

## CURRENT LITERATURE

*It is intended that the current literature of leprosy shall be dealt with in this department. It is a function of the Contributing Editors to provide abstracts of all articles published in their territories, but when necessary such material from other sources is used when procurable.*

MEYER, W. H. History of leprosy in Louisiana. *J. Louisiana Med. Soc.* **107** (1955) 359-366.

Early cases of leprosy in America came principally from Africa and Europe, and later from Asia. The majority of the imported cases in (a) the Gulf states entered from Africa, the West Indies, and Mexico; in (b) the upper Mississippi valley from the Scandinavian countries; in (c) the west coast states, from Mexico, Asia and the islands of the Pacific; and in (d) the Atlantic coast states from Europe, Africa and the West Indies. With the exception of the three Gulf states—Florida, Louisiana and Texas, which are generally described as endemic states—the great majority of the leprosy cases in America have occurred in foreign-born individuals. There is no civilized country which does not have its quota of imported cases, but with rare exceptions the disease shows no tendency to spread. This relative immunity of certain parts of the world is well exemplified in the United States, where there have long been two main foci of the disease; one in the upper Mississippi valley, chiefly in Minnesota, and the other in the Gulf states. Here we see one outstanding difference in that in the former area the disease shows a tendency to extinguishment, while in the latter area new cases are found frequently in native-born individuals. Isolation has always been considered one of the most important factors in the decline of leprosy in Europe and elsewhere, but isolation in the strictest sense was never practiced in the North Central states. Normal family relations were maintained, and in no account is there a record of one marriage partner transmitting the disease to the other. —SR. HILARY ROSS

[This review is misleading in the implication that there exists a leprosy focus in the upper Mississippi valley which only now is becoming extinguished. It is a historical fact that a number of imported cases settled in that region, but the secondary cases were so very few that it would be an exaggeration to say that the disease ever became endemic.—EDITOR.]

RODRIGUEZ MORENO, T. and MONTES BRAVO, F. Contribución al estudio de la historia de la lepra. [Contribution to the study of the history of leprosy.] *Actas Dermato-Sifiliogr.* **47** (1955-1956) 83-100.

A documented retrospective study of the history of leprosy in the old days, especially during the invasion of Andalucía and Sevilla. —F. CONTRERAS

DEL VECCHIO, G. Risultati di un recente censimento dei lebbrosi in Italia. [The results of a recent leprosy census in Italy.] *Ann. San. Publica (Rome)* **16** (1955) 1267-1293.

There has been a great increase of officially-known leprosy cases in Italy. The prevalence on the whole is greater in the south than in the north, although there are 45 cases in Liguria. The regions most affected are Calabria (98), Sicily (77), and Apulia (50). The total known at the end of 1954 was 434, of whom 188 were in institutions and 246 at home, this being an increase of 25 since the previous year. The number of household contacts was 1,163. It was hoped by enlarging the existing leprosy hospitals at Genoa, Acquaviva delle Fonti, Messina and Cagliari, and by the construction of pavilions at Gioia del Colle, that sufficient accommodations could be provided for patients, thus to stop the further spread of the disease. Other legislative,

welfare, economic, prophylactic and health measures were also required.—[From abstract in *Trop. Dis. Bull.* **53** (1956) 1123.]

AHLWEDE, E. Die Lepra in der Südafrikanischen Union. [Leprosy in the Union of South Africa.] *Deutsche med. Wchnschr.* **81** (1956) 1861.

Since 1924 more than 12,000 patients have been discharged from the five leprosaria of the South African Union. In 1952 there were still 2,072 patients on hospital treatment. In the Westfort Institution the average annual number of deaths before the advent of the sulfones was 99; in 1952 it was reduced to 26. At the Mkambati leprosarium 73% of the patients could be proposed for discharge in 1952. —E. KEIL

ROBERTS, L. O. Leprosy in the western Pacific region. *J. American Med. Women's Assoc.* **11** (1956) 251-253.

The author points out that as one moves from the temperate through the tropical to the equatorial zone, the prevalence of leprosy rises markedly and the percentage of lepromatous cases falls. This is in line with observations made in Africa which indicate that darker-skinned races are especially liable to contract leprosy, and also to have it in the tuberculoid form. In the western Pacific region, it is only in the equatorial zone that one finds high prevalence rates. The author discusses pilot programs set up in the Philippines, Malaya and the British Solomon Islands. Treatment with the sulfone group of drugs, and also BCG vaccination, are discussed. Increasing health education with the right approach, as well as laboratories and research centers, are badly needed.

—SR. HILARY ROSS

COCHRANE, R. G. Leprosy in Korea. Part I. *Leprosy Rev.* **26** (1955) 141-146.

——— *Idem.* Part II. *Ibid.* **27** (1956) 19-28.

1. The author holds that the proportion of infective cases of leprosy in the lighter colored races (Mongolian and Caucasian) is higher, 25-70%, than in the darker races (Indian and African), with 15-25%. Regarding the number of cases in South Korea, in 1953 there were 17,188 in leprosaria and special villages and the official estimate of the overall total was 45,000. The author, however, believes that there are actually about 150,000, which with a population of 29 million would mean approximately 5 per 1,000. If 25% are open cases, there would then be about 37,500 spreaders of infection. The author regards leprosy here as a house disease, rather than a village disease as in India. This is because the family unit is compact, and leprosy spreads within the family and not readily to other relations (e.g., sons or daughters), who tend to drift away from the parental home. Theoretically, the disease should be easier to control on this account.

