

CURRENT LITERATURE

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Pfaltzgraff, R. E. The classification of leprosy. *Leprosy Rev.* **38** (1967) 15-23.

Frequently, because of erroneous concepts on classification, workers have come to faulty conclusions on many aspects of leprosy. A notable example of this is a recent article, Onset and Pattern of Deformity in Leprosy, by Mallac (*Leprosy Rev.* **37** (1966) 71-91). This article attempts to refute the old concept of "trophic" causes of disability. But in spite of its real contribution to the literature on disability in leprosy, the implication of inevitability of deformity in leprosy remains. The belief that deformity is an inscrutable concomitant of leprosy that may suddenly arise in any patient to curse his future with an irreparable disabling stigma has not been removed. Mallac fails to show that this is not the case, primarily because he does not fully acknowledge the direct relationship of disability to the classification of leprosy. There is a fundamental need to understand the classification of leprosy in order to gain a satisfactory concept of the evolution of disease as well as to understand its epidemiology. More importantly, adequate case handling and treatment are based to a great extent on a complete understanding of classification, for, as Leiker explains, a number of aspects of treatment and management are clarified and simplified by accurate classification. In the section "Solutions to the existing problems in classification" the author admits "there is little, if any, new subject material, but rather an attempt is made to take accepted facts and coordinate them into a unity of understanding in order to form a connected and logical whole." Beginning with oversimplified diagrams the author illustrates the tuberculoid, dimorphous and lepromatous types as part of a spectrum. The manner in which the varieties that occur in each type fit into the

spectrum is then illustrated in more detailed diagrams. The author summarizes as follows. The similarity of opinion held by a majority of present-day workers on the matter of classification of leprosy is noted, and an attempt is made to bring together various divergent viewpoints into a united whole by a coordination of the thinking of several authorities. Emphasis is laid upon the logical basis for a spectral concept of leprosy related directly to the establishment of a balance between host resistance and bacillary multiplication. The logical classification is diagrammatically presented in order that workers may develop a uniform concept of the spectrum of leprosy on which further information can be developed as it becomes clear. The types and varieties of leprosy making up the total spectrum of disease are briefly described, and their relationship to one and another is established in the spectrum. It is pointed out that without an adequate understanding of a proper classification of leprosy, many aspects of this disease, most importantly as related to management and therapy, remain unclear. Thus a plea is made for still further development and elucidation of the subject of classification.

—N. D. FRASER

Susman, I. A. A limited investigation into the significance of the site of the first lesions in leprosy. *Leprosy Rev.* **38** (1967) 37-42.

Contact between infective patients with leprosy and healthy persons appears to be the most important if not the sole method of spread of the disease. This contact is usually direct, but may be indirect, e.g., through infected clothes, bedding, etc. It is generally believed that close and continued contact is most favorable for transmission; in highly susceptible persons, how-

ever, contact of even short duration may result in the disease. Five hundred and ninety-seven leprosy patients, consisting of 345 men and 252 women, were questioned closely as to the location of the first patch or mark of leprosy that appeared on the body. Only those who were explicit in their description were considered; doubtful answers were excluded. Thus the first single lesions of 355 leprosy patients (198 men and 157 women) were taken into account. The patients were all from the northern regions of Togo. Results are compared with those obtained in adults by Horton and Povey in S. India (*Leprosy Rev.* 37 (1966) 113-114), as indicated in the following table:

Location of first lesions by per cent of total

	Present survey	Horton & Povey
Head	14.6	10.8
Arms & hands	34.6	32.3
Trunks, buttocks & thighs	32.1	30.0
Legs & feet	18.7	26.4

The author summarizes as follows: From this very limited investigation into the localization of the first lesion appearing in leprosy patients in northern Togo, there is indication that the sites of such lesions, when ascertained as accurately as possible, show close correlation with the actual sites of contact of the patient, generally with the mother in infancy and early childhood. This, therefore, lends support to the generally held opinion of portal entry of the leprosy bacillus through the skin brought about principally by skin to skin contact.—N. D. FRASER

Saúl, A. Nuevos enfoques de la leprología. [New approaches in leprology.] *Dermatología Trop.* 3 (1964) 250-254.

This paper deals with some of the newer approaches in leprology. The classification remains the same, but borderline cases are

always discussed. These are possibly not a group of cases, but rather a transitory stage in either lepromatous, tuberculoid or indeterminate cases. Leprosy reaction is still a problem in its nature and treatment, and corticotherapy in reactive cases is more harmful than useful. Leprosy is a systemic disease and an increasing number of studies are being made. The author has studied 11 patients in this respect, and has demonstrated damage to the heart, liver and endocrine glands. In the treatment of leprosy new drugs have been employed, but DDS is still the drug of election. New approaches have been made in bacteriology and immunology, especially the inoculation of *M. leprae* in the foot pads of mice. The bases of epidemiology and control of leprosy are: the slight contagiousness of the disease, the role of genetic predisposition, the abolition of compulsory isolation, other drastic measures, and in some countries, the work of mobile units.—A. SAÚL

Vazquez, G. Lepra tuberculoide. Aspectos clínicos y epidemiológicos en México. [Tuberculoid leprosy. Its clinical and epidemiologic aspects in Mexico.] Thesis, University of Mexico, 1966, pp. 115.

Tuberculoid leprosy is the benign type of the disease, noninfectious, regressive and selfhealing. The main symptoms are in skin and peripheral nerves. It was first described by Jadassohn in 1898. Two clinical forms are known; the fixed form and the reactional. The first is more chronic, stable, Mitsuda-positive, and without bacilli in skin and nasal smears. The reactional form is more acute and less stable, and the lepromin test may be transitorily negative. Clinical records of 1,046 leprosy patients from the Centro Dermatológico Pascua in Mexico City were studied from 1955 to 1964; 190 patients were classified as of the tuberculoid type. The disease was more common in females between 21 and 50 years of age. The fixed form predominates over the reactional, and it is common to find a lepromatous case among the relatives, especially the parents.—A. SAÚL

Bert, J., Ayats, H. and Giordano, J. Multi-
nevríte hansenienne et traumatisme.
[Leprosy polyneuritis and trauma.] Bull.
Soc. Med. Afrique Noire Langue Franc.
9 (1964) 97-98.

Polyneuritis due to leprosy appeared
after traumatism in the hand. The role of
traumatism in the evolution of leprosy le-
sions is discussed.—J. LANGUILLON

Masanti, J. G. Tratamiento y curación de la
amiloidosis secundaria de origen leproso.
[Treatment and cure of leprotic sec-
ondary amyloidosis.] Leprología 9 (1964)
47-52.

Four cases of lepromatous leprosy, with
a Bennhold test of 100% retention, were
considered as affected by secondary amy-
loidosis due to lepra reactions and to focal
infections. A fifth case had primary amy-
loidosis due to the leprosy itself. Of the
patients with secondary amyloidosis three
healed spontaneously, and the other after
a "paradoxical reaction" (Melamed and
Jonquières), provoked by butazolidin. The
case of primary amyloidosis improved with
respect to this complication when the caus-
ative disease, i.e., leprosy itself, was cured
by sulfone treatment. These are considered
to be the first five cases of leprotic amy-
loidosis cured and reported.—E. D. L. JON-
QUIÈRES

Karat, A. B. A., Job, C. K. and Karat, S.
Acute lepromatous ulceration of the skin.
Leprosy Rev. 38 (1967) 25-29.

