENGUPTA, U., RAMU, G. & DESIKAN, K. V. **Assessment of Dharmendra antigen.** *Lepr. India,* 1978, v. 50, No. 4, 599–609.

"Dharmendra antigen has certain advantages over Mitsuda antigen and these have been enumerated. Consequently, a reappraisal of Dharmendra antigen has been done. A variation in the degree of lepromin reaction was noted when the tests were performed with different batches of Dharmendra antigen. This was found to be due to variation in the bacillary content which was further confirmed by dilution experiments. Standardization of the antigen by bacillary count has been found to give better results. Dharmendra antigen prepared with a concentration of 160 million bacilli per ml was found to give not only early lepromin reaction but also late reaction comparable to Mitsuda antigen. It was also found that with a concentration of 16 million bacilli per ml (one tenth the concentration of Mitsuda antigen), the results were consistent and reproducible."

107. REA, T. H. & LEVAN, N. E. **Lucio's phenomenon and diffuse non-nodular lepromatous leprosy.** *Arch. Derm.,* 1978, v. 114, No. 7, 1023–1028.

This is a retrospective study of 10 Mexican patients with diffuse non-nodular lepromatous leprosy who were admitted to hospital in Los Angeles because of the reactive phase known as Lucio's phenomenon. In 8 patients this occurred prior to the diagnosis and treatment of leprosy.

The authors describe the clinical, laboratory and histological findings, and stress the differentiation from erythema nodosum leprosum (ENL) reaction as shown by absence of fever and leucocytosis, no tenderness of reactive lesions, failure of response to thalidomide, and good response to anti-leprosy drugs such as dapsone and rifampicin. Similarities to ENL reaction include anaemia, raised erythrocyte sedimentation rate and immunoglobulins, good response to prednisone, and glomerulonephritis in 1 patient (although immune-complex deposition was not found on renal biopsy). Three patients were found to have lymphopenia and splenomegaly, and 4 developed typical ENL after the institution of dapsone therapy.

W. H. Jopling

108. MITTAL, M. M., MAHESHWARI, H. B., SAHA, K. & SHARMA, R. **Hepatic lesions in asymptomatic children of leprosy patients.** *Int. J. Lepr.,* 1978, v. 46, No. 1, 42–46.

Forty-two asymptomatic children of leprosy patients were studied for possible hepatic lesions, which were observed in 47%. In order of frequency, these were Kupffer cell hyperplasia, portal triaditis, focal necrosis and granuloma (4 cases). Acid-fast bacilli were found in 4 cases. There was no correlation between the hepatic lesions and skin test positivity to tuberculin or lepromin. The results provided considerable new evidence of bacillaemia in leprosy contacts.

[If confirmed the results would imply that the liver might be the site of a primary leprosy lesion, but a series of control patients would be needed. The photographs do not show any definite epithelioid cells, or group of cells sufficiently compact to be called a granuloma.]

D. S. Ridley

109. PATEL, P. J. & LEFFORD, M. J. **Specific and nonspecific resistance in mice immunized with irradiated *Mycobacterium leprae*.** *Infection & Immunity,* 1978, v. 20, No. 3, 692–697.

"Following subcutaneous inoculation of irradiated *Mycobacterium leprae* (I-ML) into the left hind footpad of mice, there was increased resistance to *Listeria monocytogenes,* indicative of macrophage activation, at the immunization site. In spite of the high level of localized macrophage activation which was proportioned to the immunizing dose of I-ML, no such activity could be demonstrated systematically in these mice, as evidenced by the absence of increased resistance to an intravenous challenge with *L. monocytogenes.* Under these conditions, I-ML-immunized mice were nonetheless resistant to intravenous infection with either *M. tuberculosis* or *M. bovis* BCG, and this immunity was transferred to normal recipients using spleen or lymph node cells. Neonatal thymectomy completely abolished the development of antimycobacterial immunity after vaccination with I-ML, but immunity was restored by an intraperitoneal infusion of synegeneic thymocytes. Systemic nonspecific resistance could be generated in I-ML-immunized mice by an intravenous injection of disrupted I-ML. This study reveals that, after subcutaneous vaccination with I-ML, there is local accumulation of activated macrophages at the inoculation site and a widespread distribution of lymphocytes which are sensitized to mycobacterial antigens. Nonspecific resistance is mediated by the former cells and specific antimycobacterial immunity by the latter."