2. The second part of the paper deals chiefly with leprosy control. As a first step it is recommended that a special public health officer be appointed to investigate the epidemiology of leprosy in the country. He would study the nature of the disease as it occurs, the infection rate in leprosy colonies, etc., and particularly the open-case rate. He would also work through local authorities and collaborate with missionary workers. It is also suggested that with the aid of missions and other voluntary agencies a pilot scheme should be set up to assist the government in forming a comprehensive program of leprosy control, and to indicate how leprosy work can be integrated with the general medical program of the country. Foreign aid should be given only in order to help set up a proper national specialist leprosy service.—[From abstract in *Trop. Dis. Bull.* **53** (1956) 600.]

CONVIT, J. and LUIS GONZALEZ, C. Aspectos epidemiológicos de la lepra en Venezuela. [Epidemiological aspects of leprosy in Venezuela.] *Rev. San. y Asist. Social (Caracas)* **19** (1954) 373-386.

This article gives the history of the Leprosy Division of the Ministry of Health and Social Welfare, and emphasizes the magnitude of the work carried out by the

leprosy control services. For example, in 76 municipalities of the states of Tachira, Trujillo, Mérida, Miranda, and Aragua, 293,954 persons were examined, 224,306 of them in rural areas. Some of the epidemiological characteristics of leprosy in Venezuela are presented. By the end of 1950 there were 5,550 known cases, of which 1,573 were isolated in the national leprosaria and 4,017 were under treatment and control by local dispensaries. The case-type percentages were: lepromatous, 58.4; indeterminate, 21.4; and tuberculoid, 20.2. In the Andean states (Mérida, Tachira and Trujillo) the leprosy types among nonisolated cases were found to be in approximately equal proportions (around 1/3 of each), while in the state of Miranda the lepromatous cases were hardly 10%. The authors believe that these epidemiological characteristics are due to racial factors.—[From summary, in *Trop. Dis Bull* 53 (1956) 892.]

KLUTH, F. C. Leprosy in Texas—Risk of contracting the disease in the household. *Texas J. Med.* 52 (1956) 785-789.

Transmission of leprosy is of interest in Texas because cases occur persistently, although in small numbers. It is possible that the factors responsible for this low frequency may be used to control the disease. The author makes a thorough study of household contacts and gives two case histories of the chain of events that led to the discovery of these cases. In his summary he points out that an epidemiological study has been carried out in Texas since 1949, through the cooperative efforts of the Leonard Wood Memorial, the State Department of Health, and the U. S. Public Health Service. A total of 203 cases had been investigated to December 31, 1954, 102 of the investigations being current, the others being of cases that had been reported at intervals since 1930. At least 40 cases had occurred among 1,522 contacts exposed to the lepromatous type, or 2.6%; whereas among 495 persons exposed to nonlepromatous leprosy, only 1 case is known to have occurred (0.2%). Among 492 contacts who were examined after lepromatous exposure, 14 cases were detected (2.8%). A by-product of the search for cases in household contacts was the finding of 5 previously unsuspected cases by local health-unit personnel in the course of other work. The discovery of cases among persons who formerly were members of a household in which leprosy had occurred indicates that case-finding efforts should be directed toward all persons who have been members of any household in which a patient has lived. A larger proportion of cases was found in examinations of contacts 20-69 years of age (4%) than of contacts less than 20 years of age (1.6%). The risk of contracting leprosy in the household of a lepromatous patient in Texas is apparently only about one-half that in the Philippines.

—SR. HILARY ROSS

WARDEKAR, R. V. Policy of Work of the Foundation. Wardha, Madhya Pradesh, India: Gandhi Memorial Leprosy Foundation, June 1955, 10 pp.

The foundation is a section of the Gandhi Memorial Trust, and has Rs. 9,500,000 earmarked for it. It has concentrated its activities largely on the control aspect of the leprosy problem, by means of chemotherapy. With this idea 10 control units have been established, one in each of 10 different states. Each unit deals with 30 to 40 villages with a population of about 20,000, and has the following personnel: a doctor, a "leprosy organizer" or social workers, an assistant and a peon. The objective is to trace every person with leprosy in the area, and put him or her under treatment. There have also been established 3 control clinics in three different states. These clinics differ from the units in that each confines its activity to a smaller area (10-15 villages) and has no whole-time doctor. Other activities of the Foundation include (1) assistance for some research work, (2) training of medical and nonmedical personnel, (3) educational campaign, (4) financial assistance to medical graduates and leprosy workers, and (5) the collection and statistical analysis of data from the control units and clinics.

—N. MUKERJEE

✓ WARDEKAR, R. V. Leprosy Control Scheme of the Foundation. Wardha, Madhya Pradesh, India: Gandhi Memorial Leprosy Foundation, June 1955, 14 pp.

The method of control work followed is that an area is selected in which every individual is examined, and all the leprosy patients are kept on oral DDS for a sufficiently long period. Isolation of infectious cases is done whenever and wherever possible. Detailed data are kept for assessment of results. Details about the working of each control unit are given—i.e., staff, area of operation and its subdivisions, building, function of each member of the staff as also of voluntary social workers, segregation, treatment at the clinic or in the patients' own home, method of record keeping, etc.