Four patients with acute lepromatous
skin ulceration are described, with clinical
and histopathologic data. Acute leproma-
tous skin ulceration presents with a history
of abrupt spread of lepromatous leprosy
lesions and infiltrations all over the body,
which rapidly progress to skin ulceration,
without any other systemic symptoms. We
recommend that patients with acute lepro-
matous skin ulceration be treated with
streptomycin 1 gm. intramuscularly daily
and INAH (isonicotinic acid hydrazide)
300 mgm. once a day orally. These pa-
tients respond to this regimen dramatically
as far as skin ulceration is concerned, as

well as in their bacteriologic index on skin
smear. The possibility of this complication
being due to a mutant strain of *M. leprae*
is discussed.—AUTHORS' SUMMARY

**Tandon, G. S., Shukta, R. C. and Benjamin,
S.** Comparative study of thermal oedema
in normal and leprotic subjects. Indian
J. Physiol & Pharmacol. 9 (1965) 119-120.

The hand and forearm of each of 5 nor-
mal and 17 leprotic patients was immersed
in a large metal cylinder up to a mark
drawn on the arm with skin pencil. The
level of water when the vessels were full
and the skin pencil mark on the arm were
the same. This was first measured. The
procedure was carried out at 37°C and
then repeated in water at a temperature of
46-48°C for 20 minutes. The difference in
volume before and after heating was noted.
The results indicated statistically less ede-
ma in leprosy patients with ulnar nerve in-
volvement. It was concluded that further
investigation will be required to throw
light on the mechanism of edema forma-
tion.—S. GHOSH

Bakalo, N. A. [On local sweat secretion in
leprosy and certain dermatoses.] Vestn.
Dermatol. i Venerol. 39 (1965) 61-66.

Local disorders in sweating were re-
vealed by Minor's test in 67% of leprosy pa-
tients and in 63% of patients with such
dermatoses as psoriasis vulgaris, tuberculo-
sis of the skin, and scleroderma. Leprosy
patients show positive results in Minor's
test much more often than patients with
the other diseases. Apparently the func-
tional state of sweating depends not only
upon damage of the nervous system but
upon the degree of inflammatory process
as well. Study of sweating in leprosy pa-
tients is of great importance when carried
out on apparently sound skin.—N. TORSUEV

**Rotberg, A., Alchorne, M. M. A. and
Alchorne, A. O. A.** Lesões verrucosas de
lepra. Revisão a proposito de uma obser-
vação de leproma verrucoso traumatico.
[Verrucous lesions in leprosy. Review of
observation of traumatic verrucous lep-
roma.] Presented at Congr. Dermatol.

Lingua Portuguesa and XXII Annual Meeting of Brazilian Dermato-Sifilog., Rio de Janeiro, 22-27 November 1965.

A verrucous leproma developed in a 40 year old white male "stuffer," localized at a site where there had been continuous occupational traumatism over a period of a year and a half. The authors conclude that verrucosities are not an essential aspect of lepromas but a consequence of stasis or external trauma, occurring in a minority of patients. [From authors' abstract]

Iranzo Prieto, V. and Iglesias Vicente, A.

Leprosia lepromatosa con lepromas del paladar como forma inicial. [Lepromatous leprosy with lepromas of the palate as initial lesion.] *Actas Dermo-Sifilog.* 57 (1966) 309-312.

Case report. A case of leprosy is described, in a 39 year old man, whose initial lesion appeared to be on the palate. The patient had first become aware of its existence only four months previously. Examination showed numerous small nodules of similar character in the mouth, around the nose, lips, an ear and elsewhere on the face. There was scattered skin anesthesia. The lesions themselves were rich in acid-fast bacilli, frequently massed in globi. Careful questioning elicited a history of contact with a cousin who had had lesions of active lepromatous leprosy many years previously; his lesions were now in a residual state. The case is reported because of rarity of the lesion as an initial form of leprosy.—E. R. LONG

Dharmendra. Treatment of leprosy. Leprosy in India 38 (1966) 191-198.

Review. Drug treatment is only part of the treatment of leprosy. Various other measures, including education of patients in the use of and protection of hands, feet and eyes, treatment of special symptoms, and physiotherapy, are necessary. All persons engaged in the treatment of leprosy patients should think in terms of comprehensive therapy. Cases needing reconstructive surgery should be referred to appropriate institutions. [From author's summary]

Latapi, F. Manejo del enfermo de lepra. [Management of leprosy patients.] *Dermatología (Mexico)* 10 (1966) 168-174.

Leprosy is an infectious disease, and for this reason doctors and nurses must know what to do when they see a leprosy patient. The author calls attention to the following points: (1) Case-finding. Outpatient clinics for skin diseases are the most important element in finding new cases without prejudice, but the examination of contacts of the well known cases is necessary and useful, especially for finding the earlier cases. (2) Diagnosis of leprosy. Communication to the patient must be made with great care. In some cases it is better not to name the disease. It is important to draw attention to positive points, such as cure of the disease, its slight contagiousness, and ambulatory treatment, and to avoid false statements. (3) Complete study of a case is necessary, not immediately, but after patients' confidence has been won. Social work is required, leading to knowledge of the patient as a human being first and then as a patient. (4) Treatment must be adequate in every case. The author draws attention to the low dosage of DDS to avoid lepra reaction, and considers the steroids as contraindicated in these cases. (5) Epidemiologic study of all cases is important, but true contacts (of lepromatous cases) must be distinguished from false contacts (or T or I cases). (6) Drastic measures and compulsory isolation must be avoided, but some cases need treatment for other diseases, or require hospitalization. In such cases this must be carried out in general services. The author cites other necessary measures, such as rehabilitation of patients and coordination between doctors and institutions (health centers, dermatologic clinics) in order to obtain the greatest benefit for the patients.—A. SAÚL

Saúl, A. Iatrogenia en la lepra. El médico, agente patógeno. [Iatrogenia in leprosy. The physician as pathogenic agent.] *Rev. Fac. Med. (Mexico)* 8 (1966) 341-356.

There are different forms of damage to leprosy patients: (1) When physicians fail

to make the correct diagnosis. Leprosy induces lesions not only in the skin and peripheral nerves, but in almost all organs. So all specialists must know about leprosy, including ophthalmologists, pediatricians, neurologists, dermatologists, and especially general practitioners. Through them it is possible to find cases early, before disability develops. (2) When treatment is erroneous. High doses of DDS may provoke acute reactions. Corticosteroids in lepra reaction may lead to the well known rebounds; and damage may occur from prolonged corticotherapy. (3) When doctors and nurses do not know how to educate the patient, and present old and false concepts of the disease, such as incurability, necessity of isolation, great contagiousness, etc. All these ideas maintain old prejudices and harm the patient and his family. (4) When patients are prevented from entering a hospital for rehabilitation or other medical cares. To avoid the iatrogenic problems in leprosy, proper education is necessary for medical students, doctors, nurses, teachers, priests and others who have to care for patients.—A. SAÚL

✓ **Borsani, R.** Parálisis hanseniana del nervio ciático popliteo externo. Tratamiento quirúrgico. [Paralysis of the sciatic external popliteal nerve. Its surgical treatment.] *Leprológia* 9 (1964) 122-124.