110. PATEL, P. J. & LEFFORD, M. J. **Induction of cell-mediated immunity to *Mycobacterium leprae* in mice.** *Infection & Immunity,* 1978, v. 19, No. 1, 87–93.

"The immune response of mice to armadillo-derived, irradiation-killed *Mycobacterium leprae* (I-ML) was investigated. Following injection of 100 μg of I-ML into the left hind footpads of mice, a state of cell-mediated immunity (CMI) was engendered to antigens of *M. leprae.* The evidence for CMI was as follows: (i) development of delayed-type hypersensitivity to both human tuberculin purified protein derivative and soluble *M. leprae* antigens; (ii) T-lymphocyte-

dependent macrophage activation at the inoculation site; (iii) specific systemic resistance to the cross-reactive species *M. tuberculosis*; and (iv) immunopotentiation of the delayed-type hypersensitivity response to an unrelated antigen. The CMI induced by I-ML in aqueous suspension was greater than that obtained with the same antigen in water-in-oil emulsion, even though the latter generated a more severe reaction at the site of immunization. I-ML also induced a stronger CMI response than the corresponding dose of heat-killed BCG."

111. MASSOUD, A., NIKBIN, B., NAZARI, G. R., SYADAT, N. A. & ALA, F. **A study of cell-mediated immunity and histocompatibility antigens in leprosy patients in Iran.** *Int. J. Lepr.*, 1978, v. 46, No. 2, 149–153.

"Fifty-six male and 14 female leprosy patients, aged 11–62, were studied for cell-mediated immunity (CMI) and histocompatibility antigens. Healthy blood donors were used as normal controls. All patients were receiving anti-leprosy drugs. T and B cells were detected by E and EAC rosette formation technics, and the leukocyte migration test (LMT) was done in the presence of PHA. HLA antigens were defined by a modified N.I.H. lymphocytotoxicity test in order to type 48 patients and 100 controls.

"There was a significant difference ($P < 0.01$) in the number of T cells between tuberculoid and lepromatous forms of the disease as compared to normal controls. We did not observe any differences in EAC rosette cells. It should be noted that the migration index is significantly higher in controls than in leprosy patients for PHA.

"There are no significant differences in the distribution of the A locus antigens between leprosy patients and controls, although a higher percentage of A-11 was obtained in leprosy patients. A slight elevation of B5 antigen was observed but these results are preliminary and our information regarding the B locus is incomplete. Thus, it is difficult to establish any precise relationship between HLA antigen and leprosy at this stage."

112. BJUNE, G., DUNCAN, E., BARNETSON, R. STC. & MELSOM, R. ***In vitro* modulation of lymphocyte resonses to phytohaemagglutin by plasma in mother and baby at the time of birth. Increased lymphocyte responses in babies of mothers with lepromatous leprosy.** *Clin. Exp. Immunol.*, 1978, v. 32, No. 3, 517–522.

"Peripheral blood lymphocytes from nineteen healthy mothers, sixteen mothers with borderline tuberculoid leprosy and fourteen mothers with borderline or polar lepromatous leprosy, and their newborn babies, were stimulated *in vitro* with phytohaemagglutinin (PHA). The responses in medium supplemented by serum from a pool of healthy non-pregnant individuals were compared with responses in medium supplemented by plasma from the mothers or from their babies, to assay for the presence of non-specific effects on T-cell responses. It was found that plasma from the mothers at the time of labour profoundly suppressed their own lymphocyte responses to PHA. However, the lymphocyte responses of healthy mothers were not significantly suppressed when cultivated in the presence of plasma from the babies, indicating that the suppressive factor(s) of normal pregnancy did not pass the placental barrier. Plasma from mothers with leprosy had a greater inhibitory effect on their babies' lymphocytes than plasma from healthy mothers. This raises the possibility that plasma from leprosy patients contains suppressive factors other than those associated with pregnancy. Babies of lepromatous leprosy mothers, who might have been exposed to mycobacterial antigens *in utero*, had higher PHA responses than the other babies, possibly due to a compensatory reaction to early stresses in the immune system."

