

HANSENÍASE: RESUMOS HANSENIASIS ABSTRACTS

BACTERIOLOGIA, IMUNOLOGIA BACTERIOLOGY, IMMUNOLOGY

BJORVATN, B. & KRONVALL, G. Detection of antigen in *Nocardia caviae* cross-reacting with mycobacterial antigen n.° 21 in *M. leprae* using a lepromatous leprosy serum pool as antibody reagent. *Int. J. Lepr.*, 48(3):260-266, 1980.

Eighteen strains of nocardia, representing five different species, were studied in crossed immunoelectrophoresis against a lepromatous leprosy serum pool for the presence of antigen No. 21. This mycobacterial antigen shows antigenic heterogeneity with species specific antigenic determinants defined in *Mycobacterium leprae*. All four strains of *N. caviae* were found to share antigen No. 21 determinants with mycobacteria. All other strains of nocardia were negative in these direct immunoprecipitation tests. When compared with *M. leprae* antigen No. 21, the *N. caviae* antigen gave a reaction of partial identity in the same way as all strains of other mycobacteria tested previously, i.e., with spurring by the *M. leprae* antigen. There was a reaction of complete identity between *N. caviae* and *M. avium-intracellulare* and *M. smegmatis*, respectively, with the lepromatous leprosy serum pool used as the antibody source. The results suggest that *N. caviae* antigen No. 21 is more closely of the genus *Mycobacterium* than to the antigen No. 21 equivalent of other nocardial species tested. — Authors' summary

CHANG, M.W. & MATSUO, Y. Counting of acid-fast bacteria by the nucleopore. *Jap. J. Leprosy*, 49(1):10-13, 1980.

In this paper the authors present the results of their further tests on the nucleopore method comparing with the microaport and culture methods. — From authors' abstract

DHOPLE, A.M. & HANKS, J.H. Adenosine triphosphate content in *Mycobacterium leprae*. A brief communication. *Int. J. Lepr.*, 49(1):57-59, 1981.

Using the firefly bioluminescence method, the ATP content of *M. leprae* harvested from the armadillo and nude mouse was found to be about 1.24 pg per one million organisms. This is about half that present in *M. lepraemurium*.

Authors' summary

MASUDA, A. & SCHEINBERG, M. A. Peripheral blood monocyte function in leprosy patients. *Int. J. Lepr.*, 48(3):254-259, 1980.

The activities of monocytes from lepromatous (LL) and tuberculoid (TT) leprosy patients were studied in a variety of *in vitro* systems. In assays of receptor activity, increased densities of Fc and C^b receptor sites were observed in monocytes of LL and TT patients as compared to normals. No differences were observed between the polar forms of the disease. Similar results were obtained in the nitroblue tetrazolium (NBT) reduction test. Glucosamine incorporation by monocytes from LL and TT patients was not significantly different from that by monocytes from normal controls. A diminished monocyte spontaneous migration and chemotactic activity to lymphocyte derived chemotactic factor (LDCF) was found in both forms of the disease. Plasma inhibitory factor of monocyte chemotaxis was more evident in the lepromatous form of the disease.

Authors' summary

NUTI, M.; D'AMELIO, R.; SEMINARA, R.; MILANO, C.F.; PALMISANO, L.; AIUTI, F. Circulating immune complexes detected by Clq solid phase assay in leprosy. *Int. J. Lepr.*, 49(1) :27-30, 1981.

Sixty-three sera of patients with leprosy were tested for the presence of circulating immune complexes (CIC) by Clq solid phase assay (ClgSPA). The mean values of CIC levels in leprosy patients were very high in comparison to native and European controls. No difference was found in the tuberculoid and lepromatous forms, but there was a good correlation between the presence of CIC and autoantibodies.

Authors' summary

SHETTY, B.T.; ANTIA, N.H.; KRISHNASWAMY, P.R. Occurrence of γ -glutamyl transpeptidase activity in several mycobacteria including *Mycobacterium leprae*. *Int. J. Lepr.*, 49(1) :49-56, 1981.

γ -Glutamyl transpeptidase (γ -GT) activity, which catalyzes the transfer of the "y-glutamyl" group of γ -glutamyl compounds to several dipeptide and amino acid acceptors, was found to be present in several mycobacteria, including *M. leprae*, both in cell suspensions and in cell-free sonicates. Glycyl D-amino acids were active as acceptors, particularly glycyl-D-alanine and α , ϵ -diaminopimelic acid, among the amino acids. Two mycobacterial isolates obtained from biopsy material of lepromatous patients also exhibited similar enzyme activity. The need for further work to delineate the possible role of γ -GT in mycobacterial metabolism is strongly indicated.

Authors' summary

STONER, G.L.; TOUW, J.; BELEHU, A. An assay for antibodies in leprosy sera reacting with ribonucleoprotein (RNP), a mycobacterial ribosomal antigen, using crossed immunoelectrophoresis with intermediate gel. *Int. J. Lepr.*, 48(3) :247, 253, 1980.

The technique of crossed immunoelectrophoresis with intermediate gel has been adapted to provide a quantitative assay for antibodies to a mycobacterial ribosomal antigen termed ribonucleoprotein (RNP) antigen. This antigen is no. 1 in the *M. smegmatis* reference system and corresponds to antigen no. 5 of *M. leprae*. The assay method measures changes in the rate of migration of the reference precipitin peak caused by the addition of serum in the intermediate gel and utilizes a lepromatous serum pool (LSP) both in the reference gel and as a standard in the intermediate gel. The anti-RNP activity in 24 leprosy sera differentiated the pauci-bacillary tuberculoid group (11 of 12 <35% LSP) from the multi-bacillary lepromatous group (11 of 12 X35% LSP). These findings confirm the work of others which indicates that assay of anti-RNP activity may have applications in the classification of leprosy patients and in the serodiagnosis of lepromatous leprosy infections. This method should also be applicable in other systems in which an antigen of high electrophoretic mobility forms a major precipitin in crossed immunoelectrophoresis.

Authors' summary

PATOLOGIA, FISIOPATOLOGIA, BIOQUÍMICA PATHOLOGY, PHYSIOPATHOLOGY, BIOCHEMISTRY

ALBERT, D.A.; WEISMAN, M.H.; KAPLAN, R. The rheumatic manifestations of leprosy (Hansen disease) *Medicine*, 59(6):442-448, 1980.