This procedure was proposed to the Panel on Physical Rehabilitation of the VIIIth International Congress of Leprology (Rio de Janeiro, 1963). It is based on transplantation, to the dorsum of the feet, of the posterior tibialis muscle, which is carried in a tunnel across the fourth metatarsal to fix it in the Lambrinudi manner in the plantar aspect of the metatarsal. The feet are then immobilized in dorsal flexion.—E. D. L. JONQUIÈRES

✓ **Wyss, T.** Partial sublimis transfer. Suggestion for new type of leprosy hand surgery. *Leprosy Rev.* 38 (1967) 43-44.

A detailed description is given of a procedure of partial removal of the sublimis tendon in claw-hand rehabilitation, with a

view to avoiding the over-correction deformities that may occur when the whole tendon is removed. Twenty persons have been operated on by the new method at the Sacred Heart Leprosy Hospital, Kumbakonam, India. Seventeen showed satisfactory correlation of the claw hand disability without a shade of over-correction. Contractures of the finger joints are always a strong contraindication for this type of transfer. The new procedure is especially convenient for reconstruction of isolated clawing of ring and little finger, a very common deformity in leprosy.—N. D. FRASER

✓ **Carayon, A., Bourges, M., Bourrel, P. and Languillon, J.** Resultats de la chirurgie a visée pathogénique dans les maux perforants lepreux. [Results of surgery directed to the pathogenesis of perforating ulcers in leprosy.] *Bull. Soc. Med. Afrique Noire Langue Franc.* 9 (1964) 248-252.

The authors report 66 surgical interventions performed with the aim of influencing the pathogenesis. The observations yielded information of pathologic, therapeutic and even pathogenic importance. As a result, knowledge of the neuromuscular mechanism of the perforating ulcers was improved. Internal malleolar ulcers due to phlebo-thrombosis and lymphatic edema, are improved by resection of the internal saphenous nerve. Besides this, the procedure of choice in cases of long duration for which ordinary treatment failed, remains neurolysis of the plantar nerves.—J. LANGUILLON

✓ **Carayon, A., Bourges, M., Bourrel, P. and Languillon, J.** Point actuel de la chirurgie nerveuse périphérique dans la nevrite lepreuse (a propos de 119 operations). [Present state of peripheral neurosurgery in the neuritis of leprosy. Observations based on 119 surgical interventions.] *Bull. Soc. Med. Afrique Noire Langue Franc.* 9 (1964) 453-458.

This paper reports 119 surgical interventions, excluding biopsies. It constitutes a new contribution as well as a correction

to a book recently written by the authors dealing with the surgery of leprosy. Fascicular neurolysis should always be performed after debridement of the epitrochleo-olecrano, the carpal, tricipital, peroneal, and other canals.—J. LANGUILLON

✓ **Carayon, J. and Bourrel, P.** Valeur et complications des trois types d'interventions palliatives pour paralysies lepreuses du sciatique poplite externe. [Value and complications of the three types of palliative surgical operation in paralysis of the external popliteal nerve.] Bull. Soc. Med. Afrique Noire Langue Franc. 11 (1966) 25-26.

The Lambrinudi procedure often leads to disruption of the skin and secondary septic complications, and, more important, is often followed by lack of reunion of the osseous segments due to trophic alterations in the feet of leprosy patients. The immobilization is of long duration. Fixation of the tendon of the tibialis posterior transplanted by the method recommended by Watkins may fail from loss of insertion of the tendon. Through an easy and lasting procedure, it is possible to obtain reanimation of the flexor muscles of the back of the leg by use of the tibialis posterior and the extensor digitorum pedis longus, at a level distant from the trophic disturbances. The duration of the immobilization is short (16 days) and complications are infrequent.—J. LANGUILLON

✓ **Reginato, L. E. and Belda, W.** O retalho frontal mediano cutaneo periostal na reconstrução do forro nasal do nariz retraído. [Median forehead cutaneous-periosteal flap in reconstruction of the nasal lining in the retracted nose.] Rev. brasileira Leprol. 33 (1965) 51-55.

The authors repair the leprosy-retracted nose by the following procedure: a medial interciliary frontal flap is introduced into the nasal cavity across the tunneled skin from the raw area of the glabellar region, for reconstruction of the inner lining, after removal of contracted scar. The free end of the flap is sutured in the inner edge of the nares. After twenty days the pedicle

flap is finally amputated and adjusted in its original bed. The fundamental design is to present a compound flap bringing with the cutaneous flap a layer of the subjacent frontal periosteum. It becomes more rigid and thicker and can restore the deformity of the nasal dorsum without bone or cartilaginous grafts. It can be employed in patients with thin forehead skin and/or highly retracted nose.—AUTHORS' SUMMARY

✓ **Reginato, L. E. and Belda, W.** Correção da face escafoide e restauração da base nasal na lepra pelos retalhos nasogenianos dermogordurosos. [Correction of scaphoid facies and restoration of the nasal base in leprosy through bilateral nasolabial fat-dermal flaps.] Rev. brasileira Leprol. 33 (1965) 69-74.

In leprosy cases presenting an abnormal septolabial angle and scaphoid facies as a result of destruction of the nasal spine and atrophy of the alveolar process of the maxillary bone, the following technic is adopted: after ink delineation of the nasolabial flaps with a nasal upper pedicle, flaps are obtained through removal of the epidermal layer; the nasal floor is undermined over the anterior maxillary. The fat-dermal flaps are then passed through the undermined area until they appear under the opposite external nose. With such technic the nasolabial angle and the atrophied contour of the anterior maxilla are adequately corrected. At the same time the retracted nose is relined by means of the median forehead flap.—[From authors' summary]

✓ **Browne, S. G.** Drug trials in leprosy—some unemphasized factors. Leprosy Rev. 38 (1967) 7-10.

Various underemphasized factors may complicate trials of drugs in lepromatous leprosy, and even vitiate the results. Such factors concern the extent of the lepromatous granuloma, the phase of activity of the disease process, the variability in bacillary concentration and perhaps bacillary morphology from one site to another and from different depths in the granuloma, the complexity of the tissue reaction to lep-

rosy infection, the inherent variability of the disease, etc. Despite these variables, a consensus of expert opinion may be reached concerning the value of a reputed bactericidal or bacteriostatic drug in leprosy.—AUTHOR'S SUMMARY

✓ **Wilkinson, F. F., Barclay, C. A., Manzi, R. O., Gatti, J. C. Cardama, J. E. and Balina, L. M.** Sulfadimetoxina en el tratamiento de la lepra. Resultados a los cuatro años de experiencia. [Sulfadimethoxin in the treatment of leprosy. Results of four years of experience.] *Leprologia* 9 (1964) 91-97.

Sixteen lepromatous patients were treated with daily doses of 1-1.5 gm. of sulfadimethoxin (Madribon, Roche) by mouth for four years. All were free from *M. leprae* in nasal smears after that time, but only 56.25% were negative by skin smear. Tolerance was perfect. The value of this medication is stressed.—E. D. L. JONQUIÈRES

✓ **Chang, Y. T.** Effects of capreomycin, ethambutol, vadrine, neovadrine, Tapazole, griseofulvin and five long-acting sulfonamides in murine leprosy. *Antimicrobial Agents & Chemotherap.* 1964, pp. 777-782.