The immunological interaction(s) between pregnant lepromatous patients and their offspring raises important concepts and this paper will repay reading of the full text.

M. F. R. Waters

113. BJORVATN, B., NAAFS, B. & KRONVALL, G. **Stability of individual anti-mycobacterial precipitation patterns during treatment for lepromatous leprosy.** *Int. J. Lepr.*, 1978, v. 46, No. 2, 144–148.

"Sixty serum specimens obtained from 16 lepromatous patients at intervals during the first year of DDS treatment were studied in crossed immuno-electrophoresis against an *M. leprae* sonicate

for possible variations of specificities and titers of antimycobacterial antibodies. All sera tested showed antibody activity against *M. leprae,* the number of precipitation lines produced varying between two and seven. In individual patients the numbers and positions of the precipitation lines remained remarkably constant throughout the period of study."

3. CLINICAL

114. CARAYON, A.; COURBIL, J. L.; BRUN, M.; ROFFI, J.; MARTINE, J. Bilan de recherches physiopathologiques sur la névrite lépreuse. I. Rôle de la température, des microtraumatismes par élongation ou subluxation nerveuse et de la striction canalaire. [**A review of pathophysiological studies on leprous neuritis. I. Role of temperature, microtraumatisms by elongation or subluxation and canalar stricture.**] [CARYAYON.] *Méd. Trop.,* 1977, v. 37, No. 6, 637–654. II. Modifications de l'hémodynamique dans les troncs névritiques hanséniens (hypertension-ischémie fasciculaire. Part de la compression canalaire). [**II. Haemodynamic changes in the neuritic trunks in leprosy (fascicular hypertension and ischaemia. Role of canalar compression).**] [CARAYON, COURBIL & BRUN.] *Ibid.,* 655–678. III Dérèglements métaboliques dan la névrite lépreuse (action potentialisatrice bactério-immunologique). [**III. Metabolic disorders in neuritis (the potentiating effect of the bacterio-immunological processes).**] [CARAYON, ROFFI, MARTINE & BRUN.] *Ibid.,* 679–687. IV. Répercussions de la névrite lépreuse sur la conduction et la douleur nerveuses. [**IV. Nervous conduction and pain in neuritis in leprosy.**] [CARAYON.] *Ibid.,* 689–697. English summaries.

115. KAUR, S., MEHTA, S. K., KUMAR, B., CHAKRAVARTY, R. N. & SIDHU, H. K. **Involvement of the gastrointestinal tract in leprosy.** *Int. J. Lepr.,* 1978, v. 46, No. 1, 35–41.

"The published information about involvement of the gastrointestinal tract in leprosy is scanty and conflicting. Twenty-five patients having leprosy (L-15, B-5, T-5) were subjected to investigations pertaining to the gastrointestinal tract. . . .

"Correlation was not found between type of leprosy, malabsorption and jejunal histology. A sizeable population in the tropics, even normally, has disturbances of absorption tests and jejunal mucosa. The percentages of abnormalities detected in the stomach and small intestine were not significant. It can thus be concluded that the gastrointestinal tract remains unaffected in leprosy."

116. NAAFS, B. & VAN DROOGENBROECK, J. B. A. Intérêt en léprologie d'un indice névritique de gravité et d'évolutivité établi d'après la vitesse de conduction motrice dans les nerfs cubitaux et médians. [**Advantage in leprology of a neuritis index based on motor nerve velocity to appreciate the severity and the evolution of disorders in the ulnar and median nerves.**] *Méd. Trop.,* 1977, v. 37, No. 6, 757–762. English summary.

