

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.

[CEYLON] Leprosy Campaign, Ceylon, Annual Report for 1949.

This is a report on the antileprosy work in the two leprosy hospitals at Hendala near Colombo and Mantivu on the east coast; in the Central Diagnostic Clinic at Maradana in Colombo and the 15 outdoor clinics in the endemic areas; and in the field organization controlling and observing the noninfective cases and contacts. It is stated that there is no authentic record of the existence of the disease in Ceylon before the Dutch period. The first leprosy asylum was established at Hendala, near Colombo, in 1708; in 1901 a Lepers' Ordinance was passed, providing for compulsory segregation of all cases of leprosy; and effective methods of control were adopted in 1932. Besides the two hospitals, an agricultural colony consisting of 18 cottages is in the course of construction at Urugaha. At the hospitals facilities for different occupations—e.g. gardening, weaving and animal rearing—and for recreational and religious activities are provided. At the end of the year under report there were 1,109 patients in the hospitals. Sulphetrone is being used for treatment of the disease, orthopedic treatment and physiotherapy are employed for deformities and contractures, and surgery as needed. Leprotic nodules in the eye were successfully treated by injections of sulphetrone into the nodules; few eye lesions cleared up with intravenous injections of the drug. The total number of patients scheduled at the clinics was 1,360, of whom 396 were under treatment and 964 under observation. In the field work, 1,822 actual cases were examined and progress noted, 11,513 contacts were examined among whom 97 cases were detected, and in school surveys 14,672 children were examined and 4 cases were detected among them. In total, 240 new cases had been detected, the largest numbers as usual being found in the Western and Southern provinces; 103 had been segregated, 120 given parole, and 17 were awaiting segregation, making a total of 47 in the last category. The total number of known living cases in the island at the end of the year was 2,784, of which 1,458 belonged to the Western Province, 2,641 were above 14 years of age, 2,004 were males, 1,959 were Sinhalese, 1,847 were neural and 927 lepromatous, and 1,946 were active and 838 inactive.—[From abstract in *Lep. India* 22 (1950) 193.]

JORGE SUAREZ, J. Estado actual del problema de la lepra en Bolivia. [The present position of the leprosy problem in Bolivia.] *Gac. méd. boliviana* 7 (1949) 42.

The present extent of leprosy is now known with respect to two-thirds of Bolivian territory, where since 1942 two intensive surveys have been carried out in the affected areas. From the viewpoint of the prophylaxis of leprosy the country will be divided into 11 sanitary zones, each to be provided with an outpatient clinic. The leprosy census has revealed to date 215 cases and 709 contacts among the 11,524 persons examined in

the leprosy areas of seven departments of the Republic. The population being approximately 3,000,000 people, the prevalence is calculated at 7.3 per 100,000. With regard to race, 92% of the cases are natives, 6% mestizos, and 2% whites. Males constitute 87%, females 13%. The highest frequency according to age is in the 20-29 years group for the males and 15-19 group for the females. The general program for the control of the disease includes the immediate construction of two colonies, one to be located in the Michel region to take care of patients from the Beni and Pando departments, the other in the Negros hacienda in the Province of Florida, where the patients from the rest of the country can easily be isolated because of the existing network of roads. Also included in this program is the establishment of dispensaries according to the sanitary divisions of the country, the enactment of social-health legislation, health propaganda and education, and the establishment of a Federación de Asistencia Social oriented on a scientific basis.—[From abstract in *Rev. Sif. Leptol. y Derm.* (Havana) **6** (1950) 128.]

CAMUS GUNDIAN, D. La lepra en la Isla de Pascua. [Leprosy in Easter Island.] *Rev. Méd. Chile* **78** (1950) 135-140.

This area was visited in 1947 by a commission to study the medical problems there. The total population was 720, made up of 685 "natives," mostly Polynesians of Maori descent, 30 Chilians, and 5 "foreigners." Among these, 51 leprosy patients were seen, 28 males, 23 females. The age distribution was: 6-14 years, 12 cases (6 of each sex); 15-20 years, 18 (10 males, 8 females); 21-30 years, 13 (9 and 4); 31-40 years, 4 (two each); over 40 years, 4 (3 and 1). Of these, 18 were in leprosaria, 9 of them (6 males, 3 females) in one for long-standing cases, and 9 (1 and 8) in one for early cases; 22 were ambulatory, 8 of whom were classed as contagious; the other 11, who showed no active lesions, were in good general health and went about freely and were under "periodic control." There is a society known as "Friends of the Isle of Pascua" which does good work among the community.—[From abstract in *Trop. Dis. Bull.* **47** (1950) 998.]