The effects of capreomycin, dextro-2,2'-(ethylenediimino)-di-1-butanol (ethambutol), 2-pyridyl-(4)-1,3,4-oxadiazolone (5) (neovadrine), the *p*-aminosalicylate of neovadrine (vadrine), 1-methyl-2 mercaptoimidazole (Tapazole), griseofulvin, and five long-acting sulfonamides have been studied in murine leprosy. The therapeutic effectiveness of these drugs was compared with results obtained with 4,4'-diaminodiphenylsulfone (DDS) or streptomycin, since these agents are known to be beneficial in the treatment of leprosy. Capreomycin (10 mgm. per mouse) revealed an activity slightly higher than streptomycin (2 mgm. per mouse). The activity of the smaller dose of ethambutol (0.2% in the diet) was equal to that of DDS, and the larger dose (0.5% in the diet) was greater than that of DDS. Vadrine exhibited a marked activity; Tapazole showed an activity slightly lower than that of DDS, and griseofulvin

was inactive. Of the sulfonamides tested, 3-sulfanilamido-6-methoxypyridazine (Kynex), 4-sulfanilamido-6-ethoxypyrimidine (I.C.I. 33536), and 4-sulfanilamido-6-methoxypyrimidine (sulfamonomethoxine of Lederle and I.C.I. 32525) showed definite suppressive activity. The activity of Kynex was comparable to that of DDS; 2,4-dimethoxy-6-sulfanilamido-1,3-diazine (Madribon) and 2-sulfanilamido-4,6-dimethoxypyrimidine (I.C.I. 3435) were inactive. The therapeutic effectiveness of I.C.I. 33536 was equal to that of Kynex, and sulfamonomethoxine was slightly more active. Although no chemotherapeutic agent eradicated the infectious process, the agents which reduced the pathologic findings at a given time after infection also had a marked effect on the survival of animals. The average survival time of infected animals continuously treated with various drugs until their deaths was as follows: untreated leprosy controls, 126 days; DDS, 162 days; Kynex, 191 days; I.C.I. 33536, 199 days; ethambutol, 207 days; sulfamonomethoxine, 248 days; capreomycin, 236 days; vadrine, 299 days; and neovadrine, 410 days.—AUTHOR'S ABSTRACT

✓ **Chang, Y. T.** Effect of five azo derivatives of tetrahydro-naphthylaminopropylpiperidine in murine leprosy. *Antimicrobial Agents & Chemotherap.*, 1965, pp. 465-468.

The effect of five derivatives of 1-{3-[4-(R-azo)-5,6,7,8-tetrahydro-1-naphthylamino]propyl}piperidine (Parke, Davis & Co., Detroit, Mich.) was studied in murine leprosy in mice: ABT-27010 (R = phenyl), ABT-29614 (R = *p*-methoxyphenyl), ABT-29666 (R = *p*-chlorophenyl), ABT-32875 (R = *p*-bromophenyl) and ABT-38396 (R = 6-methoxy-3-pyridyl). These are azo dyes of scarlet to rust color. In one 3-month experiment, ABT-38396 showed marked suppressive activity; ABT-27010, ABT-29614, and ABT-29666 showed moderate activity; and the activity of ABT-32875 was doubtful. In another 3-month experiment, the activities of ABT-27010, ABT-29666, and ABT-38396 were similar to each other. A long-term experiment was performed to observe the survival time of

animals which were treated continuously until death. The average survival time of animals treated with various drugs was as follows: untreated leprosy controls, 131 days; ABT-27010, 160 days; ABT-29666, 193 days; ABT-38386 (smaller dose), 179 days; and ABT-38396 (larger dose), 176 days. Accumulation of dye residue was observed both externally and internally in animals treated with all these compounds. It was concluded that four of five ABT compounds showed definite suppressive activity in murine leprosy.—AUTHOR'S ABSTRACT.

Languillon, J. Traitement de la maladie de Hansen par la sulforthomidine. [Treatment of Hansen's disease with sulforthomidine.] *Med. Trop.* **26** (1966) 331-341.

Thirteen lepromatous and 12 tuberculoid cases were treated for three years with sulforthomidine (Fanasil) orally in a weekly dose of 1.5 gm. All of the 12 tuberculoid patients were cured (100%) and seven lepromatous patients (59%) became negative. In five cases ENL reactions or reactional neuritis occurred, but were rapidly controlled. The tolerance was exceptionally good. Because of its activity and the possibility of using the oral route for a weekly dose of 1.5 gm., Fanasil may be used for mass campaigns, which constitute the only valid method for controlling leprosy in Africa.—J. LANGUILLON

Cazort, R. J. and Song, Y. K. A trial of thalidomide in progressive lepra reactions. *Current. Therap. Res.* **8** (1966) 299-311.

The authors describe progressive or recurrent lepra reaction as the most serious of the reactional states in lepromatous leprosy. It is commonly manifested by outbreaks of small subcutaneous nodules, pain in bones and nerves, leucocytosis, fever, insomnia, lethargy, and anorexia, and less frequently by iridocyclitis and orchitis. Various synthetic adrenal corticosteroids have proved to be effective suppressives of lepra reactions, but attempts to stop them result in acute exacerbations in the reactions. Sheskin reported rapid subjective improvement with the use of thalidomide.

He made no mention of toxic effects in his first report, in which the drug was used for periods up to 4 weeks. However, in a subsequent paper he listed numerous toxic effects when thalidomide was used for periods up to 10 months. The present authors give the results of a therapeutic trial on 24 patients suffering from reactional leprosy in the Chiangmai Hospital and McKean Leprosy Hospital, Chiangmai, Thailand. The criteria of entry to the trial were a diagnosis of lepromatous leprosy, a diagnosis of recurrent lepra reaction, previous treatment with prednisolone for periods of at least 1 week and a period of 1 week or more since the last treatment with DDS. Prednisone was discontinued in all but 4 patients, 2 days before thalidomide was commenced. However, by this time the corticosteroid had been gradually reduced to half the original dose. In 4 patients no attempt had been made to reduce the dose, or to withdraw it completely. Thalidomide was given orally in tablet form, 3 tablets of 100 mgm. per day. The authors report efficacy in the relief of severe lepra reactions. The subcutaneous nodules and associated erythema disappeared, pains in muscles, joints and nerves were considerably lessened or completely removed, body temperatures returned to normal, elevated white counts and sediment rates were lowered, and general condition of the patients appeared much improved. There is a possibility of an immunosuppressive action by thalidomide in the lepra reactions. Three patients in 2 weeks of the therapy suffered acute exacerbations of the lepra reactions. At the end of the trial when thalidomide was withdrawn all patients had relapses. Thalidomide seemed to offer some protection against reactions induced by DDS. The results over the short period of 2 weeks support the claim of some beneficial effect in progressive lepra reactions. However, the occurrence of relapses indicates that thalidomide alone and in the doses used is not continuously effective and the spectrum of untoward effects indicates that it is not harmless. The relapses after cessation of thalidomide indicate that after its use for a short time it is not likely to interrupt permanently the cycle of recurrent or progressive lepra reactions. [Ab-

stract by J. R. Innes, *Trop. Dis. Bull.* 63 (1966) 1200-1201]

Opromolla, D. V. A., Souza Lima, L. and Marques, M. B. A talidomida nos surtos agudos da lepra. (Eritema nodoso ou polimorfo.) [Thalidomide in the acute crisis of leprosy. Nodular or polymorphous erythema.] *Hospital* (Rio de Janeiro) 69 (1966) 827-844.