4. THERAPY

117. VAN DROOGENBROECK, J. B. A. & NAAFS, B. Neurolyse et artériolyse du nerf tibial postérieur dans la lèpre: étude comparative de leur action dans les ulcères plantaires atones. [**Tibial posterior nerve release and arteriolysis in leprosy: a comparative study of their action in atonic chronic ulcers.**] *Méd. Trop.,* 1977, v. 37, No. 6, 777–779.

"In an approach of neuritis treatment in leprosy, more than 130 nerve releases were performed with 26 concerning the posterior tibial nerve, and completed with arteriolysis.

"From these 26 releases 12 were performed for neuropathic disorders, and 14 for chronic ulcers.

"Eleven patients remained ulcer free after one year (75%), while in a control group this proportion was only about 30%. The difference is significant."

118. NAAFS, B. & VAN DROOGENBROECK, J. B. A. Décompression des névrites réactionnelles dans la lèpre: justification physiopathologique et méthodes objectives pour en apprécier les résultats. [**Nerve decompression in reversal reaction and ENL in leprosy: a pathological approach and objective method for evaluation of the results.**] *Méd. Trop.,* 1977, v. 37, No. 6, 763–770.

"... In this paper a pathophysiological model is presented, which may explain nerve damage during reversal reaction and ENL. The influe f nerve decompression and prednisolone is discussed. The authors are of the opinion that nerve surgery always should be done under prednisolone cover. An arbitrary numerical system—nerve index—is presented which makes it possible to control follow-up studies of nerve surgery in order to evaluate objectively its value. The different parameters used are discussed and shown in relationship with each other."

119. VAN DROOGENBROECK, J. B. A. & NAAFS, B. Étude comparative d'une série de nerfs lépreux décomprimés chirurgicalement par rapport aux nerfs controlatéraux non opérés. [**Surgical nerve release in leprosy: a study with comparison with non-operated opposite nerves.**] *Méd. Trop.,* 1977, v. 37, No. 6, 771–776. English summary.

120. GIRDHAR, B. K., RAMU, G., SREEVATSA, & DESIKAN, K. V. **Introductory rifampicin therapy in lepromatous leprosy: a six month follow-up study.** *Lepr. India,* 1978, v. 50, No. 3, 363–370.

This is a report from the Central Jalma Institute for Leprosy, Agra, comparing the effects of 300 mg rifampicin daily with 50 mg dapsone (DDS) daily for 3 months in the treatment of 24 new (untreated) cases of lepromatous leprosy. All patients were observed for a further 3 months on DDS. There was clinical improvement in both groups, with rifampicin producing speedier healing of nasal ulceration, and 2 patients in each group developed erythema nodosum leprosum during the first 3 months. Fall in Morphological Index as judged by skin smears, and killing of bacilli as judged by mouse footpad tests, were much more rapid in the rifampicin group, and the authors plan another trial to see if a shorter course of therapy will produce equally good results.

[It is to be hoped that the authors will carry out nasal scrapings as well as skin smears in their next trial.]

W. H. Jopling

121. NAIK, S. S. **Irregularity of dapsone intake in infectious leprosy patients attending an urban treatment centre—its magnitude and causes.** *Lepr. India,* 1978, v. 50, No. 1, 45–53.

This article does more than provide evidence that the irregularity of dapsone intake among leprosy out-patients found in other countries is also applicable to Bombay, where 48.7% of patients were involved. Useful data are presented regarding the educational, residential and occupational status of 322 infectious patients who were irregular in attendance and treatment. The results are not quite what might have been expected and invite further sociological study. The groups most involved were poorly educated factory workers and unemployed people living in cramped accommodation. The reasons for irregularity of attendance and treatment given by this group and an additional 110 non-Bombay residents indicate the complexity of the problems involved.

T. F. Davey

122. CASTRO-COTO, A. Clofazimina. G 30320–B 663–Lamprén. [**Clofazimine in leprosy.**] *Dermatologia,* 1977, v. 21, No. 1, 49–56.

This is a dissertation on clofazimine comprising a review of its history, chemistry, pharmacology, absorption, metabolism, mode of action and toxicology. Activity against various species of *Mycobacterium,* including *M. tuberculosis* and *M. leprae,* is reviewed, together with therapeutic results in the treatment of leprosy and the principal side-effects.