SIGURDSSON, S. Tuberculosis in Iceland. Public Health Service Monograph No. 2. U. S. Government Printing Office, Washington, D. C., 1950. pp. ix + 86.

In this epidemiological study by the medical director of tuberculosis control, mention is made of leprosy in Iceland in the past. At the end of the nineteenth century there were only about 100 hospital beds in the country, and of this number 60 were reserved for leprosy patients. Sigurjon Jonsson considers it likely that tuberculosis in adults was less common than now, holding that because of bad living conditions most infected children died before reaching maturity, and also that because of frequent epidemics and famines the fittest of the population survived and the weakest fell victims to the plagues. This theory had been advanced previously about leprosy. Espholin (1829) stated that in the smallpox epidemic of 1707 all the people with leprosy succumbed, and they were numerous at that time, although Bjarnhedinsson (1910) has held that, while their number was enormously reduced by smallpox, they were not completely wiped out. On the other hand, he thinks it unlikely that many people with leprosy survived the Black Death which swept the country in 1402-1404. In all probability the same circumstances affected tuberculosis similarly. Mention is made

of Bjarnhedinsson's findings with respect to tuberculosis in 111 autopsies of people who had had leprosy. Pulmonary tuberculosis was found to be the cause of death in 20 cases, and 2 had died from tuberculous peritonitis, and lesions of tuberculosis were found in the lungs or bronchial glands of 24 others.
—H. W. W.

- STEINIGER, F. Die Lepra in Ost- und Nordseeraum. [Leprosy in the Baltic countries.] *Ztschr. f. Tropenmed. u. Paras.* **2** (1950) 175-193.

This is a general account of leprosy in the Baltic countries, Finland, Estonia, Latvia, Lithuania and Memelland. Cases now are not many and, as far as records can be relied upon, the disease was dying out 150 years ago, when it was again introduced by troops returning from Russia. Heredity appears to play a considerable part in the spread. One genealogical record is given in which cases occurred in each of four generations; in another, a woman suffering from leprosy and tuberculosis had four children: one, a daughter who was leprous, a son and two other daughters tuberculous; one of the latter had five children, 3 daughters and 2 sons, all tuberculous. Speaking generally, females seem to be more susceptible than males; at all events there are more women than men suffering from the disease. Though declining in most of the Baltic countries the disease is still endemic in Memelland.—[Abstract from *Trop. Dis. Bull.* **48** (1951) 43.]

- PALANCA Y MARTÍNEZ FORTÚN, J. A. El problema de la lepra en España. [The leprosy problem in Spain.] *Día Médico* **21** (1949) 1664-1666.

The author, a sanitarian of exceptional competence who has had many years of service in the Dirección General de Sanidad, considers the problem of leprosy as one of much concern because of the campaign being carried out by Spanish leprologists, who believe it to be one of ready solution, and also because of the imminence of the International Congress to be held in Madrid in 1953. This health problem is reviewed extensively in this paper. Regarding the number of leprous patients, the writer does not believe it to be around 8,000 as calculated by a certain foreign author, and he refers to the various censuses which have been reported. At the time of writing the number of known cases is 1,429, of which 832 are males and 597 females. The possibilities for control are reviewed, with respect to sanatoria, dispensaries and preventoria, and the projects for expansion of the various services. The article also deals with the new social aspects of the situation, which may contribute especially to the solution of the problem, together with the progress made in therapeutics, so that this scourge may be controlled as quickly as in Portugal, where according to Bisaya Barreto it should be ended in 10 years.
—F. CONTRERAS DUEÑAS

- CORDERO SOROA, A. La lucha contra la lepra en España. Censo de enfermos y censo de convivientes. Un año de lucha antileprosa. [The fight against leprosy in Spain. Census of patients and contacts. A year of antileprosy campaign.] *Rev. San. e Hig. públ.* **23** (1949) 356-376; also, *Bol. Cult. Gen. Col. méd. España* **6** (1949) 27-32.

This article gives the present status of the campaign against leprosy in Spain, presenting the actual condition with special reference to the intensification of the efforts during the last few years and also the data of an intensive census recently made with the cooperation of the majority of the Spanish leprologists, whose efforts the author presents.