The authors have confirmed that thalidomide is effective in the control of reactions in leprosy and its continued administration prevents new attacks of reaction. They treated 43 patients who had lepra reaction in lepromatous leprosy, and a group of borderline patients, with thalidomide. The drug was administered in a dose of 100 mgm. daily, and then on alternate days. With the doses used no side effect was observed. When treatment was stopped 5 to 10 days later the nodules of lepra reaction and fever reappeared. The authors think that thalidomide should be used because it offers a chance of instituting direct attack on the disease itself. [Abstract by J. R. Innes, *Trop. Dis. Bull.* 63 (1966) 1201]

Opromolla, D. V. A., Mendes, J. P. and de Souza Lima, L. A terramicina no lepra. [Terramycin in leprosy.] *Rev. brasileira Leprol.* 33 (1965) 3-21.

Antibiotics in the authors' opinion, represent a promising group of drugs against lepromatous leprosy, although the most neglected. The tetracycline group has been known for its broad spectrum of activity, low toxicity rate and slowly developing type of resistance. References in the literature on the use of antibiotics in leprosy show irregular periods of treatment, dosages employed and conditions under which trials were conducted, as well as a lack of uniformity in choosing patients and carrying out studies, which therefore yield a disparity of conclusions. In 1964, Mariano, from Belo Horizonte, Brazil, reported good results in the treatment of lepromatous and tuberculoid cases with intramuscular Terramycin (oxytetracycline) in a dosage of

100 mgm. every 48 hours. Encouraged by these results the authors undertook a long-term study with oxytetracycline in lepromatous leprosy. Twenty-two patients were included. Terramycin was applied by the intramuscular route in dosages of 100 mgm. every 12 hours, for about 12 months. Nineteen patients presented circumscribed lesions with predominant papules, tubercles and nodules. The remaining three cases had erythema and diffuse infiltration. All 22 patients treated with oxytetracycline improved clinically. On the average, improvement took place between the first and the third month of treatment; from there on, involution of the lesions slowed down considerably. One case was typically a sulfone-resistant patient, who improved remarkably after 15 days of treatment with Terramycin. Fifteen cases yielded negative nasal bacilloscopies after treatment, and skin bacilloscopy shifted toward normalization. However, qualitative bacilloscopy seems to offer much more evidence as to the drug's influence, showing an increasing number of degenerated forms. The outstanding improvement achieved between the first and the third month of treatment (with particular reference to one case) led the authors to consider oxytetracycline endowed with a marked antileprotic action, which seemed to increase whenever a pronounced and fast bacillary proliferation takes place. In general, oxytetracycline, used during one full year in the majority of the cases, was well tolerated by the patients. [From authors' summary]

Proenca, N. Tratamento sintomatico da reação leprotica com o sulfato de hidroxicloroquina. [Symptomatic treatment of the lepra reaction with hydroxychloroquine sulfate.] *Rev. brasileira Leprol.* 33 (1965) 35-44.

A group of 20 patients was given hydroxychloroquine, and a corresponding group a placebo. Special attention was given to the norms that should govern therapeutic research on the lepra reactions, including (1) a control group treated with a placebo, (2) "blind" conduct of the research, avoiding psychologic influences on either investigator or patient, (3) omission of concomi-

tant use of other drugs, (4) selection of cases for uniformity, and (5) limitation of cases to the lepromatous type. On comparing results in the treated and control groups no significant difference was found. [From author's summary]

Schulz, E. J. and Falkson, G. The effect of procarbazine on leprosy. *Leprosy Rev.* **38** (1967) 11-14.

Procarbazine (N - isopropyl - alpha - (2-methyl-hydrazino)-p-toluamide hydrochloride N.S.C. 77213) is a methylhydrazine derivative of established value in the treatment of Hodgkin's disease. It has been shown to suppress immune reactions so that even if no antibacillary effect could be predicted, it was hoped that it would suppress erythema nodosum leprosum (ENL). Results with its use were as follows. Eleven patients with leprosy were given low doses of procarbazine with dapsone for 22-68 weeks. In 2 of 6 patients with severe recurrent ENL the lesions became less painful, but no objective improvement was observed. In 5 patients with infiltrated lesions, resolution may have been hastened by the addition of procarbazine to standard treatment. Procarbazine did not significantly affect the bacterial indices.—N. D. FRASER

Consigli, C. A., Biagini, R., Corcoba, C. and Vazquez, C. A. Estudio de la función tiroidea en enfermos de lepra tratados con Ciba-1906 inyectable. [Studies on thyroid function in lepromatous patients treated with injectable Ciba-1906. *Leprológia* **9** (1964) 9-11.

Thyroid gland function was studied in 5 lepromatous patients treated with injections of Ciba-1906. A slight depression of the thyroid activity was noted. It was proved that this faint depressive action does not involve any risk, even in long-term treatment.—E. D. L. JONQUIÈRES

Gutierrez, R. Preliminary report on the effects of L-triiodothyronine, radioactive iodine¹³¹, and Methimazole on experimental murine leprosy. *Leprosy Rev.* **38** (1967) 31-33.

Preliminary data seem to point to some protective action of iodine¹³¹ and of L-triiodothyronine on experimental infection with the Stefansky bacillus. (From author's summary)

Floch, H. A. Sur la chimiorésistance du bacille de Hansen et le traitement de la lèpre par des associations médicamenteuses. [Chemoresistance of the leprosy bacillus and the treatment of leprosy by combined drug therapy.] *Bull. Soc. Path. exot.* **59** (1966) 188-192.

In studies in French Guiana best results were obtained by associating sulfones (basic treatment) with diphenylthiourea, sulfanilamides with delayed activity, oxydiazolone, thiosemicarbazones, and the antibiotics cycloserine, streptomycin and rifomycin.—AUTHOR'S SUMMARY

Ojha, D. and Singh, G. The role of Ayurvedic "Samshodhan-Karm" in treatment of leprosy. *Leprosy Rev.* **38** (1967) 57-61.

Various texts on the ancient Indian system of medicine have made note of "Samshodhan-Karm" (purification measures), with great stress in the treatment of "Kushthas" (skin diseases including leprosy). Twenty male patients with untreated, advanced infiltrative and nodular forms of lepromatous leprosy were studied. These were paired by a random procedure so that two groups of 10 patients each were made, one for trial and the other for control. DDS alone was taken as the control drug against which results obtained with Ayurvedic "Samshodhan-Karm" plus DDS were compared, after 6 months and 12 months of treatment. Assessment at various intervals after treatment has not shown any appreciable improvement, clinical and/or bacteriologic, from the combination in any of the patients. At the same time no untoward effect was encountered that could be definitely attributed to the Ayurvedic "Samshodhan-Karm."—N. D. FRASER

Jonquières, E. D. L. Leproma histoi-de (Wade). [Histoid leproma (Wade).] *Leprológia* **9** (1964) 98-106.