Leprosy is a rare disorder in the United States, yet the rheumatic features of the disease appear to be common and frequently, are the primary complaint. We observed rheumatic syndromes of erythema nodosum leprosum (ENL) occurring with and without arthritis, a swollen hands syndrome, cutaneous vasculitis, or myositis in the majority (15 of 21) of our patients. These syndromes were distinctive, sometimes dramatic, and appeared to "mimic" idiopathic rheumatic diseases, substantially delaying an accurate

diagnosis of leprosy in some patients. These complications were the major cause of morbidity in our 21 patients and became dominant clinical problems requiring additional chemotherapy.

Authors' summary

BAJAJ, A.K.; GUPTA, S.C.; SINHA, S.N.; GOVIL, D.C.; GAUR, U.C.; KUMAR, R. Renal functional status in lepromatous leprosy. *Int. J. Lepr.*, 49(1) :37-41, 1981.

Renal functional status was evaluated in 122 patients with lepromatous leprosy. Renal functions were found to be markedly impaired in patients with erythema nodosum leprosum (ENL) in the active or quiescent phases.

Although uncomplicated lepromatous leprosy patients did show significant renal impairment as compared to healthy controls, the degree of impairment was less than that of the reactive cases. Diminished endogenous creatinine clearance and proteinuria were the common abnormalities detected. Serum creatinine was significantly increased only in reactive cases. Blood urea was found to be marginally increased in a few patients although not to a statistically significant degree. Renal involvement did not bear any relation to the duration of illness or to the Bacteriological Index.

Authors' summary

CHAROSKY, C.B.; GATTI, J.C.; GABRIEL-LI, M.; TURJANSKI, L.; COSTAGLIOLA, G. Angiografía radioisotópica em câmara gamma. Una nueva técnica de exploración neurológica periférica. *Leprol.*, 22(1):23-33, 1980.

The authors present a new diagnostic method for peripheral nerve pathology, based in monitoring Te 99m uptake in hands and digits, with a Gamma Camera, as a measure of perfusion variations secondary to autonomic deficit. The method has proved to be valuable in allowing for objective demonstration of neural deficit even before anesthesia and palsy become clinically evident. The present technique should be considered still experimental, but authors are optimistic in reference to the possibility of its definite incorporation to regular diagnostic procedure in peripheral nerve pathology.

Authors' summary

CHAROSKY, C.B. Protocolo neurológico simple para uso en leprología. *Leprol.*, 22(1):36-38, 1980.

A simple neurologic protocol is presented to allow for uniform evaluation of peripheral nerve pathology in leprosy patients, and make comparisons feasible between different researches.

Author's summary

GUPTA, S.K.; KUMAR, B.; KAUR, S. Aspiration cytology of lymph nodes in leprosy. *Int. J. Lepr.*, 49 (1) :9-15, 1981.

Lymph node aspiration cytology smear patterns were analyzed in 60 cases of leprosy. A Type I smear pattern was found in 51.7%, Type II in 25%, Type III in 16.6%, and Type IV in 6.7% of the cases. Comparing with the histopathological diagnosis, Type I and Type II smears corresponded to LL lesions. Type III smears corresponded to BB lesions toward the lepromatous end of the spectrum, and Type IV smears corresponded to BB lesions

toward the tuberculoid end of the spectrum. An increasing degree of lymphocytic cell admixture was noticed from Type I to Type IV smears with a changing appearance from classical foamy histocytes in Type I and Type II smears to atypical histiocytes in Type III smears and epithelioid histiocytes in Type IV cases. These findings correlated with the better cell-mediated immune reactivity observed in these patients as the disease spectrum crosses from Type I and Type II smears to Type III and Type IV smears. A larger number of cases needs to be studied for definite assessment of these criteria.

Authors' summary

JUNQUEIRA, L.C.U.; MONTES, G.S.; ALMEIDA NETO, E.; BARRÓS, C.; TEDESCO-MARCHESE, A.J. The collagen of permanently damaged nerves in human leprosy. *Int. J. Lepr.*, 48(3): 291-297, 1980.

The collagen of nerve biopsies from ten leprosy patients was studied by the Picrosirius-polarization method and electron microscopy. It was observed that leprosy promotes a marked increase in nerve collagen content. Despite the changes induced by this disease, the localization of collagen types I and III in the endo-, peri-, and epineurium remains the same as in normal nerves.

Authors' summary

KOYA, G.; NARITA, N. ARAKAWA, I. Histopathological findings of serial preparation including the total length of nerve of *Extrimitas Thracica* in leprosy. *Jap. J. Leprosy*, 49(1):1-9, 1980.

Authors have undertaken a detailed study of the peripheral nerves in lepromatous leprosy by which made an addition to modified embedding method of their entire length. In addition, a detailed histological examination of the spinal cord was also undertaken. Histological examination of peripheral nerves of the upper extremities including the plexus and the roots of origin from the spinal cord dissected from three autopsy cases showed a greater degree of destruction of the axis cylinders and myelin sheaths in a spindle-like form and moderate destruction of them in proximal parts. Lepra bacilli, besides being present all along the peripheral nerves were found to be concentrated in a spindle-like form from part. It is concluded, therefore, that the lepra bacilli travel along the peripheral nerves to the roots, but fail to enter the spinal cord and in degenerates only secondarily.

From authors' abstract

LLORENTE, B.; FLIESS, E.L.; GARCIA, R.; PACIN, A.; SALIBIAN, A. Perfil enzimático de la hanseniasis. Revisión crítica. *Leprol.*, 22(1):39-44, 1980.

A review of existing data referred to enzymatic studies in leprosy is presented. The basic enzymatic profile required is postulated, emphasizing its importance in diagnosis of visceral involvement in leprosy patients.

Authors' summary

MEHTA, L.N.; ANTIA, N.H.; LAKHANI, R.; SRINIVAS, H.V. Study of thickened nerves in a leprosy endemic region. Part II Ultrastructural and tease fibre study. *Lep. India*, 52(1):65-73, 1980.

Ten out of sixteen cases of thickened nerves labelled as having idiopathic neuropathy showed hypertrophic changes, when their peripheral nerves were observed under light microscopy. Electron microscopy of seven nerves revealed more details. The reactions in various parameters of nerves were recorded. The significant observation was of one case harbouring *Lepra* bacilli as seen under electron microscope and having other changes similar to changes seen in early cases of leprosy. Two cases were also thought to have leprosy on the basis of the ultrastructural observation on their nerves. These could have been missed otherwise.

Authors' abstract

REA, T.H.; BEVANS, L.; TAYLOR, C.R. The histopathology of the spleen from a patient with lepromatous leprosy. *Int. J. Lepr.*, 48(3):285-290, 1980.