After discussing other uses of the drug the author concludes by summarizing the indications for the employment of clofazimine in the treatment of leprosy cases.

[Although various authorities are cited in the text there is no list of references.]

J. M. Watson

123. CHAUDHURI, S., GHOSH, S., CHAKRABORTY, T., KUNDU, S. & HAZRA, S. K. **Use of a common Indian herb "mandukaparni" in the treatment of leprosy.** *J. Indian Med. Ass.*, 1978, v. 70, No. 8, 177–180.

Mandukaparni (*Centella asiatica*) is a common Indian plant growing in marshy places. It contains the glucoside asiaticoside. Following favourable reports on its use in leprosy in the 1950s the authors describe a trial in which 15 untreated lepromatous patients were given pills made from the crushed whole plant administered daily for 12 months. Twelve completed the course. Their progress is compared with that of 10 lepromatous patients (? untreated) on standard dapsone therapy. The clinical and bacteriological progress of the trial group over the 1-year period compared favourably with the controls, with no reactions or toxic effects. The authors suggest that asiaticoside may have a bacteriostatic action by depressing the biosynthesis of hyaluronic acid.

T. F. Davey

124. SAINT-ANDRÉ, P., LOUVET, M., GIRAUDEAU, P. & DISCAMPS, G. Essai de différents protocoles thérapeutiques antilépreux avec rifampicine initiale suivie d'associations de sulfones et d'immunostimulants. [**Testing of several therapeutic anti-leprosy regimens with rifampicin as a starter followed by sulphones combined with immunostimulants.** *Méd. Trop.*, 1977, v. 37, No. 6, 721–729. English summary.

5. EPIDEMIOLOGY

125. WKLY EPIDEM. REC., 1979, v. 54, No. 3, 17–23. **Leprosy.**

The world-wide distribution of leprosy is given for the year 1975, seven years after the previous evaluations in 1968. In 154 countries, 3,599,949 patients were registered, an increase of 710,000 (25%) over 1968, but as the countries reporting are not identical, it should be noted that the populations from which these figures are derived have increased by 19% in the period. Taking this increase of population into account, leprosy registration has increased.

A true comparison over 1968–1975 is possible for 110 countries, and shows an increase in registered cases of 17%, a total of 835,000. Africa (with the least satisfactory comparison with 1968) shows only 5% increase, but Burma reveals 25%, India 56% and Indonesia 86%. The proportion of lepromatous cases in Africa is 10–15%, but in Asia it is greater (34% in Indonesia, 40% in Thailand). In the Americas it is frequently over 50% and in Brazil 55%.

Those receiving regular treatment (i.e. 75% of the prescribed doses) are still very low (Africa 41%, Eastern Mediterranean 53%, South East Asia 47% and Western Pacific 74%).

The tables provided detail the estimated number of cases, numbers registered, proportions of lepromatous, tuberculoid and indeterminate, numbers treated and numbers released from control for each country.

Less than a third of the countries provide estimates of the total cases, and this is to be regretted since the figures which are available suggest that only a third of the total world cases are as yet detected. But it is probable that the total number of cases in 1975 is not substantially different from that of 1968.

R. Schram

126. BELDA, W. Aspectos da "incidência" da hanseníase no Estado de São Paulo em 1976. [**Leprosy in São Paulo State in 1976.**] *Hansenologia Int.*, 1977, v. 2, No. 1, 73–88. English summary.

The 1853 cases registered during 1975 are analysed according to clinical form and regional distribution within the State, duration of the disease and the method of its detection. The countries of origin of immigrant patients are noted.

Ann Grant

127. MATHUR, N. K., KANWAR, A. J., KALLA, G. & UJWAL, J. S. **Leprosy in Jodhpur (Rajasthan). Clinical and epidemiological study.** *Lepr. India,* 1978, v. 50, No. 2, 204–209.