—N. MUKERJEE

FAVERO, W., DEL FONTE, J. and BLUTH, A. Integração de unidades sanitárias não especializadas no controle da lepra. (Primeiros resultados da campanha piloto no estado do Rio de Janeiro. [Integration of nonspecialized health units in the control of leprosy. (Early results of the pilot-campaign in the state of Rio de Janeiro.)] Bol. Serv. Nac. Lepra 15 (1956) 217-242.

The authors, all officers of the National Leprosy Service, have come to the conclusion that the leprosaria, special dispensaries, and preventoria are not accomplishing what they are supposed to do, and consequently they propose that the system of control based on that triad of institutions be abandoned. They would integrate the "preventive treatment" of leprosy within the sphere of the regular health and welfare organizations, with the cooperation of existing local medical institutions, under the direction of leprologists. A trial operation of that sort had been in operation in the state of Rio de Janeiro for 13 months, with 34 sanitary units exercising leprosy control in their areas of operation, under the direction of five leprologists, with no compulsory isolation. They regarded the results as excellent with respect to (a) enlightenment regarding the epidemiological aspect, (b) the discovery of early cases, (c) the effective control of patients (95.7%) and contacts (81.3%), (d) better comprehension of the leprosy problem by the medical profession, and (e) the financial aspect of the enterprise.

—H. W. W.

LAMPE, P. H. An anti-leprosy campaign in Burma. J. American Med. Women's Assoc. 10 (1955) 234-236.

Popular opinion gradually is accepting leprosy victims as less dangerous to society than sufferers from many other diseases. The author was assigned by WHO to plan methods and assist in the integration of leprosy into the Burma national health program. To strengthen the idea that leprosy is just an ordinary disease for which people naturally seek treatment, a clinic named the "Special Skin Clinic" was set up in Rangoon. Although ambulant treatment is preferable, a sanatorium for 300 patients was built about 20 miles from Rangoon and opened in 1953. Thirteen shelters for destitute cases (including leprous beggars) have been established. After sulfone treatment was initiated the number of patients under control totaled 14,000, compared with 2,500 at the start of the campaign. A team of 12 leprosy inspectors were trained as village and rural workers. Of utmost importance is the interest in the rehabilitation of leprosy patients on the part of the Ministry of Relief, Resettlement, and Social Welfare.

—SR. HILARY ROSS

✓ MONTESTRUC, E. Le sanatorium hansénien de l'Hôpital Albert-Clarac en 1955. [The leprosy department of the Albert-Clarac hospital in 1955.] Arch. Inst. Pasteur Martinique 9 (1956) 32-47.

(1) The author gives some 1955 data on the detection of leprosy cases in Martinique and their hospitalization. He regrets that the percentage of lepromatous cases was low, although higher than in the preceding year, and remarks how unusual it is to find so many indeterminate and tuberculoid patients hospitalized. (2) Regarding the numbers of patients admitted and discharged, there was cause for concern about



the steady increase in the number requesting discharge although they were not yet ready to be rehabilitated to lead normal lives outside. (3) Among the 163 hospitalized patients, considerable proportions have parasites: trichocephalus, 38%; ankylostoma, 35%; ascaris, 10% and bilharzia, 10%. (4) The parent sulfone, DDS, is the basic medication, usually given orally, 200 mgm. daily for adults. Thiosemicarbazone treatment, 300 mgm. daily for adults, was introduced during the year, and is regarded as beneficial because in 7 negative patients so treated reactions of the erythematous nodular type were seen. (5) Isoniazid was employed in 2 reactional tuberculoid cases with satisfactory results, although in nonreactional tuberculoid cases it showed no noticeable therapeutic activity when combined with sulfones. PAS had given no significant results. Pasiniazid (a combination of PAS and isoniazid) gave some results in tuberculoid cases, although the two components separately were ineffective. Spiramycin (5 patients) and Largactil (4 patients) seemed to have no value. The marianum antigen had been abandoned in therapy because of the local and general reactions it produced. In lepra reactions neither Largactil nor sodium salicylate can replace hormone treatment with cortisone and ACTH. The intravenous injection of 20% sodium dihydrocholate was ineffective in leprosy ulcers and perforating plantar ulcers. [These therapeutic findings are discussed again in another article: Essais nouveaux de thérapeutique antilépreuse. *Bull. Soc. Path. exot.* 49 (1956) 10-14.] —H. FLOCH

MONTESTRUC, E. L'Institut Pasteur de la Martinique en 1955. (Deuxième mémoire.) Dispensaire antilépreux. [The Pasteur Institute of Martinique in 1955. (Second report.) Antileprosy dispensary.] *Arch. Institut Pasteur Martinique* 9 (1956) 92.

The number of patients attending the Marchoux Dispensary in 1955 showed a continuation of the constant increase in recent years, in keeping with the number of new cases discovered annually: there were 324, against 243 in 1951. Of the 261 old cases attending, 214 were adults and 47 were children; of the 63 new cases, 49 were adults and 14 children. The type distribution of the whole lot was: lepromatous, 82; tuberculoid, 101; indeterminate, 141. —H. W. W.

KADANER, M. and MAROUNEK. La mortalité des enfants de femmes lépreuses dans les internats, à léproserie et en milieu coutumier. [Mortality among the children of leprosy women in the orphan home, in the leprosarium, and in the customary environment.] *Ann. Soc. belge Med. trop.* 36 (1956) 247-249.