The histopathology of the spleen from a young man with diffuse non-nodular lepromatous leprosy is reported. As judged by this case, other case reports, and necropsy series, involvement of the spleen in lepromatous leprosy is characterized by aggregations of large vacuolated histiocytes, containing individual bacilli and globi, in both the red and white pulp. In the white pulp the histiocytes localize about the arterioles. Findings in the present case, which may represent a comparatively early change, include numerous, small germinal centers containing nonaggregated large, vacuolated histiocytes with intracellular bacilli.

Authors' summary

ROLSTON, R.; MATHEWS, M.; PHYLLIS, M.T.; KOSHY, T.S. Hormone profile in lepromatous leprosy. A preliminary study. *Int. J. Lepr.*, 49(1):31-36, 1981.

In a preliminary study, 11 male patients with lepromatous leprosy were evaluated with regard to endocrinopathy and hormonal status. Basal circulating hormone levels were estimated with a view to correlating the biochemical findings and clinical features. Thyroid hormones T₃ and T₄, Free Thyroxine Index (FTI), TSH, and cortisol were within normal limits, indicating that further study of these hormones would not be worthwhile. The finding of elevated levels of prolactin as well as the gonadotrophins LH and FSH, however, promises to yield more valuable information if studied in greater detail in a larger group of patients.

Authors' summary

SHETTY, V.P.; MEHTA, L.N.; IRANI, P.F.; ANTIA, N. H. Study of the evolution of nerve damage in leprosy. Part. I. Lesions of the index branch of the radial cutaneous nerve in early leprosy. *Leprosy in India*, 52(1):5-18, 1980.

A total of six index finger branch of the radial cutaneous (IRC) nerves from three BL, two BB and one BT cases of leprosy, with less than 6 months history of disease were subjected for nerve conduction velocity (NCV) studies followed by biopsy. The biopsy was divided into three parts and subjected for light microscopy quantitative histology, electron microscopy and fibre tease studies. The nerves revealed a slight reduction in NCV and a varying degree of segmental demyelination ranging from 10% to 35%. The earliest changes observed were the thickening and proliferations of Schwann cell processes of the unmyelinated fibres and degeneration of their axons regardless of the type of leprosy.

Authors' summary

SHETTY, V.P.; MEHTA, L.N.; IRANI, P.F.; ANTIA, N. H. Study of evolution of nerve damage in leprosy. Part II. Observations on the index branch of the radial cutaneous nerve in contacts of leprosy. *Leprosy in India*, 52(1):19-26, 1980.

A total of 35 contacts from 20 families of lepromatous index cases were screened clinically. All of them were subjected for nerve

conduction velocity (NCV) studies of both left and right index branch of the radial cutaneous (IRC) nerve. Fifteen of these nerves were biopsied. Out of 15 IRC nerves biopsied 10 had slightly reduced average NCV values and 5 were normal. Four nerves out of 10 where average NCV was reduced and 1 nerve out of 5 where NCV was normal showed significant ultrastructural changes and higher percentage of segmental demyelination (10%-13%). There was a striking similarity between the changes seen in the IRC nerves of early cases of leprosy and of contacts.

Authors' summary

SZABADOS, L.; LAUNAY, J.M.; MESTER, M.; COTTENOT, F.; PENNEC, J.; MESTER, L. Low serotonin uptake by platelets in leprosy and a new approach to prevent it. *Int. J. Lepr.*, 49 (1) :42-48, 1981.

The plasma of leprosy patients contains high levels of mucoproteins which are deficient in sialic acid. However, due to the increased mucoprotein level, the total sialic acid content of leprosy plasma, calculated on protein, is increased when compared with normal human plasma. The low serotonin uptake observed with isolated platelets is probably due to their low sialic acid content. The inability of normal human plasma to correct the diminished serotonin uptake by isolated leprosy platelets is in favor of a definite structural change in leprosy platelets, related to their low sialic acid content. In patients with active disease and in those with lepra reactions, leprosy plasma itself can correct the diminished uptake of serotonin by the isolated platelets. In patients with subsided lepra reactions, the leprosy plasma is much less effective. In severe cases, where serotonin uptake is decreased

even in platelet rich plasma, desoxyfructo-serotonin increased the uptake of serotonin.

Authors' summary

THOMAS, J.; JOSEPH, M.; RAMANUJAM, K.; CHACKO, C.J. G.; JOB, C.K. Histology of the Fernandez reaction. An appraisal. *Int. J. Lepr.* 49 (1) :1-8, 1981.

The early lepromin reaction was studied clinically and histologically in 38 leprosy patients. There was a quantitative and a qualitative difference in the character of the early inflammatory response to lepromin in the different groups of leprosy patients. In tuberculoid patients, the extent and degree of inflammation and the density of lymphocytic infiltration were maximal. In the polar lepromatous group, the inflammatory reaction was far less intense, and lymphocytes were scarce or absent. An intermediate histology was noted in the borderline and indeterminate groups of patients. In 11 patients with negative clinical reactions, the histology showed moderately dense lymphocyte infiltrations. The paucity of the clinical reaction could be due to the injection and localization of the antigen in the mid- and deep dermis. The correlation between early and late lepromin reactivity, both clinically and histologically, in the polar tuberculoid group and the polar lepromatous group was good. In the borderline and indeterminate groups, only the correlation between the early and late histological reactions to lepromin was good. The relationships between the early and late clinical reactions to lepromin showed marked variation. It is suggested that the early reaction is as good an indicator of lepromin reactivity as the late reaction in all forms of leprosy but only if it is assessed histologically.

Authors' summary

HANSENÍASE EXPERIMENTAL, LEPRO ANIMAL EXPERIMENTAL HANSENIASIS, ANIMAL LEPROSY

ANTIA, N.H.; SHETTY, V.P.; MEHTA, L.N. Study of nerve damage in leprosy. Part. IV. An assessment. *Leprosy in India*, 62(1):48-52, 1980.

This study demonstrates the evolution of nerve damage in leprosy in the earliest stage of involvement. It reveals that the early lesions in human as well as mouse leprosy follow a definite and almost similar pattern.

Also that the pattern of early nerve involvement is similar in the tuberculoid as well as the lepromatous spectrum of the disease. That the unmyelinated fibres and their Schwann cells are the earliest to be involved, followed by small myelinated and only lastly by the large myelinated fibres. That the fibre damage is predominantly of segmental demyelination in the early stages of this disease in both the lepromatous as well as the tuber-

culoid forms and occurs even without the presence of bacilli in the nerve. That the earliest lesions cannot be detected on light microscopy and can be demonstrated only on electron microscopy. That definite and typical nerve changes can be demonstrated not only in the uninvolved nerves in early clinical leprosy, but also in the contacts of leprosy patients. That the semi-quantitative methods of sensory testing and nerve conduction studies as described by us can help to detect nerve changes at an earlier stage than by the routine methods. Finally this study indicates the presence of diffuse peripheral neuropathy not only in the earliest stages of clinical leprosy but also in otherwise healthy contacts of leprosy patients. Also that such changes may occur as early as four months after infection if any analogy can be drawn from the mouse model.