Six cases of the "histoid" variety of leproma (Wade) are described. To date the author has called these lepromata "young lepromas" or "pseudofibromatous lepromas," following descriptions of lepromas by Mitsuda. Of the six cases presented, five were seen in lepromatous patients and one in a borderline case. Only one patient fitted perfectly with the description of Wade, i.e., relapsed lepromas in an apparent residual lepromatous patient with predilection for certain exposed sites. Three principal types of lepromas are recognized by the author: (1) Young lepromas characterized by histiocytes, lymphocytes, plasmocytes and fibroblasts, with no whorl arrangement, with no classic lepra cells, and with a great number of bacilli, long and clumped in units. Stains for fat are nearly always negative in this type, although occasional small droplets of fat are seen. This type is very common. (2) Evolutive leproma with an increasing number of Virchow cells ending in xanthomatoid aspects. Globus disposition is notorious. Fat stains are positive. Cysts, giant cells of foreign-body type, cyanophil detritus, etc., are seen in last stages. Fibrosis may occur. (3) The "histoid" leproma of Wade, probably a young leproma in a special reactional field.—AUTHOR'S SUMMARY

✓ **Melamed, A. J., Manzi, R. O. and Melamed, M.** Reacción leprosa interpolar dimorfa con estructuras histioides (Wade). [Interpolar dimorphous leprosy reaction with histoid structures (Wade).] *9* (1964) 86-90.

A lepromatous patient was free from clinical and bacteriologic abnormalities after many years of sulfone treatment, but some time after the sulfones were discontinued a borderline outbreak was seen. In this reactional state biopsies showed a lepromatous histoid structure in some places and tuberculoid follicles or indeterminate infiltrations in others. The authors believe that the histoid structure is the initial phase of leproma and is to be seen either in genuine lepromatous or in transitional phases (interpolar, dimorphous, paralepromatous). The histoid lesion was again biopsied 8 months after the reinstatement of treatment.

A conversion of the histoid leproma into a granulomatous one was observed.—E. D. L. JONQUIÈRES

✓ **Masanti, J. G.** Nefropatia amiloidea. [Amyloid nephropathy.] *Leprológia 9* (1964) 38-56.

A study of 1,268 clinical records of leprosy patients at the Sanatorio Baldomero Sommer, of whom 498 had died, appears to prove that amyloid nephropathy is the most important cause of death in lepromatous patients, particularly in those with residuals of lepra reaction. Lepra reaction and chronic infections are found in patients with nephropathy. As chronic infections and lepra reactions are the most important causes of leprosy amyloidosis, and as they are the conditions most frequently found in connection with nephropathy, it is concluded that renal amyloidosis is an important cause of nephropathy. Renal amyloidosis may be responsible for death in two different ways, i.e., amyloid renal sclerosis, and postamyloid renal sclerosis. In connection with this second possibility it was noted that in patients with amyloid nephropathy disappearance of the amyloid substance does not mean recovery from the nephropathy. This condition is called by the author "post-amyloid nephropathy." Its real significance is unknown.—E. D. L. JONQUIÈRES

✓ **Ramanujam, K. and Ramu, G.** Calcification of peripheral nerve trunk in leprosy. Report of a case. *Leprosy in India 38* (1966) 185-190.

Case Report. A woman 50 years old complaining of skin changes of apparently non-leprosy character had suffered from an erythematous patch on one foot 20 years previously, which had subsided without treatment. At the time of the most recent examination this region was completely anesthetic. The right lateral popliteal nerve leading to the area was greatly thickened, not tender and bony hard. The right musculocutaneous nerve was also thick and hard. Roentgenograms showed well defined calcification of both thickened nerves. The case was classified clinically as retro-

gressed major tuberculoid leprosy with calcification in parts of these two nerves.—E. R. LONG

Kochergin, V. N. [On the x-ray diagnosis of bone lesions in leprosy.] *Vestn. Khirurg. Grekova* 97 (1966) 90-92.

Bone systems, especially the small tubular bones of the foot and hand, are most frequently affected in lepromatous and undifferentiated forms of leprosy. Specific granulomas up to 5 mm. in diameter are characteristic of leprosy. In undifferentiated forms trophoneurotic changes prevail, which ultimately result in dissolution of small tubular bones and marked deformity of the foot and hand.—N. TORSUEV

Job, C. K., Karat, A. B. A. and Karat, S. Gynaecomastia in leprosy. *Leprosy Rev.* 38 (1967) 45-48.

Histopathologic features in 14 patients with gynecomastia, one of the less frequent complications of leprosy, are described. Proliferation of connective tissue and duct epithelium were typical features in all patients. The picture is identical with that described in gynecomastia due to other causes. Two patients showed small foci of lepromatous granuloma. It is suggested that, as in gynecomastia associated with other conditions, hormonal imbalance and particularly an excess of estrogens, may be the cause of enlargement of the male breast in leprosy. (*From authors' summary*)

Priestman, F. G. Nerve abscesses in Northern Nigeria. *Leprosy Rev.* 38 (1967) 35-36.

In view of the frequent comments on the rarity of nerve abscesses in Africa, it may be of interest to report several patients seen in the last 4 years in Northern Nigeria, including 3 patients with multiple abscesses in cutaneous nerves. Seven patients with nerve abscesses, some of them multiple, are described. These came from the Plateau and Bornu Provinces of Nigeria; all of them were seen within the last 4 years.—N. D. FRASER

Sacheri, R. F. Neoplasias malignas en pacientes hansenianos. [Malignant neoplasia in leprosy patients.] *Leprológia* 9 (1964) 118-121.

Of 15 leprosy patients with cancer in otorhinolaryngeal sites, five had carcinoma of the superior aerodigestive mucosa. It is concluded that all dysphonias found in leprosy patients must be studied by the otorhinolaryngologist to rule out cancer.—E. D. L. JONQUIÈRES

Rees, R. J. W. Experimental studies in leprosy. Recent applications of experimental human leprosy in the mouse foot pad. *Leprosy in India. Suppl.* July 1965, No. 3a.

Review and analysis of previous studies by author and others in this field. Transmission of human leprosy to the mouse foot pad was shown by Shepard in 1960 and confirmed by workers elsewhere (Antwerp, Carville, London). A similar type of infection was produced by Waters and Nivens in the hamster ear. Rees and associates have made successful foot pad inoculations from 35 leprosy patients from Malaysia, Burma, East Africa and the West Indies. The "ceiling effect," i.e., failure of the infection to progress beyond a certain point, regardless of the size of the inoculum, has been observed regularly. The procedure is useful for the experimental study of many problems in leprosy, including the investigation of new drugs and their dosage, the demonstration of drug resistance, the determination of viability of mycobacteria, and study of nerve involvement by leprosy microorganisms. Efforts are in course to enhance the spread of local infection, overcoming the ceiling effect. Suramin and cortisone have proved ineffective for this purpose. Further studies are in course on the assumption that the limiting factor in the ceiling effect may be an immunologic one.—E. R. LONG

Samigullin, R. Z. [Some factors in non-specific humoral immunity against leprosy.] *The Materials of Theoretical and Clinical Medicine, Tomsk*, 1965, No. 5, pp. 54-57.