The Red Cross of the Belgian Congo has created at the Pawa leprosarium an orphanage for children who are separated at birth from their bacillus-positive mothers. The mortality among these bottle-fed infants is actually 36%, and is particularly high during the first year; after one year of age it is not far from zero. The same mortality exists in an orphanage for children of nonleprosy mothers. When the baby stays with his mother at the leprosarium the mortality is 24%, but at least 12% of the surviving children become leprosy in infancy. Mortality among the children of nonleprosy parents in their customary environment is 15%. —A. DUBOIS

TAKEDA, K. The statistics of mortality and the investigation of present leprosarium, Oshima Seishoen. *La Lepro* 25 (1956) 102-107 (in Japanese; English abstract p. 102).

The data on mortality of 572 patients from 1941 to 1954 have been studied divided into three periods: during the war (1942-1945), after the war (1946-1950), and during the improvement of social conditions (1951-1954); also the present conditions of 658 patients (December 1954). The frequency of infection was high in puberty in the female and after puberty in the male. The male:female ratio was 2.1:1. The period from onset to death was 6-30 years in most patients. Death was most frequent at ages between 30 and 50 years. The average life was shortened temporarily during the war, and is prolonged at present. The present figures—51 years for males and 55 years for

females—is in accord with the average life of the Japanese in 1948, but shorter by 10 years than the general average. Decrease of mortality in the 3 periods is striking. Pulmonary tuberculosis is a prominent cause of death, but the frequency is decreasing in recent years while chronic nephritis has a tendency to increase.—[From abstract.]

LURIE, M. B. On the role of hormones in experimental tuberculosis. *Adv. Tuberc. Res.* (Basel, New York) 6 (1955) 18-48.

There is little definitive experimental knowledge on the relative resistance of infantile, adolescent, adult and senile animals to tuberculosis, although there is much circumstantial evidence which suggests that at the beginning and toward the end of the life cycle resistance may be lower than in the interval between these points. Estrogen retards the progress of tuberculosis at the portal of entry in the skin and diminishes its dissemination to the internal organs, chiefly by reducing the permeability of the connective tissue. Chorionic gonadotropin enhances the disease at the portal of entry, and intensifies the spread through the body by increasing the permeability of the connective tissue. Estrogen increases the turgidity of the connective tissue elements by increasing the hyaluronic acid content of the ground substance and its hydration. Gonadotropin reduces it by depolymerizing the mucopolysaccharides. Neither hormone affects directly the growth and destruction of tubercle bacilli in the tissues. Nor do they influence antibody formation. Estrogen, in large doses, suppresses the inflammatory irritability of the skin to toxic agents in general, and to tuberculin in sensitized animals. Estrogen tends to reduce vascular permeability; gonadotropin appears to increase it. Estrogen markedly spares the tissues from amyloid degeneration. The application of these observations to the pathogenesis of puberty tuberculosis in man and to the effect of pregnancy on the tuberculous process is discussed. The mechanism involved in the reduction of resistance in the diabetic state is still uncertain. The role of the thyroid in resistance remains to be investigated. Cortisone in pharmacologic doses affects in a profound manner many of the forces which play a role in resistance not only to tuberculosis but also to many other infectious diseases in many species. This would indicate that, in general, the pattern of resistance depends on certain underlying principles which are common to many species in their response to a large variety of infectious agents and noxae. First in importance is its impairment of the digestive capacity of the macrophages for intracellular tubercle bacilli. There is evidence that the detoxifying capacity of the reticuloendothelial system for bacteria and bacterial products is hampered. By its lympholytic effect and by its inhibition of lymphopoiesis, cortisone diminishes antibody production. There is some evidence that the resistance of adrenalectomized animals against bacteria can be markedly raised by appropriate administration of cortisone. These observations form the basis of an hypothesis of the role of hormones in genetic resistance to tuberculosis. The antiphlogistic effect of pharmacologic doses of cortisone exercises a considerable influence on the progress of the disease. This is due to the synergistic effect of (a) the changes produced in the ground substance by the hormone, (b) the effect of these changes on the activity of hyaluronidase released at the site of infection, (c) the changes produced by the hormone on the metabolism of injured tissue, and (d) the effect of the hormone on the vascular tone. These forces result in the protection of the capillary walls against agents which tend to increase their permeability and thus help to localize the injurious agents at the portal of entry or at the site of formation. The role of growth hormone in resistance to infection has not been established. The evidence at hand suggests that it is not a single hormone or group of hormones which, in themselves, account for resistance or susceptibility to infection, but rather it is the interaction of many hormones, as well as of many other forces which affect the response of the organism as a whole to infections and other stressful states.—[Author's summary.]

X RUTGERS, A. W. F. *Leprosy en Tuberculose*. [Leprosy and tuberculosis.] Doctorate thesis, University of Amsterdam. Zaandijk: Uitgeverij der Firma J. Heijnis

Tsz., 1956, 217 pp. (With conclusions also in English and Spanish.)

This thesis is a report of work done over a period of 4 months in the Westfort Institution at Pretoria, South Africa, in association with R. Kooij. The conclusions, which of necessity are much condensed here, depend in part on material in the text for full understanding (and the author has been consulted to clarify certain points). The results of three kinds of tests made on several groups of individuals are as follows:

Cases	Tuberculin		BCG test		Lepromin <sup>a</sup>	
	No.	Pos.	No.	Pos.	No.	Pos.
Lepromatous	62	82%	62	85%	62	0
Tuberculoid	54	76%	54	72%	54	50%
Leprosy contacts	88	89%	89	98%	88	56%
Tuberculous	102	97%	101	100%	103	44%
Healthy controls	146	70%	82	89%	137	41%

<sup>a</sup> So-called; done with the Dharmendra antigen.