—F. CONTRERAS DUEÑAS

MOLINERO MANRIQUE, J. Consideraciones acerca de la organización contra la lepra en España. [Comments on the leprosy campaign in Spain.] *Rev. San. e Hig. públ.* **23** (1949) 450-453.

The author comments on the paper of Cordero [see preceding abstract]. The opinion is expressed that the sanitary problem of leprosy is important, but the interest is limited because of the number of existing cases. These are held not to be as many as has repeatedly been indicated by various specialists, some of them foreigners, whose estimates are believed to be arbitrary. The author agrees that there may be around 5,000 cases in Spain, but this figure would be much smaller if one were to exclude those for the East (Levante), Galicia and the Canary Islands, but not those from Andalucía. In conclusion he expresses high hopes for the new drugs and for the success of health measures as universally accepted.

—F. CONTRERAS DUEÑAS

RODRIGUEZ, J. N. Epidemiological studies on leprosy in Cebu Province. *J. Philippine Med. Assoc.* **26** (1950) 37-43.

This paper is a summarization of a series of previously published studies on the epidemiological surveys made in the towns of Cordova, Talisay and Santander of Cebu province, in the Philippines. The important findings were the following: (1) the prevalence rates among family associates of lepromatous cases were significantly high; (2) household associates of bacteriologically negative "neural" or "tuberculoid" cases did not show prevalence rates significantly higher than the general population; and (3) the rate appears to be directly correlated with the age at time of exposure, it being highest among those exposed before the age of 5 years, decreasing progressively as the age at time of exposure increases. The usual finding of more lepromatous cases among males than among females was confirmed. In Santander, leprosy had not gained a real foothold although it had been introduced several times since 1911, or 27 years before the survey was made in 1938. The author suggests intensive studies to explain this failure of the disease to spread in this locality. The question of whether or not segregation has reduced the incidence of leprosy in Cebu is answered in the affirmative by comparing two groups of population—those born between 1896 and 1910 and followed up to 1920, and those born between 1911 and 1925 and observed up to 1935. The incidence rates were found to have been reduced by more than one-half in the second group as compared with the first one.

—J. O. NOLASCO

FLOCH, H. A propos de l'indémie lépreuse en Guyane française. Notes sur la lèpre dans quelques pays de l'Hémisphère Occidental. [Leprosy in French Guiana. Notes on leprosy in certain other countries of the Western Hemisphere.] *Inst. Pasteur Guyane et Terr. Inini*, Publ. No. 186, March 1949, 9 pp.

This article considers the prevalence of leprosy and the measures taken to control it in certain countries of the American continent: Brazil (especially the State of São Paulo), Venezuela, Cuba and the United States. Everywhere the campaign is difficult and inadequate, even in Brazil where it is best organized. The difficulties obviously arise, in large part, from the incomplete knowledge which we have about the transmission of the disease. If from the point of view of the patient the undifferentiated form, and especially the tuberculoid type, are relatively favorable,

from the social point of view they offer complicated problems to be solved, and everywhere they are answered either incompletely or badly. The criteria employed for the liberation of patients from leprosaria are far from being always convincing and satisfying. The campaign in French Guiana is equal to that of neighboring countries: dispensaries, intensive search for cases, the Marchoux School, and generalized treatment by sulfone derivatives. The establishment of a small modern agricultural colony for 400 persons would admirably complete the antileprosy armament.

—AUTHOR'S ABSTRACT

- McCoy, G. W. Modern public health measures against leprosy. *Pub. Hlth. Nurse* **41** (1949) 28-30.

This article, written for public health nurses, contains a brief description of the various types of leprosy and the methods of diagnosis and treatment employed at the National Leprosarium at Carville. The author believes that the purely preventive medical aspects of leprosy should be separately considered in each family. The danger of infection depends upon several circumstances: geographic location, clinical type of case, and age of the individual. In Florida, Texas and Louisiana the transmission of leprosy has been such as to make it a public health problem of importance. Clinical cases in which acid-fast bacilli can be easily demonstrated are regarded as infective. Infants and children under 10 years of age are much more likely to be infected than older persons.

—F. A. JOHANSEN.

- Rotberg, A. & Bechelli, L. M. Proposições para o proteção social dos hansenianos, suspeitos e comunicantes. [Proposals for the social protection of leprosy patients, suspect and infectious.] *Rev. brasileira Leprol.* **17** (1949) 81-89.