The condition of humoral factors in non-specific immunity was studied in 60 leprosy patients with the help of serograms according to Vasiliev's modification of Shapiro's method. In 35 patients the serum was examined repeatedly after 13-14 months. Most patients were middle-aged. They included 59 men and 34 women. In 81.8% of the patients the Mitsuda reaction was negative. The titer of general hemolytic activity was 1/20-1/40 in 69.9% of donors. In 72% of leprosy patients who were examined for the first time, it was 1/5-1/10, but on second examination the titer was 1/10-1/20 in 81.7% of patients. The titer of complement was 0.03-0.04 in 75.6% of donors; in leprosy patients at the first examination it was 0.04-0.06 in 75.1%, but on second examination 0.02-0.03 in 68.5%. The titer of normal hemolysins was 1/20-1/40 in 86.2% of donors; in leprosy patients at the first examination it was at this level in 70.6%, but at a second examination in 85.2%. The titer of hemagglutinins in 86.6% of donors ranged from 1/20 to 1/40; in 85.3% of leprosy patients it ranged from 1/10 to 1/20, but on second examination from 1/20-1/40 in 78.7%. The author does not consider the changes discovered in general hemolytic activity, complement titer and normal antibodies, to be directly connected with the leprosy disease.—N. TORSUEV

Maeda, M., Mizuguchi, Y., Murohashi, T., Ishiwara, S. and Arkawa, I. Relationship between tuberculin reaction and Fernández' reaction among general population. Report II. Results obtained in the inhabitants of remote islands. *Kekkaku (Tokyo)* **40** (1965) 351-358.

Tuberculin and Fernández' reactions obtained in the inhabitants of remote islands were studied. The rate of positive Fernández reaction among tuberculin-negative persons showed close correlation with the prevalence of leprosy. The prevalence of leprosy in certain districts could be estimated to a certain extent from the rate of positive Fernández reaction in the tuberculin-negative population of that district, not vaccinated with BCG.—K. KITAMURA

Arcuri, P. B. and Usandivaras, R. L. Estudio comparativo de las reacciones

leprolímicas con las reacciones tuberculínicas. [Comparative study of leprolin and tuberculin reactions.] *Leprológia* **9** (1964) 24-27.

Immunologic reactions to two protein antigens (LPT and raw tuberculin of Koch in a 1:1,000 dilution) were studied in tuberculoid patients, contacts, and healthy persons. It was concluded that in the healthy adult tuberculin sensitivity does not interfere with the leprolinic hypersensitivity. Therefore the LPT is specific for hypersensitivity to *M. leprae*.—E. D. L. JONQUIÈRES

Gay Prieto, J. Lepra tuberculoide aparecida despues de una intradermoreacción positiva a lepromina. [Tuberculoid leprosy appearing after a positive reaction to an intradermic injection of lepromin.] *Actas Dermo-Sifiliog.* **56** (1965) 369.

The author reports the case of a female child in the province of Jaen in whom characteristic signs of tuberculoid leprosy appeared three months after two simultaneous Mitsuda reactions. The disease was characterized by the cutaneous manifestations of tuberculoid leprosy, with anesthesia, tactile and pain changes, and a histology marked by tuberculoid infiltration and lesions of the nerves. Attention is called to the dose employed in the treatment, 200 mgm. of sulfone daily, which the author considers excessive, believing it should not have exceeded 100 mgm. daily.—F. CONTRERAS

Furtado, T. A. and Schulz, K.-H. Reatividade leprominica em individuos com tuberculose cutanea provenientes de area não endemica de lepra. [Lepromin reactivity in persons with skin tuberculosis in an area nonendemic for leprosy.] *Rev. brasileira Leprol.* **33** (1965) 75-79.

The authors investigated lepromin reactivity (Fernández and Mitsuda) in 50 persons with skin tuberculosis and in 6 with sarcoidosis, all residents in a nonendemic area (Hamburg, Germany). The early reaction was 20% positive and the late reaction was 80% positive, whereas in the control group the results were 0% and 41.3%,

respectively. Statistical analysis showed that the differences found were significant. All the sarcoidosis patients gave negative results with both reactions. The data obtained are highly suggestive of the validity of the hypothesis explaining lepromin-positivity in nonendemic countries on the basis of cross-sensitization with *M. tuberculosis*.
—AUTHORS' SUMMARY

Tilley, J. C. An interesting reaction in leprosy. *South. Med. J.* **59** (1966) 766-768.

The author draws attention to a reaction that may occur in leprosy when the skin is frozen. The reaction depends on the presence of cryoproteins. Case histories are given of 2 patients in the leprosarium at Carville, Louisiana. The lesions are produced by freezing the skin with ethyl chloride. Four figures given show peculiar nodose lesions and their association with ulceration. Matthews and Trautman have demonstrated the presence of a cryoprotein and have shown that 89% of patients with lepromatous leprosy had cryoproteinemia, as did 6 patients with dimorphous leprosy. In tuberculoid leprosy cryoproteins were absent. When leprosy became inactive there were no demonstrable cryoproteins. Further studies are in progress. [From abstract by J. R. Innes, *Trop. Dis. Bull.* **64** (1967) 55]

Mertzlin, G. V. and Struchkova, V. N. [Serologic tests with sera from patients with lepromatous leprosy during periods of exacerbation.] *Vestn. Dermatol. i Venereol.* **40** (1966) 41-43.

The dynamics of results in a complex of serologic tests in 22 patients with lepromatous leprosy were studied. It was found that positive reactions with a modification of the CET by Mertzlin, which slowly become negative under the effect of specific treatment with antileprosy preparations, may again be intensified up to sharply positive in exacerbations of lepromatous leprosy. Serologic tests for syphilis frequently become positive to a certain extent. The latter usually become negative again under antileprosy treatment when the exacerbation is arrested.—N. TORSUEV

De Luna, R. Estudio electroforético de las seroproteínas en enfermos de lepra. [Electrophoretic study of serum proteins in leprosy patients.] Thesis, University of Mexico, 1966, pp. 50.

After review of literature on the subject, the author determined the protein electrophoretic pattern in 30 Mexican patients with leprosy, including 8 untreated lepromatous and 16 treated lepromatous patients, 4 with lepra reaction, and 2 untreated tuberculoid cases. Ten healthy persons were examined for comparison. Determination of serum proteins was made by electrophoresis in all cases, and results were studied by statistical methods. Hypoalbuminemia and hyperglobulinemia were found, especially increase of gamma globulin in untreated lepromatous cases and patients with lepra reaction. There was little change in tuberculoid cases. The author compared his results with those obtained by others and concluded that there is not a typical serum-protein picture in leprosy. Therefore this is not a useful method for diagnosis of the disease in doubtful cases, but it could be useful in determining prognosis, classifying cases, and probably in evaluation of the effectiveness of treatment. This is the first study on the subject in Mexico.—A. SAÚL

Shepard, C. C. Vaccination against human leprosy bacillus infections of mice: protection by BCG given during the incubation period. *J. Immunol.* **96** (1966) 279-283.