It is pointed out that the results of the tuberculin test (5 TU of PPD, intradermal) were approximately the same in the leprosy patients and healthy persons; that lepromatous patients often showed strong hypersensitivity in both the tuberculin and the BCG test (45% and 24%, resp.), and that 12% of the leprosy patients showed calcified foci by x-rays but did not respond to either of those tests. The leprosy-bacillus tests (called lepromin tests) were made with 0.01 mgm. of Dharmendra's "defatted" bacilli [the Dharmendra antigen, which would explain the extraordinarily low percentages obtained], the readings made on the 28th day, more than 4mm. = positive. Of the results it is said that there were statistical differences with respect to the intensity among the individuals with "tuberculosis contact" (i.e., positive to either of the tuberculosis tests) as compared with negatives, with leprosy contacts, with active tuberculosis cases, and with tuberculoid leprosy cases. ["Acceleration" of the reaction is said to have had similar correlations. What is meant by acceleration is said to be elucidated in the text, but is not explained in the conclusions.] The BCG test (0.005 mgm. killed bacilli; reactions greater than 6mm. on the 7th day = positive) gave approximately the same results in the leprosy patients and the healthy controls. These reactions were "accelerated" by leprosy contact, active tuberculosis and lepromatous leprosy. General reactions, including ENL, neuralgia and joint pains, occurred in 40% of the lepromatous patients in association with the BCG tests. Although there was a strong correlation between the results of the tuberculin and BCG tests, yet 8% of the subjects were negative to tuberculin but positive to BCG, while the reverse result was seen in 1.6%, including 5 of the 54 tuberculoid cases. In healthy controls there was no correlation between the tuberculin or BCG reactions on the one hand and the "lepromin" reactions on the other hand. It is held that the positive late reaction to lepromin is a nonspecific tissue reaction, without any connection with leprosy or tuberculosis, although it can be "intensified and accelerated" by leprosy contact, tuberculosis contact, active tuberculosis and tuberculoid leprosy. Concerning the immunological relationships between the two diseases and the theory that tuberculosis immunizes against leprosy, there is only a slight cross-hypersensitivity; and it is held improbable that protection against leprosy by BCG will be important. Also, the relationship between lepromin positivity and immunity against leprosy is questioned. [It is unfortunate that in this investigation, which led to such radically unusual conclusions, the author had not used—at least for comparison—the classical Hayashi-Mitsuda lepromin. The antigen employed is usually used by its originator for the early reaction, read 24 hours or so after injection; in this study it gave only 50% positives in tuberculoid cases—as also in Dharmendra's hands (see THE JOURNAL 22 (1945) 311-321.)] —H. W. W.

TIANT, F. R. Diagnóstico precoz de la lepra. [Early diagnosis of leprosy.] Bol. Soc. cubana Derm. y Sif. 12 (1955) 134-143.

The author holds that while bacteriological and histological examinations are useful

in some cases, the main reliance in the diagnosis of early leprosy is the clinical examination. In doubtful macules the histamine and pilocarpine tests should be made. Under early neural changes those of sensory, motor, and trophic nature are described; there are also early changes in the bones and joints of the extremities, and in the sweat glands. Several of the diseases likely to be mistaken for leprosy are discussed under differential diagnosis. The rare condition known as lazarine leprosy, in which bacilli can be found in large numbers in the necrotic skin but nowhere else, is described; the ulcers left have a tendency to heal and leave deep anesthetic scars.—[From abstract in *Trop. Dis. Bull.* 53 (1956) 759.]

MURATA, M. über Erythema nodosum leprosum. [On erythema nodosum leprosum.] *Japanische Ztschr. f. Dermat. u. Urol.* 12 (1912) 1013-1051.

[The following is a translation, extensively condensed and rephrased, of what was evidently the summary of the first article on ENL. The translation was provided by Dr. Y. Hayashi, of Tokyo, with the explanation that it had been made as a result of an inquiry as to who was the first person to employ the term "erythema nodosum leprosum."]

The author describes an eruptive condition which he calls erythema nodosum leprosum, which is seen only in lepromatous cases, occurring in one-third or one-fourth of them—twice as frequently in the infiltrative form as in the nodular form. The eruption occurs mostly in adolescence. It does not occur as one of the initial symptoms of the disease, but about 6 years after onset. The condition is seen chiefly in spring and autumn, especially at the change of season. The clinical features include symptoms similar to those of common eruptive febrile diseases. The eruption appears with fever accompanied by chills, but sometimes in an afebrile form. The eruption lesions are elevated and attain the size of a lentil or walnut; they are scarlet-red, solid and elastic, and hypersensitive; they may be solitary or confluent. They appear mostly on the face at first, then both in regions where lepromas occur and on the flexor surfaces of limbs where lepromas usually do not occur. The distribution corresponds to that of the veins. When the eruption tends to disappear the color changes first to dark red, then to bluish-green and bluish-brown. The eruption may disappear without trace, or there may be dryness and wrinkling of the skin with bluish pigmentation, or desquamation and perhaps softening may occur. In case of softening, pyogenic germs may or may not be detected; if so, the pus may be liquid and yellowish, but if not it may be thick, glutinous, and orange-colored. Most prominent among the general symptoms is neuralgia, resulting from nerve enlargement. Arthralgia is next, as a result of synovitis. There are no marked findings with respect to the internal organs, or in the urine. Blood examination reveals leucocytosis. The course of the condition is usually acute, but occasionally it may be subacute or chronic; and it may be classed as of three grades accordingly. The prognosis is generally benign. The essential pathological condition is inflammation formed in the leproma within fatty tissue, resulting in a colonial formation of infiltrating polymorphonuclear leucocytes. A specific treatment has not been found, although calcium preparations, quinine hydrochloride, and laxatives may be helpful. The designation "erythema nodosum leprosum" is established by the author because the condition clinically resembles erythema nodosum, and it is a characteristic symptom appearing in the course of nodular (lepromatous) leprosy. Since the name erythema nodosum is approved as an independent term for a clinical symptom, and since there is the necessity of differentiating the erythema nodosum due to potassium iodide observed by the late Dr. Shitachi, the designation erythema nodosum leprosum may reasonably be adopted for this singular and independent symptom, which is characteristic histologically as well.