Authors' conclusion

COLSTON, M.J.; HILSON, G.R.F.; LANCASTER, R.D. Intermittent chemotherapy of experimental leprosy in mice. *Am. J. Trop. Med. Hyg.*; 29(1):103-108, 1980.

In this study we assess the degree of prolonged bacteriostasis of *Mycobacterium leprae* after temporary exposure to ethionamide or thiacetazone, and relate this to their efficacy when administered intermittently to mice with experimental leprosy infections. The results show that temporary exposure of *M. leprae* to either of these drugs results in a prolonged bacteriostatic effect, but that efficacy is rapidly lost as the interval between doses is increased. Using the mouse foot pad system, growth of *M. leprae* is not inhibited by thiacetazone when the frequency of administration is less than three times weekly. When ethionamide is administered once weekly, growth of *M. leprae* is inhibited but bactericidal activity is lost. When ethionamide is administered in combination with continuous dapsone therapy, either continuously or three times weekly, the bactericidal activity of the drug combination is greater than when either drug is administered alone. However, when ethionamide is administered once weekly in combination with continuous dapsone treatment, the bactericidal effect is identical to that when dapsone is given alone: that is, ethionamide makes no contribution to the combination.

Authors' abstract

FIELDSTEEL, A.H. & LEVY, L. Combined rifampin and dapsone chemotherapy of *Mycobacterium leprae* infection of the neonatally thymectomized Lewis rat. *Int. J. Lepr.*, 48(3):267-276, 1980.

Neonatally thymectomized Lewis rats (NTLR) were shown to be highly susceptible to infection with *Mycobacterium leprae*. We have used them in chemotherapeutic studies as models of human lepromatous leprosy. NTLR chronically infected with *M. leprae* were treated with various regimens combining a background of the minimal effective dose (MED) of dapsone (4,4'-diaminodiphenylsulfone, DDS) or 100 times this dose in the diet with one to ten doses of rifampin (RMP) of 10 mg/kg. To test for persisting viable *M. leprae* passage of 5×10^3 organisms was made to intact mice, and 10^5 to 10^7 acid-fast bacilli were passaged to NTLR. The only regimen that appeared to be completely effective in eliminating infectivity for intact mice was ten doses of RMP given on the background of the MED of DDS. No viable organisms were detected in any passage mice, but multiplication of *M. leprae* was detected in 12 of 16 passage NTLR, representing three of the four groups in which passage was made. In no instance did we fail to detect organisms in passage NTLR when we detected them in passage mice, and multiplication was demonstrated in passage NTLR in 14 instances in which *M. Leprae* failed to multiply in passage mice. Because of its high degree of immunosuppression, the NTLR was able to detect a small population of viable *M. leprae* in inocula containing up to 5000 times the number of organisms that can be inoculated into intact mice. The NTLR appears to provide a model for the study of microbial persistence in leprosy.

Authors' summary

KAWAGUCHI, Y.; MATSUOKA, M.; SUSHIDA, K.; TANEMURA, M. Susceptibility to murine leprosy bacilli of C3H/He mice. *Jap. J. Leprosy*, 49 (1) :14-19, 1980.

C3H/He strain mice, approximately 5 weeks of age, were subcutaneously inoculated at the thorax with 0.25 ml of a 1 : 1000 saline suspension prepared from a malignant leproma in a C3H mouse infected with murine leprosy bacilli, strain Hawaiian, about 25 weeks earlier. The susceptibility of these mice to the bacilli was evaluated by the development of leproma at the infection site and also by the involvement of visceral organs. In only 2 out of 10 male mice tested typically malignant leproma was observed at the

infection site throughout the observation period. In almost all the other mice, subcutaneous leproma showed benign-like features at the early stage of infection. The leproma increased in size gradually, but did not show typically malignant features even at 40 to 50 weeks. However, visceral lesions in all the mice seemed to be severe with time, since autopsy revealed extensive involvement of the viscera. The visceral lesions and mean survival time of C3H/He mice were similar to those obtained in C3H mice. There were no pronounced differences in the susceptibility between male and female groups. The susceptibility of C3H and C57BL/6 strain mice was also examined by the same manner above mentioned, as controls. Mice of C3H and C57BL/6 strains showed typically malignant and benign features, respectively. From the observations of this and of our earlier experiments, it is clear that the disease course in C3H/He mice was intermediate to that observed in C3H and CF $\frac{1}{1}$ mice.

Authors' abstract

NOMAGUCHI, H.; NYEIN, M.M.; KOHSAKA, K.; YONEDA, K.; MORI, T. The growth and drug sensitivity of *M. lepraemurium* by tissue culture applying monolayer and agar suspension technique. *Int. J. Lepr.*, 48(3):277-284, 1980.

M. lepraemurium grow well in a Balb/c 3T3 recloned cell line (A31). In monolayer culture, the average generation time of *M. lepraemurium* in A31 cells was 5.3 to 9.4 days at 37°C. A31 cells are very sensitive to infection with *M. lepraemurium*. Bacterial increases were readily apparent 30 days after inoculating 2 X 10⁵ A31 cells in monolayer culture with only six bacilli. The intracellular bacilli were well transferred without apparent losses by host cell transfer. The growth of intracellular bacilli was inhibited by streptomycin 100 µg/ml, clindamycin 25 µg/ml, INH 5 µg/ml, and rifampin 5 µg/ml. When streptomycin or clindamycin was removed from the culture medium after 41 days of treatment and the cultivation continued in drug-free medium, the intracellular bacilli began to multiply once more without a lag period. When the intracellular bacilli were treated with INH for 35 days or rifampin for ten days, growth resumed, but only after lag periods after removal of these drugs. We utilized agar suspension techniques for the cultivation of host cells for *M. lepraemurium* because normal cells or transformed cells ceased undergoing cell division and remained healthy for long periods of time in agar medium. *M. lepraemurium* grew

well in A31, A31 transformed by polyoma virus, nude mouse foot pad, chick embryo, and human neuroblastoma cells, utilizing the agar suspension technique. The agar suspension cell culture method should provide useful clues for the cultivation of *M. leprae*.

Authors' summary

REA, T.H.; LIEBERMAN, J.; CARMEL, R.; WALSH, G.P. Serum angiotensin-converting enzyme, transcobalamin and lysozyme in normal and lepromatous armadillos. *J. Reticuloendothel. Soc.*, 26(4) : 367-372, 1979.