This is an analysis of leprosy cases attending the out-patient department of S.N. Medical College, Jodhpur between March 1975 and June 1977. In an area where leprosy is not believed to be endemic, 232 patients with leprosy were registered, 164 of them lepromatous in type. It is suggested that improved medical and health-care facilities may be causing an increased awareness of the disease encouraging early detection.

T. F. Davey

6. MISCELLANEOUS

128. BROWNE, S. G. **India's role in the fight against leprosy.** *Lepr. India,* 1978, v. 50, No. 2, 231–239.

Dr Stanley Browne gave this address on 30 January 1978 in New Delhi. At the same time the Silver Jubilee Commemorative Volume of The Gandhi Memorial Leprosy Foundation, entitled *A window on leprosy,* was launched. The lecture was given on a historic occasion to a galaxy of distinguished guests, and there can be few other men, if any, capable of presenting the theme in a more attractive and thought-provoking way.

In it he has much to say of the origins of leprosy relief and control in India, as well as pointers to India's role in the future. In doing so he provides a brief description of several Christian men, medical and non-medical, of importance to the story, William Carey of Serampore, Wellesley Bailey (founder of the Leprosy Mission), Sir Leonard Rogers, Dr Donald Miller and Dr Robert Cochrane. But also woven into the story is the great contribution of Mahatma Gandhi, his attitudes, foresight and loving persuasion of all to be deeply concerned for the leprosy sufferer.

The author also paints the picture of the growth of societies such as BELRA, later to become LEPRA, and the effect of aid programmes in the prevention and control of the disease and the rehabilitation of its sufferers. Looking to the future, he speaks of the great need for further research, greater commitment to the task by the medical profession and by health workers, a real attack on social discrimination against sufferers, and an increase in the conferring and sharing of knowledge by all leprosy control workers. These points he brings out by reference to seven of the Gandhiji's emphases. (The lecture was given at the time of the 30th anniversary of his martyrdom. It was also the 54th anniversary of the foundation of the Hind Kusht Nivaran Singh, and coincided with the 25th World Leprosy day.)

India's export of trained workers in leprosy and their contribution to the world-wide problem are described, instancing Robert Cochrane and Paul Brand from Vellore, John Lowe and Ernest Muir from Calcutta, and James Ross Innes from Cawnpore. Modern workers of renown, Dharmendra, Chatterji, Kanolkhar and Job and the Indian government's initiatives are next mentioned, and the lecture ends with a challenge in Gandhi's own words:

"Leprosy work is not merely medical relief; it is transforming the frustration in life into the joy of dedication, personal ambition into selfless service. If you can transform the life of a patient or change his values of life, you can change the village and country."

All concerned with leprosy work, and those who should be, should read this lecture.

R. Schram

129. KULKARNI, A. **Sponsorship of children of leprosy parents.** *Lepr. India,* 1978, v. 50, No. 2, 173–180.

This is an interesting initial report of the Community Aid and Sponsorship Programme (CASP), an India-based child care organization inspired by Gandhiji's deep involvement with leprosy

patients. The programme, created by the coming together of 3 related charitable organizations, aims to offer sponsorship for all physically handicapped children as well as the children of leprosy patients. The primary intention is to give economic and educational assistance to the families of such children, hoping both to preserve the family relationship as far as possible and give such children the best possible chance in life.

Beginning in Greater Bombay, 15 children were sponsored in June 1975. By April 1978 the number had increased to 600, of whom about 200 are the children of leprosy patients. The service is expanding rapidly but there are over 400 children on the waiting list. This type of work abounds in problems, some of which are illustrated. It clearly calls for well-identified objectives and devoted helpers with great patience and persistence.

T. F. Davey

130. McDOUGALL, A. C. & ROSE, P. **Integrated leprosy control in Guyana.** *Bull. Pan Am. Hlth Org.,* 1978, v. 12, No. 1, 11–16.

"Guyana instituted a 'find and treat' leprosy program in 1971 that made use of existing outpatient facilities and staff. The program based on an integrated domiciliary approach to diagnosis, treatment, and examination of contracts, has proved successful. This article describes development of the program and discusses the prospects for control and eventual eradication of leprosy in Guyana."