—H. W. W.

PESSOA MENDEZ, J. Contribuição ao Estudo das Lesões Nodulares da Lepra Tuberculoides Infantil. [Contribution to the study of nodular lesions of infantile tuberculoid leprosy.] Tese de Concurso a Livre-Docência da Cadeira de Clínica Der-



mato-Sifilográfica. Faculdade de Medicina da Universidade de Porto Alegre (Brazil), 1956, 77, pp.

This thesis, after reviewing the literature with emphasis on the early observations of Lara and associates in the Philippines and of de Souza Campos in Brazil, deals with 12 personally observed cases whose ages ranged from 16 months to 9 years. There are 8 clinical photographs (and also 4 microphotographs) which illustrate the prominent little nodules, and the depressed scars which result from their resorption, which seem peculiar to this condition in Brazilian children. The review covers the ground extensively, under various headings from source of infection to immunity, including the morphological and evolutive aspects of the lesions and their bacteriology and histopathology. With reference to the author's own cases, this infantile lesion was the only manifestation found in children under two years of age. Regarding the morphology and evolution of the lesions, the author agrees with de Souza Campos' classification as nodular and flat, with the reservation that the "flat" kind should be of that character from the outset, and that the designation should not be applied to primarily nodular lesions which have become flat secondarily during involution. It is noted that whereas ordinarily there is only a single lesion, or at most a very few, two of the cases—sisters—had large numbers: 17 and 23. Special attention was given the scars of this variety of leprosy, and 6 specimens varying in age from 3 to 11 years after the clinical cure were examined histologically. One was found to have a few acid-fast bacilli in a granuloma rich in giant cells. The following are the essential features of the author's summary. 1. The nodular lesions of infantile tuberculoid leprosy are the earliest manifestations of the disease in children. 2. The appearance of these lesions is in relation with a natural state of resistance, probably inherited and specific for leprosy. 3. Infantile leprosy lesions are classified as nodular and flat, the former exhibiting that morphology at the onset but becoming flat during their involution, the latter being flat throughout. 4. These lesions are usually few and often solitary; rarely are they found in large numbers. 5. They are located in parts that are most in contact with the diseased parts of the infecting patient. 6. The average duration of the infantile leprosy lesion is 2 to 3 years. 7. The morphology of the scars is very characteristic, and they can be considered pathognomonic when accompanied by an atrophic scar from a previous lepromin reaction. 8. The involution and spontaneous cure, even when the child remains in close contact with the infecting source; the non-appearance of acute eruptions or of exacerbation of the existing lesions; and the results of prolonged continuous observation, all testify to the undoubted extreme benignity of the infantile leprosy lesions. —H. W. W.

FLOCH, H. Sur les particularités du problème de la lèpre chez l'enfant. [Particulars of the problem of childhood leprosy.] Arch. Inst. Pasteur Guyane Française et Inini 17 (1956), Publ. No. 403 (August).

This report is based on observations in the Marchoux preventorium-school for noninfectious leprosy children. Since the beginning of the sulfone era no child from this school has become lepromatous, in contrast with what occurred in the days of chaulmoogra. Sulfone therapy of the indeterminate and tuberculoid cases is therefore prophylactic with respect to change to the infectious form. It is important that the children of the school should be given proper care and that, if need be, they should be vaccinated with BCG to make them Mitsuda positive. Progress in the screening of school children throughout French Guiana is described. It is important that a child should not be socially "branded" because of too prolonged sojourn in a preventorium-school. Because infection often occurs in the early years of life, it is necessary above all to eliminate the lepromatous sources in Cayenne, for which there is the Dispensaire-Pavillon Urbain d'Hospitalisation. Systematic BCG vaccination at an early age must be done. It may perhaps provide the antileprosy campaign a decisive prophylactic approach, and we have not the right to neglect the possibility.

—AUTHOR'S ABSTRACT

GUNS, P. and LECHAT, M. La lèpre. Aperçus généraux et points particuliers d'otorhinolaryngologie. [Leprosy; general appearances and particular points about the ear, nose and throat.] Ann. Soc. belge Med. trop. **35** (1955) 15-28; also Ann. Oto-Laryngol. **72** (1955) 272-283; also Acta Oto-Rhino-Laryngol. belgica **9** (1955) 543-554.

After some generalizations concerning the etiology and clinical evolution of leprosy, the authors describe the clinical appearance found in the nose, larynx and pharynx. They describe a number of cases personally examined and discuss their method of diagnosis and treatment of the disease. —A. DUBOIS

✓ RANADE, S. N. and GOKHALE, B. B. Lung lesions in leprosy. Medicine, India **1** (1954) 36-42.