Serum angiotensin-converting enzyme, unsaturated vitamin B₁₂-binding capacity and lysozyme values were measured in 8 healthy armadillos, 2 with *Mycobacterium ulcerans* infections and 15 with lepromatous leprosy. Mean angiotensin-converting enzyme values were significantly elevated in animals with lepromatous leprosy, and the degree of the elevation roughly paralleled the extent of the infection. Unsaturated B₁₂-binding capacity values were higher than those previously reported for any mammalian species but were unrelated to the presence or extent of lepromatous leprosy. Only negligible amounts of lysozyme activity could be found. Serum angiotensin-converting enzyme assay may be of value for evaluating armadillos for natural or experimentally induced lepromatous leprosy.

Authors' summary

SHETTY, V.P.; VIDYASAGAR, P.B.; ANTIA, N.H. Study of evolution of nerve damage in leprosy. Part III. Sciatic nerve lesions in mice inoculated with *M. leprae* with nerve conduction velocity correlates. *Leprosy in India*, 52(1): 26-47, 1980.

Non-immunosuppressed Swiss white mice inoculated with 5000 *M. leprae* in each hind foot pad were subjected to nerve conduction velocity studies followed by light and electron microscopy and fibre tease of both sciatic nerves at sequential time intervals from the 4th to the 24 th month. The conduction velocity was standardized for basal temperature of 35°C and uninoculated mice were used as controls. Progressive changes were noted in conduction velocity from the 6th post inoculation month and correlated with the ultrastructural changes which were first observed at the 4th month. Fibre teasing showed predominant segmental demyelination.

Authors' summary

CLÍNICA, DIAGNÓSTICO CLINICAL ASPECTS, DIAGNOSIS

ANTIA, N.H. Study of the evolution of nerve damage in leprosy: a general introduction. *Leprosy in India*, 52(1) :3-4, 1980.

A precise understanding of the evolution of nerve damage in leprosy is an essential precondition to the development of medical or surgical methods for the prevention or treatment of such damage. Since this would involve longitudinal monitoring of nerve biopsies at regular intervals following infection, such studies cannot be undertaken in man. The mouse provides a suitable animal model for this purpose. The main aim of this study was (a) to study the evolution of nerve damage in leprosy and (b) to see whether nerve conduction velocity changes correlate with histological and ultrastructural observations, with the hope that electrophysiological methods may help in the diagnosis of leprosy especially among contacts and suspected cases which cannot be confirmed by other means. It would thus help in identifying leprosy patients in the early stages and probably in the preclinical stage.

From the article

BARTON, R.P.E.; HOGERZEIL, L.M.; MCDUGALL, A.C. Borderline tuberculoid leprosy with a lepromatous nodule of the nasal mucosa: a case report *Leprosy in India*, 52(1) :114-118, 1980.

An 18-year old Indian presented with a 2-year history of cracked, swollen feet and tingling in the hands and feet. On examination he had skin and neural lesions typical of Borderline-Tuberculoid (BT) leprosy, and this was confirmed by biopsy of one of the skin lesions. He also complained of left-sided nasal obstruction of 10 days duration, examination revealing a nodule on the anterior end of the inferior turbinate, from which area smears were positive for acid-fast bacilli. Smears from other areas of the nose and from various skin sites were all negative for acid-fast bacilli. Histopathological examination of the nodule showed a highly active cytology, with numerous closely-packed cells resembling fibroblasts, together with large numbers of acid-fast bacilli, all of which were in granular form; the cellular picture suggested histoid leproma. This unexpected finding in a patient with well-defined features of borderline leprosy cannot be explained on the data available, but it is recorded in order to emphasize the importance of nasal examination

in leprosy, aided by biopsy in selected cases. The rarity of histoid lesions in the nose is also discussed.

Authors' abstract

DHARMENDRA Thickened nerves in diagnosis of leprosy. Editorial. *Leprosy in India*, 52(1):1-2, 1980.

Although thickened nerves may sometimes be found in some other conditions, they are of definite importance in diagnosis of leprosy cases in which the skin lesions of the disease are very faint or may have been masked by some caustic local application to it, or when there is some indication of loss of sensation in the limbs. It is a well known principle that a nerve should be of considered thickened only after examining the nerve on the other side, and if both the nerves are found thickened, after comparing the particular nerve in a healthy person of similar build. Moreover, the thickened nerve in leprosy is not only thick, but it differs in consistency from a normal nerve in being harder when rolled under the fingers.

From the editorial

REICH, C.V.; GUINTO, R.S.; CELLONA, R.V.; FAJARDO, T.T.; MADARANG, M.G. Evaluation of a new blood test for its potential to indicate leprosy infection prior to the appearance of clinical symptoms. *Int. J. Leprosy*, 49(1) :21-26, 1981.

A test is described that utilized a laser nephelometric measure of the interaction between human serum and a leprosy biopsy suspension to demonstrate household contact with a leprosy index case. None of the test sera was from persons with clinical evidence of the disease. There was a 5:1 ratio of higher level reactors in sera from household contacts vs high level reactors in sera from persons in the surrounding community. This did not appear to be a result of age, sex, family relationship to the index case, or clinical character of the index case. Some index cases had high level serum reactors among their contacts; others did not. This phenomenon was not a function of the clinical classification of the index case. The reason is unknown. This test should provide another practical means to study leprosy.

Authors' summary

SRINIVAS, H.V.; LABHANI, R.; MEHTA, L.N.; ANTIA, N.H. Study of thickened nerves in a leprosy endemic region. Part I. Clinical and histological study. *Lepr. India*, 52(1):63-64, 1980.

Sixteen patients with thickened peripheral, nerve/nerves with *clinical* features of mononeuropathy / multineuropathy / polyneuropathy were included in the study. Leprosy was excluded by careful clinical examination and by nasal and ear lobe smears for AFB. A history of chronic alcoholism and/or chronic smoking was obtained in seven patients. There were two patients with severe diabetes. A detailed histopathological examination of the nerve biopsies helped in diagnosing tuberculoid leprosy in three patients and borderline leprosy in one patient. There was no evidence of leprosy in the remaining 12 patients. Though no definite diagnosis could be made in these 12 patients, the role of chronic trauma, friction, drugs and diabetes have been discussed. It is suggested that a diagnosis of leprosy should be withheld unless there is some other positive proof besides thickened nerves. The aetiological factors in nearly 50% of cases of peripheral neuropathy remain undetermined in spite of extensive investigations. Similarly it may not be possible to give an aetiological diagnosis in every case of thickened nerve with neuropathy, but this is better than labelling them as leprosy in view of the severe psychological trauma, besides the prolonged drugging with dapsone with its attendant hazards. Out of five cases of leprosy diagnosed by this study, only one had been previously diagnosed as leprosy and was taking DDS while in other four the diagnosis had been missed. Two cases of diabetic neuropathy had been treated with DDS. Two cases of idiopathic neuropathy were on DDS before the present investigations were performed when the diagnosis of leprosy was made.