The author has already shown that BCG vaccination protects mice against foot pad infections with *M. leprae*. To see if vaccination during the incubation period of the experimental infection would provide protection, groups of mice were given 1 or 2 injections of BCG at intervals before or after challenge with *M. leprae*. Vaccination 1-2 months before challenge was found to give the expected degree of protection; immediately after challenge it gave no protection, but later in the incubation period, during the logarithmic phase of growth, vaccination gave increasing protection up to the level attained in the prechallenge

period. By analogy BCG vaccination of human beings early or late during the incubation period would be expected to provide protection against leprosy. [Abstract by J. R. Innes, *Trop. Dis. Bull.* 63 (1966) 1202]

Prasad, K. V. N. and Mohamed Ali, P. Some genetic aspects in the epidemiology of leprosy. Study of multiple case families. *Leprosy Rev.* 38 (1967) 49-56.

Although it is universally accepted that *M. leprae* is the causative organism of leprosy, it is apparent that the bacillus does not produce disease in all human beings on contact. Various factors have been invoked to explain the supposed variation in susceptibility, including diet, climate, age, sex incidence of other diseases, and factors variously described as innate, inborn, constitutional, familial and hereditary. Rotberg (1937), Aycock (1940, 1941, 1948, 1962), and Steinigar (1941), suggested genetic factors as determinative in susceptibility to leprosy. Kinnear Brown (1950, 1956, 1957, 1959) and Spickett (1962, 1963, 1964) also have supported the hypothesis that there is a genetic factor in susceptibility to leprosy. Although several authorities have supported the concept that leprosy may be manifest only in those genetically susceptible to it, the hypothesis is not generally accepted. A detailed analysis of 579 families studied by Noordeen and Mohamed Ali is set forth; 1,296 leprosy patients were found among the 3,382 members of these families. The data relating to the multiple patient families support the theory that the disease leprosy may be determined genetically. A genetic ratio exists between the affected and nonaffected progeny under the assumption of incomplete dominance. Penetrance rates have been calculated for the population under study, with the help of which we can predict something about the prevalence of the disease in the future.—N. D. FRASER

Haedo, J. M. La lepra en edad escolar: 0-15 años. [Leprosy in school children: 0-15 years.] *Rev. cubana Pediat.* 36 (1964) 162-164.

Leprosy is a disease as old as mankind. It was introduced in America during the period of colonization. The first cases in Cuba were known in 1831. The campaign against leprosy began in 1942 and treatment with Promin in 1945. In a survey in 1961, 4,508 cases of leprosy were registered, but it was supposed that there were more unknown cases. Most cases in patients between 0 and 5 years of age were indeterminate or tuberculoid in type. Symptoms began at a very early age. In spite of the susceptibility of children to leprosy, it was noted that children had more resistance against the disease when very young. The earlier symptoms were hypopigmented and erythematous patches, anesthetic zones and infiltration of earlobes.—A. SAÚL

Vázquez, A. M. Lepra en la ciudad de México. Epidemiología y control. [Leprosy in Mexico City. Epidemiology and control.] Thesis, University of Mexico, 1966, pp. 88.

Leprosy occurred in Mexico 400 years ago. It was brought by the Spaniards, but commerce with the Orient played an important role in spread of the disease throughout the country. There are now 50,000 leprosy patients in Mexico; the prevalence rate for the country is 0.54/1,000. Mexico City is a new endemic area in the country, with a prevalence rate of 0.23/1,000, and patients from the states of Guanajuato, Jalisco and Michoacán, as well as the city itself. The campaign against leprosy in Mexico City began with Hernán Cortez, who established two leprosaria, one of which has remained for four centuries. In 1930, a new and more active period began, with another leprosarium, dispensaries and one preventorium. In 1960 mobile units were introduced. The number of leprosy patients in Mexico City is increasing, because industrialization of the city and its environs attracts many country people from endemic areas. In the dermatologic center Dr. Ladislao de la Pascua, in downtown Mexico City, 4,612 leprosy patients have been registered. Of these, 1,790 (38.8%) live in the city. Of these patients 35% are under observation, 34.6% have been lost, 25.3% are dead, 1.7%

are in a leprosarium, and 3.2% have been discharged. The southeast and northwest areas of the city are the most highly endemic. Mobile units and coordination with all health centers in the city are necessary for control of the increasing problem of leprosy in Mexico City.—A. SAÚL

Flores, R. H. La lepra en el estado de Oaxaca (México). Exploración epidemiológica del distrito de Jamiltepec. [Leprosy in Oaxaca (Mexico). Epidemiologic exploration in the district of Jamiltepec.] Thesis, University of Mexico, 1966, pp. 114.

This is an epidemiologic study of leprosy in Jamiltepec, Oaxaca, a state in the south of Mexico. Seventy-five leprosy patients were found, with greatest numbers in Cortijos, Jamiltepec, Lo de Soto, Llano Grande and Pinotepa Nacional. The general prevalence of the state is recorded as 0.060/1,000, but more patients are believed to be in the region. Leprosy probably came to the state from Spain, the Philippines and Africa. The size of the problem of leprosy in Oaxaca is not yet known. More mobile units are necessary to work over the state, and detect and control more patients.—A. SAÚL

Roigas, E. and Uuetoa, R. [Seventy-five years of organized measures for leprosy control in Estonia.] *Vestn. Dermatol. i Venerol.* **40** (1966) 73-76.

Data are presented on the history of leprosy in Estonia since 1222. The foundation of leprosaria by the Society for Control of Leprosy in Livland in 1891 must be considered as the first organized measure for control of leprosy in Estonia. Further success achieved up to the present time is described.—[From authors' abstract.—N. TORSUEV]

Cohn, E. Dermatologisches aus Mexiko. [Dermatology in Mexico.] *Dermat. Wschr.* **150** (1964) 172-173.

Mexico and all Latin American countries have the same dermatologic diseases as

Germany and other European countries, but there are two diseases which are not often observed in Europe, viz. leprosy and pinta. Pinta is more or less endemic in areas of Michoacan, Guerrero, Morelos and other states of Mexico, with about 100,000 cases. Although it is not life-endangering, anesthetic lesions on the face and arms can be a problem. Treatment with penicillin is successful. The campaign against leprosy in Mexico has been characterized by a special method, viz. dermatologic survey avoiding all drastic measures and compulsory isolation, i.e., fight against leprosy but not against leprosy patients.—A. SAÚL

Machado, P. A. Doença de Hansen e aptidão profissional. [Leprosy and professional capacity.] *Rev. brasileira Leprol.* **33** (1965) 45-49.

Reference is made to regulations issued for establishment of a concept of capacity and incapacity for welfare work purposes. This concept differs from the medical one, as rehabilitated and professionally qualified patients did not succeed in adapting themselves to new jobs, whereas severely mutilated individuals are able to accomplish specialized functions. Professional ability and, therefore, complete rehabilitation, do not depend essentially on physical capacity and training, but rather on a factor of psychologic origin. However, very little information is available on the personality of the leprosarium patient, and none on the ambulatory one. Analysis of the nonisolated patient is still to be made. Leprosy is not an infection comparable with others, because these induce a process of attraction for the patient, whereas leprosy leads to a process of rejection. The problem of alterations in personality must be investigated scientifically so that an integral rehabilitation may be obtained. Thus, only with specialized collaboration, to be provided by psychiatry, will it be possible to study the personality of the segregated and nonisolated patient in order to establish scientific planning for sanitary education, social assistance, rehabilitation and even medical assistance in dispensaries and leprosaria.—[From author's summary]