The authors report an investigation of 7 cases of leprosy suffering from cough for 1-2 months and showing acid-fast bacilli in their sputum. The types were 3 lepromatous, 2 tuberculoid, and 2 indeterminate; the last 2 and 1 of the tuberculoid cases were bacteriologically negative. Chest skiagrams revealed some indication of lung involvement in all: infiltration, fibrosis, or pleural thickening. Guinea-pig inoculations and cultures of the sputum were negative in all cases. Bronchoscopy of 4 (2 lepromatous and 2 indeterminate) revealed congestion of the mucous membrane in all, and purulent discharge from the left bronchus in 2 (1 lepromatous and 1 indeterminate). Fluid aspirated from the bronchus of 1 lepromatous case revealed acid-fast bacilli. The authors conclude that these indications of lung involvement were due to infection with the Hansen bacillus. —N. MUKERJEE

CHARDOME, J. and LECHAT, M. Lésions radiologiques des mains chez le lépreux congolais. [Radiologic appearances of lesions of the hands in leprosy patients in the Congo.] Ann. Soc. belge Med. trop. **35** (1955) 267-278.

From the x-ray study of 126 patients in the Belgian Congo the authors observe: (a) among those with lepromatous leprosy, cavities (*geodes*) in the carpus probably due to lepromatous foci, widening of the nutrient canals due to leprotic endarteritis, and absorption at the ends of the fingers; and (b) among paucibacillary cases, centripetal absorption of the fingers. (c) Many patients have a combination of cavities and absorption, due to transformation of the type of leprosy. —A. DUBOIS

LECHAT, M. and CHARDOME, J. Altérations radiologiques des os de la face chez le lépreux congolais. [Radiologic changes in the bones of the face in leprosy patients of the Congo.] Ann. Soc. belge Med. trop. **35** (1955) 603-611.

The reduction or disappearance of the anterior nasal spine was noted in radiographs of 57 leprosy patients in the Congo (78% of the lepromatous cases). In 41 of them, this lesion was accompanied by a pronounced resorption of the bones of the nose. It seems that these changes are a characteristic of lepromatous leprosy. —A. DUBOIS

✓ TAKEDA, K. On capillary resistance of leprosy patients. La Lepro **25** (1956) No. 3 119-128 (in Japanese; English abstract p. 119).

Capillary resistance was measured to investigate one of the skin functions of leprosy patients. It was generally decreased, and was very labile; it was apt to deviate from the physical functional range by single stimulation. It was higher in the peripheries, lower on the flexor than the extensor surfaces, and in the upper than the lower extremities. In the subclavicular region it was stronger than normal. It was easily influenced by the time of day. In ENL it decreased, being lowest at the acme of the reaction and recovering as the condition subsided. It was increased in neuralgia. Administration of hormones and autonomic nerve toxins produced in leprosy patients some different reactions from those of normal people.—[From abstract.]

SPADA, C. and PIRASTU, A. A proposito di reazione leprosa. [Regarding lepra reactions.] *Rassegna med Sarda* **57** (1955) 167-258.

This publication is a monograph, including an extensive bibliographic survey. Since 1912 the authors have studied 186 cases of leprosy in the clinic at Cagliari. In 39 of them (21%) lepra reactions occurred, more frequently among the lepromatous forms than others. Lepra reaction is considered to be caused by the combined effects of the Hansen bacillus and many conditions (physiological, pathological, pharmacological). Prognosis should consider the fact that the lepra reaction is a favorable symptom, although the reaction by itself can be dangerous; the reaction is followed by reduction of the numbers of bacilli, while nodules decrease in size and there is clinical improvement. The prognosis is better if the reaction is early during the disease. Treatment: light specific drugs, D2 vitamin, cortisone or ACTH, transfusions, symptomatic.

—M. TERNI

QUAGLIATO, R. O problema das reativações nos dispensários de lepra. [The problem of reactivations in leprosy dispensaries.] *Rev. brasileira Leprol.* **23** (1955) 83-113.

The author had studied the bacteriologic relapses in patients enrolled at Bebedouro Dispensary in 1943-1947, under chaulmoogra treatment, and at the Campinas Dispensary in 1949-1953, under sulfone treatment, comparing the two periods. The relapsed patients at the Campinas who remained until July 1954 are then discussed. [This is the first paragraph of a lengthy and highly detailed summary, from which it would be difficult to draw any conclusions—which the author himself does not attempt to do.]

—H. W. W.

BALDO, J. I. Investigación de la tuberculosis en medio leproso. [Investigation of tuberculosis in a leprosy community.] *Rev. San. y Asist. Social (Caracas)* **19** (1954) 361-371.

The patients of the Cabo Blanco leprosarium, Venezuela, who had been examined for tuberculosis 12 years previously, have been reexamined. Tuberculin allergy was found in a high proportion of 709 patients, with an early incidence in the younger groups comparable with that found in people with poor economic and social standards outside the leprosarium. Chest photography in 827 patients, first with microfilms and then with large films when indicated, followed by sputum examination of suspect cases, gave 10.7% pathological findings, compared with 21.2% in the previous examination. Cases with early active tuberculosis were only 0.6% (3.2% formerly), and more advanced disease was found in only 2.0% (6.7% formerly). This marked decline in the prevalence of tuberculosis may be due partly to better hospital conditions, but the chief reason is probably the effects of sulfone therapy, which improves the general health of the patients. The atypical trabecular and reticular shadows due to leprosy of the respiratory passages were also much less.—[From abstract in *Trop. Dis. Bull.* **53** (1956) 894.]