Authors' abstract

STONER, G.L.; BELEHU, A.; NSIBAMBI, J.; WARNDORFF, J. Borderline tuberculoid leprosy following BCG vaccination. A case report. *Int. J. Lepr.*, 49(1):16-20, 1981.

Borderline tuberculoid leprosy was diagnosed clinically and histologically in a four year-old boy about 6 months after intradermal vaccination with BCG. His mother reported that a lesion began to appear above

the vaccination site on the arm 2 weeks after the vaccination, and a second lesion appeared on the chin 2 months later. Responses in the lymphocyte transformation test to sonicated *Mycobacterium leprae*, BCG, and to PPD were consistent with a tuberculoid leprosy infection. Precipitation of BT leprosy by intradermal BCG infection may possibly represent the overcoming of a phase of primary suppression in an individual who might otherwise have progressed toward lepromatous leprosy. The implications of this hypothesis for the planning of a controlled trial of an anti-leprosy vaccine are discussed.

Authors' summary

YAMAMOTO, Y. Radiological studies on changes in calcaneus trabeculae in leprosy. *Jap. J. Leprosy*, 49(1):20-37, 1980.

Radiological studies on changes in calcaneus trabecula have been carried out on the deformed feet in leprosy. The results are as follows. Even in the old peroneal palsy cases, if the form of longitudinal arch is slightly decomposed, no effects are observed on the trabecula a, C₁, and/or C₂, due to steppage gait. The pressure by standing and/or walking which goes through the longitudinal axis of the tibia, further through the center of the foot joint, is ramified (spreaded) to each condition in the metatarsal part and tuber calcanei and, as the trabecula a, C₁, and C₂ coincide with their own routes respectively, the pressure in the stance phase with the greatest pressure imposed by standing and/or walking is considered to show normal ramification, even in the case of steppage gait. Even if the joint condition is normal in the stance phase, the trabecula b and/or C₂, tends to become coarser when the foot joint is fixed. This seems as the fact of the pressure imposed by standing and/or walking, which goes through the longitudinal axes of the tibia, is not ramified toward the metatarsal part but perpendicularly to the bottom of the calcaneus. Excepting for the peroneal palsy cases (the majority of the cases) and calcaneus fracture cases with normal Böhler angle, the trabecula d, and d, have been found to be weakened or disappearing in almost all studied cases. As the contracture of calcaneus tendon or loss of its function, the trabeculae markedly increased its disappearing tendency.

From the article

TERAPÉUTICA THERAPY

GIRDHAR, B.K.; SREEVATSA; DESIKAN, K.V. Intermittent rifampicin therapy in lepromatous leprosy. *Lepr. India*, 52(1): 89-96, 1980.

A double blind trial involving intermittent administration of Rifampicin in addition to daily DDS has been undertaken in order to evaluate the efficacy as also the potential dangers of such a regimen. Twenty untreated LL cases who were otherwise healthy were included in the study. Ten cases received weekly 900 mg Rifampicin for 6 weeks in addition to 100 mg daily DDS, while the rest were treated likewise but were given similar looking placebo capsules instead of RFP. A nine month follow-up, as also mouse foot pad results indicate that the efficacy of this regimen was found to be better than that with DDS alone and this compares favourably with trials involving 600 mg Rifampicin administration daily. No major untoward side

effects were encountered in the trial group though the incidence of ENL was slightly higher in the trial group.

Authors' summary

GIRLING, D.J. & HITZE, L. Adverse reactions to rifampicin. *Lepr. India*, 52(1): 119-125, 1980.

This summary of adverse reactions to rifampicin has been prepared with the intention that it will be made *available* to all those involved in the administration of rifampicin in tuberculosis and leprosy control programmes. The reactions covered comprise those to both daily and intermittent administration, namely cutaneous and gastrointestinal reactions, hepatitis and thrombocytopenic purpura, and those to intermittent administration only namely "flu" syndrome, shock, shortness of breath, haemolytic anaemia, and renal failure.

Authors' abstract

CIRURGIA, FISIOTERAPIA, REABILITAÇÃO FÍSICA SURGERY, PHYSIOTHERAPY, PHYSICAL REHABILITATION

PALANDE, D.D. Surgery of ulnar nerve in leprosy. *Lepr. India*, 52(1):74-88, 1980.

Surgery on 64 ulnar nerves in leprosy was done for the treatment of ulnar nerve paralysis of less than one year duration. The initial treatment, indications for surgery, clinical findings, the operation procedures and findings are described in detail. Factors shown to have statistically significant bearing on nerve function before and after surgery are discussed. The results were : improved 32, further nerve damage stopped in 11; worsening in six while in the remaining 16 nerves there was no nerve function recovery. The main conclusions are that earlier the

duration of paralysis and lesser the initial nerve function deficit better is the result. Lepromatous cases showed better result than non-lepromatous cases.

Author's abstract

RIAL, R.M.L. La biopsia neural en la enfermedad de Hansen fundamentos y técnica quirúrgica *Leprol.*, 22(1):11-22, 1980.

The author presents his experience with peripheral nerve surgery as a diagnostic procedure in particular cases of leprosy patients. He reviews the anatomy and points out the preferable biopsy areas for sensitive branches.

Author's summary

EPIDEMIOLOGIA, PREVENÇÃO EPIDEMIOLOGY, CONTROL

BERTAMINO, R. Epidemiologie de la lèpre en Italie. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper, Sanit.* (1): 56-59, 1980.

BERTAMINO, R. Législation concernant la lèpre en Italie. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.* (1): 161, 1980,

Les points essentiels de notre législation sont les suivants: la déclaration des hanséniens est obligatoire et nominative. Tous les composants de la famille des hanséniens sont examinés. L'hospitalisation n'est pas obligatoire, sauf pour quelques cas exceptionnels, cependant elle est très vivement recommandée et peut être accordée à la demande de l'intéressé.

De l'article

BROWNE, S.G. Epidemiology and residual foci. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1): 15-18, 1980.

BROWNE, S.G. The epidemiological situation of leprosy in Great Britain. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) : 34-35, 1980.

BROWNE, S.G. Legislation in leprosy in Great Britain. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :145-146, 1980.

CAEIRO, F.M. Situation épidémiologique de la lèpre en Portugal. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :68-74, 1980.

CAEIRO, F.M. Legislation concernant la lèpre en Portugal. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :164-167, 1980.