WELLS, A. Q., AGIUS, E. and SMITH, N. *Mycobacterium fortuitum*. *American Rev. Tuberc. & Pulm. Dis.* **72** (1955) 53-63.

The acid-fast bacillus described was isolated from cervical lymph-node pus from a woman in Malta, following infection of a carious tooth. The Mantoux test was negative in OT dilutions of 1/10,000 and 1/1,000 but positive in 1/100. Repeated surgery plus antituberculosis medication was followed by cure. Colonies of the acid-fast bacillus appeared in three days on agar. It was not pathogenic to guinea-pigs, cats or hamsters, even in large doses injected variously, but it was pathogenic in the rabbit. The bacillus appears to fall in a group described by Gordon, although it has certain characteristics not hitherto mentioned. The type species, described by Cruz in 1938, was isolated from abscesses developing in a woman's arm following subcutaneous injections of a vitamin preparation. Penso *et al.* described a new species which

they called *M. minetti*. The strain had been isolated by Minett from cattle which had reacted to avian tuberculin and occasionally to bovine tuberculin. Their description, except in a few details, agrees with the strain described in the present paper. It seems that it should be grouped with *M. fortuitum*.—[From abstract in *Leprosy Briefs* 7 (1956) 8.]

SWERTS, L. Considerations sur les traitements sulfonés de la lèpre. [Sulfone treatment of leprosy.] Ann. Soc. belge Med. trop. 35 (1955) 785-800.

This article is a review of the evolution during 3 years under the influence of sulfone therapy of nearly 2,500 tuberculoid and 800 lepromatous patients. The tuberculoid macules disappeared more or less completely in 90%, but it is much more difficult to influence the nerve lesions, which in many cases continue to progress. Among the lepromatous cases there was important improvement of the skin lesions in more than 90%, but here again the nerve lesions are little improved. Bacteriological improvement was very slow; only 11% having become negative after more than 3 years.

—A. DUBOIS

HOPWOOD, G. M. Routine treatment of leprosy with DDS. Leprosy Rev. 27 (1956) 161-163.

This is a very short report of the results of three-years' DDS treatment of 197 patients at the Purulia hospital, divided on the basis of three factors into 3 groups with 11 subgroups (the latter varying in numbers from 39 to 7 cases, average 18), the subgrouping according to the bacillus index (BI) at the outset. Practically the same results as regards percentage decreases of the BI's were obtained among the 55 outpatients who got an average weekly dose of about 153 mgm. by injection (suspension in hydnocarpus esters) as among the 79 inpatients who got about 330 mgm. per week in the same manner. The 63 inpatients given the DDS by mouth seem to have showed somewhat poorer results despite the relatively high average weekly dose of about 600 mgm. Although the per cent reduction of the BI in the subgroup with 4.0-3.1 at the outset was the same as in the other subgroups of the same category (58.3 against 57.6 and 55.6, respectively), yet the oral-treatment subgroups with originally 3.0-2.1 and 2.0-1.1 BI showed no increase of the reduction percentage, whereas there was increase to around 80 in the other two 2.0-1.1 subgroups. The author draws no conclusions.

—H. W. W.

✓ DHARMENDRA and CHATTERJEE, K. R. Hydrosulfone in the treatment of leprosy. Lep. India 27 (1955) 230-233.

Hydrosulfone is a condensation product of hydnocarpic acid with DDS, a faintly yellowish white powder with a molecular weight of 716, melting point of 122°C, insoluble in most of the common solvents. It is bacteriostatic against certain acid-fast bacilli in 1/20,000 dilution, and nontoxic to laboratory animals in 50 mgm/kgm dose. With a repeated daily oral dose of 150 to 200 mgm. the blood concentration was 0.5-0.8 mgm/100 cc. The drug is excreted slowly, mainly through the urine. Twenty-six cases of leprosy were treated for 30-100 weeks, 18 lepromatous and 8 nonlepromatous. Most of them (22) had previously been treated with DDS, INH or thiosemicarbazone without benefit. Marked improvement was found in 16 cases (8 of the lepromatous, and all 8 of the nonlepromatous), moderate improvement in 6, and slight in 4.

—N. MUKERJEE

FLOCH, H. and DEHEZ, F. Mode d'action des sulfones dans la lèpre. (X) Comment agissent la sulfone monoisopropylée et la sulfone diisopropylée administrées par la voie buccale. [The action of monoisopropyl and diisopropyl sulfone given by mouth.] Arch. Inst. Pasteur Guyane Française et Inini 17 (1956), Publ. No. 400 (July).

In laboratory animals the sulfones studied (diisopropyl sulfone, or 3460 CT,



and monoisopropyl sulfone, or 3461 CT) are active although slightly less so than DDS, and they are much less toxic than DDS. A dose of 200 mgm. of the diisopropyl sulfone given orally liberated (10 patients tested) about 50 mgm. of DDS, which is considered the lower limit of active daily dosage. As for the monoisopropyl sulfone, a dose of 200 mgm. should act therapeutically about the same as 170 mgm. of DDS (as determined by the sulfone levels of the blood and urine in 5 patients). This is so even though a part of the sulfone complex is not split to DDS, since it is certainly active directly as a molecule. The lower toxicity of the monosubstituted sulfone (more particularly), if it is confirmed clinically, would obviously increase its practical value.

—AUTHOR'S ABSTRACT.