DAVEY, T.F. New dimensions in our understanding of the transmission of leprosy and their impact on priorities in leprosy control. *Lepr. India*, 62(1):104-113, 1980.

In conclusion, leprosy control will indefinitely be delayed unless the quality of service rendered to patients respects and understands the profound psychological, social and economic effects of the disease and is able to win their confidence and sustained cooperation. There is no other way. Here I have been concerned with immediate priorities. We look forward with keen anticipation to success in the efforts of IMMLEP to produce an effective leprosy vaccine, to more effective chemotherapy, but at the core of the leprosy problem the matters raised here will have

continuing relevance, with our concern for the patient as a person the key to success. As the great Tagore put it, "He who tries to do people good stands knocking at the door, but he who loves finds the door open".

From the article

GARRIGUE, R. Situation épidémiologique de la lèpre en France. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :19-29, 1980.

Telle est la situation épidémiologique de la lèpre en France, telle qu'elle a pu apparaître grâce à l'enquête effectuée avant les XVèmes journées nationales de Médecine du Travail de Strasbourg du 12 Mai 1978, dont un des thèmes portait sur les aspects de la pathologie des travailleurs étrangers. C'est dire l'importance que doit revêtir l'information des médecins du travail, des médecins généralistes et des dermatologues en matière de lèpre. C'est en effet le meilleur moyen de réduire rapidement, grâce à un dépistage précoce, le réservoir d'infection, d'éduquer l'entourage des malades défectueux, et de protéger les sujets contacts. Cela permettra de guérir sans séquelles les malades de Hansen importés et de sauvegarder leur avenir tant en France que dans leur pays d'origine, si certains choisissent d'y revenir une fois stabilisés.

Conclusion de l'auteur

GARRIGUE, R. Problèmes de législation concernant la lèpre: difficultés rencontrées en France. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :143-144, 1980.

Telle est la législation concernant la lèpre en France, avec ses insuffisances. Le fait qu'aucun cas de lèpre d'importation n'ait entraîné de foyer de contamination métropolitain semble plus lié à l'excellence des conditions de vie de l'entourage de ces malades qu'à la législation. Toute attitude intransigeante ou coercitive aboutissant, de toutes façons, à plus d'effets nocifs que bénéfiques. La déclaration obligatoire conservant l'anonymat semble une mesure sage et il faut espérer que, par la persuasion, tous les malades dépistés accepteront de se laisser soigner. La médecine, plus que jamais, doit rester là encore "l'art de guérir". Aux médecins de s'atteler à cette tâche.

Conclusion de l'auteur

HUANG, C.L.H. The transmission of leprosy in man. Editorial. *Int. J. Lepr.*, 48(3):309-318, 1980.

Existing clinical, scientific, and epidemiological knowledge on the mode of transmission of human leprosy is reviewed under the following headings: a) The release of viable organisms from the host into the environment. b) The presence of viable organisms so released into the environment. c) Entry into the new human host and distribution within the body. d) Production of clinical illness. It is concluded that much of the published evidence deals with one, or rather few, parameters, whose relationship to the overall scheme of transmission is uncertain. Although it is beyond doubt that most leprosy bacilli emerge from the nose and nasal secretions, probably entering the environment in droplets, little is known of their mode of survival in the environment or their entry into the new host. Existing data certainly does not provide a full "model" of leprosy transmission, and it is suggested that further work attempting to clarify the relative importance of the component events in transmission may have to rely increasingly on epidemiological methods. It also emerges that consideration of the immunological factors bearing on whether or not infection causes clinical illness is important in elucidating the mechanism of leprosy transmission. Thus even the most "applied" and practical of problems must eventually turn to the realm of "pure" research for a definitive solution.

Authors' summary

IRGENS, L.M. Epidemiological aspects of leprosy in Norway. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1):41-55, 1980.

IRGENS, L.M. Leprosy in Norway: legislation. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1):149-163, 1980.

The act of 1885 on the isolation of patients was in force until 1965 and was discontinued when the "Social Care Act" was passed. Naturally, the greatest interest has been attached to the act on isolation, both in practice and as an example to other countries. However, leprosy was also mentioned in other laws, e.g. the Marriage Act of 1918. A leprosy patient was forbidden to marry if the other part was not informed of the dis-

ease. Until 1969 every couple to be married in Norway had to testify that they did not suffer from leprosy.

From the article

LECHAT, M.F. Épidémiologie de la lèpre en Belgique. In: INTERNATIONAL WORKSHOP "LEPROSY IN EUROPE", 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1):27-33, 1980.

LECHAT, M.F. Législation de la lèpre en Belgique. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1):165, 1980.

En Belgique, la seule mesure législative, datant de 1971, fait de la lèpre une maladie soumise à déclaration obligatoire au memo titre que 32 autres maladies non-quarantenaies it déclaration internationale ou considérées comme telles.

De l'article

LEHRER, A.G.; BONNUCCI, N.E. Lucha antileprosa en Santa Fe — Departamento Rosário. *Lepr.*, 22(1):45-50, 1980.

An evaluation of the endemic evolution of leprosy in Rosario Department (Santa Fe, Argentine) between 1976 and 1978 is presented.

Authors' summary

LEIKER, D.L. Epidemiology of leprosy in the Netherlands. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1):60-64, 1980.

LEIKER, D.L. Legislation in leprosy in the Netherlands. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1):147-148, 1980.

MATHAI, R., RAO, P.S.S.S.; JOB, C.K. Risks of treating leprosy in a general hospital. *Int. J. Lepr.*, 48(3):298-302, 1980.

The Christian Medical College and Hospital, Vellore, with 1208 beds, is situated in an endemic area in which the prevalence of leprosy among adults is 3.4%. Two percent of the beds are occupied by leprosy patients, and about 4000 are seen as outpatients per year. They share with other patients all medical, nursing, laboratory, and other services. The impact of these attitudes and practices on the incidence of leprosy among staff and

students was studied. This hospital has 2665 staff, including housekeeping personnel, technicians, nurses, and doctors. There are 777 medical, nursing, and paramedical students. Every employee and student is screened prior to entry into this institution and subjected to routine annual examinations. Of those who at initial screening had no evidence of leprosy, 24 acquired the disease. Sixteen had tuberculoid, two borderline, and six indeterminate leprosy. The attack rate of 0.7% is significantly lower than the incidence or prevalence of leprosy in the area. Factors contributing to this low attack rate are discussed with particular reference to age, sex, educational background, residential status, and area of work. It is suggested that staff and students serving leprosy patients for whom no isolation is practiced do not carry any additional risk of acquiring clinical leprosy.

Authors' summary

NOORDEEN, S.K.; NEELAN, P.N.; MUNAF, A. Chemoprophylaxis against leprosy with acedapson. *Lepr. India*, 52(1):97-103, 1980.

The study has been in progress for more than two years, and so far 50 new cases of leprosy have occurred in the study. Of the 50 new cases 18 have occurred in the Acedapson prophylaxis group and 32 in the control group. Based on person-weeks of treatment the incidence in the prophylaxis group is 56.0 per 100,000 person-weeks as against 105.7 per 100,000 person-weeks in the control group. The difference is statistically significant ($t=2.18$; $p<0.05$) and indicates a protection of 47.0% attributable to Acedapson. Acedapson, a long acting repository sulphone, has been found to be effective as a chemoprophylactic in the controlled double blind study. The operational ease of Acedapson has improved the feasibility to chemoprophylaxis in limited programme.

From the article

PARISIS, N.; VENETSANOS, P.; GRAMATIKOPOULOS, D.; CAPETANAKIS, J. Some epidemiological characteristics of the leprosy in Greece In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1):36-40, 1980.

PARISIS, N. Legislation in leprosy in Greece Int: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1):162-163, 1980.

RICAGNO, L.A.; GANDINI, N.I. Estudio epidemiológico de la "Enfermedad de Hansen". *Leprol.*, 22(1):51-52, 1980.

This paper has been done with the object of underlining the delicate situation, at an epidemic level, of the "Hansen Disease", analysed in the "Service of Dermatology" of the Francisco J. Muñiz Hospital, where there have been 507 new cases. In this survey the increase of the "Clinic Lepromatose Form", is remarked especially in young individuals and the almost non-existence of the "Indeterminate Forms". As regards to the patients coming from non-endemic zones, the highest percentage corresponds to Buenos Aires, including the Federal Capital and foreigners to Paraguayan citizens.

Authors' summary

SCHALLER, S.F. Epidemiology of leprosy in Germany. In INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1):75, 1980.

SAYLAN, T. Epidemiology of leprosy in Turkey. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1):65-67, 1980.

SAYLAN, T. Leprosy legislation problems of Turkey. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1):158-160, 1980.

It must be emphasized that leprosy is not different from any other contagious disease. The rule that the morphological index should become zero to go back to work, to school or marry should be enforced. The lepromine test is to become an established criterion for the decision of the preventive treatment and withdrawal from treatment. With a new legislation the present occupational status of a patient diagnosed as leprosy should be guaranteed and the employment of the invalids for suitable jobs must be provided. Apart from all these, emphasis should be put on the compulsory education and practice of leprosy for all the medical students and doctors. I hope that the discussions and reviews on the legislations will be useful to all countries and leprosy patients in the world will have equal rights as the other patients.

Author's conclusions

TERENCIO DE LAS AGUAS, J. Epidemiologie de la lepra en Espagne. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :30-33, 1980.

TERENCIO DE LAS AGUAS. Legislation de la lèpre en Espagne. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :164, 1980.

PSICOLOGIA, EDUCAÇÃO, REABILITAÇÃO SOCIAL PSYCHOLOGY, EDUCATION, SOCIAL REHABILITATION

BERTAMINO, R. Rehabilitation sociale dans le domaine de la lèpre en Italie. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) : 121, 1980.

BROWNE, S.G. Social rehabilitation of leprosy in Great Britain. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :117-118, 1980.

Great Britain has not experienced the social difficulties related to leprosy patients that might have been predicted. The leprosy situation is being defused by the attitude of doctors and their patients.

Front the article

CAEIRO, F.M. Rehabilitation sociale dans le domaine de la lèpre en Portugal. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :119-120, 1980.

FRIST, T.F. Employer acceptance of the Hansen's disease patient and other handicapped persons. *Int. J. Lepr.*, 48(3): 303-308, 1980.

One hundred and four employers were interviewed in Bauru, São Paulo, Brazil, in order to compare their attitudes toward hiring the leprosy patient and persons with five other handicapping conditions (deep facial scars, the loss of two limbs, blindness, tuberculosis, and past psychiatric disorders). It was discovered that the noncontagious, non-deformed leprosy patient was the third best accepted of the six handicapped persons, slightly behind the job candidates with facial scars and tuberculosis. It was also found that 74% of the employers who were interviewed stated that they would either "probably" or "definitely" keep one of their workers if it were discovered that he had leprosy but was

under treatment and represented no risk for other employees. A total of 82% said the same thing regarding a worker discovered to have tuberculosis. The single most cited reason by employers for having a negative attitude toward hiring handicapped candidates as a group was functional — the candidate would be "unable to do the job." The most cited justification for not hiring the leprosy patient was that "customers and other employees wouldn't like it." The author concludes that while there certainly exists employer's prejudice towards the leprosy patient in the Bauru area, the study shows that this prejudice is neither unique nor insurmountable by *any* means. Later practical experience in rehabilitating and placing the leprosy patient in integrated jobs confirms this impression of the study. He urges that attention be given to creating many more integrated vocational rehabilitation opportunities for the Hansen's disease patient.

Authors's summary

GARRIGUE, R. Rehabilitation sociale dans le domaine de la lèpre en France. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) : 125, 1980.

D'autres tentatives de rehabilitation des malades de la lèpre existent en France, dans les autres Centres specialises qui font appel à l'ergothérapie classique et à la formation professionnelle de leurs pensionnaires. Nous avons mentionné l'expérience du groupe C.I.D.R. en raison de sa conception, de son lancement et de son animation qui placent sur un même niveau une association de malades et de bien-portants qui dure depuis 1954. Les réalisations qu'une telle association a obtenues méritaient d'être mentionnés. Elles peuvent servir de stimulant, de modèle ou d'approche pour toute expérience de reclassement socio-économique de malades de Hansen dans le monde.

Conclusion de l'auteur

- IRGENS, L.M. Social rehabilitation of leprosy in Norway. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :132, 1980.
- LEIKER, D.L. Social aspects of leprosy in the Netherlands. In: INTERNACIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :130-131, 1980.
- PARISIS, N. Social rehabilitation of leprosy in Greece. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :129, 1980.
- SAYLAN, T. Social rehabilitation of leprosy in Turkey. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :133, 1980.
- TERENCIO DE LAS AGUAS. Rehabilitation sociale dans le domaine de la lèpre en Espagne. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1) :124, 1980.
- VETERE, C. Rehabilitation sociale dans le domaine de la lèpre en Italie. In: INTERNATIONAL WORKSHOP LEPROSY IN EUROPE, 1, Roma, 1978. *Proceedings Quad. Cooper. Sanit.*, (1):122-123, 1980.