The authors present a number of proposals for the social welfare of leprosy patients, their relatives and contacts. (1) The diagnosis of leprosy should be withheld in benign cases (tuberculoid or indeterminate), although they should be kept under observation and treatment. (2) For treatment the patient should be permitted to choose a clinic in a neighborhood in which he does not live, where he will not be identified. (3) The period of isolation should be reduced to a minimum compatible with the prophylactic requirements, further treatment being given at dispensaries. (4) Domiciliary isolation should be facilitated. (5) Visits to hospitals should be facilitated, especially for lepromin-positive applicants. (6) Wards for "burnt-out" cases should be established in all hospitals. (7) Writers, public speakers and others who influence public opinion should refrain from the use of the words leprosy, leper, etc., and from sensational reporting of cases. (8) An extra-official board composed of dermatoleprologists should be organized, to work in their private offices but in close connection with the official leprosy service; these would be preferred by patients who wish for privacy and comfort. (9) Utmost care should be taken in the examination of cases reported to the leprosy service, to avoid social consequences due to unconfirmed suspicions on the part of the public. (10) Observation of contacts, with respect to the intervals of examinations and duration of observation, should be in accordance with their immunological responses. Mitsuda-positive cases require less attention than negative or weakly positive cases. (11) Words like institute, school, etc., should

replace preventorium. Other complementary measures are discussed.—
[From abstract in *Excerpta Med.* 4 (1950) 298.]

- CHIYUTO, S. Why change the name of leprosy? *Bull. Bur. Hlth.* 26 (1950) 111-118.

This paper is a lengthy discussion of the views of various other writers regarding the proposed change of name from "leprosy" to "Hansen's Disease" or "Hansenosis." The author emphasizes that it is important to explain clearly the real nature of the disease, which he holds is acquired only by prolonged, intimate and frequent skin-to-skin contact of a child under three years old with either a potential or frank case of leprosy. Stress should be laid on the limited communicability of the disease and the adult immunity to infection, instead of its repulsive features and horror of "contamination." Such being the case, why stigmatize a leprosy patient when he contracted the disease innocently while in infancy?—J. O. NOLASCO

- CHIYUTO, S. Leprosy; susceptibility and transmission. *J. Philippine Med. Assoc.* 26 (1950) 363-366.

The author cites the work of himself and Manalang from 1932 to 1935 which led to their belief that only infants and children below five years of age are susceptible to infection, while adults are immune. Their conclusion regarding the susceptibility of infants and young children is based entirely on the results of the lepromin test. The isolated cases of adult infections reported in the literature are considered unscientific. The cases of the two young Marines reported by Porritt and Olsen as having presumably acquired their infections by tattooing in Australia are commented upon at length. —J. O. NOLASCO

- SOUZA CAMPOS, N. Patología de la lepra. Consideraciones en torno de la inmunidad. [Pathology of leprosy; observations concerning immunity.] *Sesión Dermatológica en homenaje al Prof. L. E. Pierini, Buenos Aires, Nov. 11-13, 1949; pp. 181-189.*

The virulence and seriousness of the symptomatology of the disease is dependent upon the terrain; they are its function. Thus the manifestations in every clinical case will depend upon the variable predisposition, congenital or acquired, of the organism to the infection. Congenital if due to an inherited disposition or to special particular conditions as yet unknown. Acquired if dependent in part upon the disease itself through the process of specific resistance, and in part without relation to leprosy through non-specific resistance of special nature to infections in general, including leprosy. Congenital or acquired, specific or not, the fact is that this particular state of the organism is what makes it immune or susceptible to infection and which determines the evolution of the case. Whether it be called immunity, allergy, organic resistance, or any other preferred name, the fact is beyond dispute, and it is only by the manner of reaction of each organism that we gain an insight into these apparently paradoxical phenomena. The prophylaxis of leprosy will probably one day come out of its classical mold through the study of its pathology and immunity. A great step forward will be taken on the day when the transformation of the organism from lepromin-negative to lepromin-positive is achieved.

—G. BASOMBRÍO

[EDITORIAL] The infectiousness of "closed" cases of leprosy. *Lep. India* **22** (1950) 109-111.

It is pointed out that, although complete proof for the noninfectivity of "closed" cases of leprosy is lacking, it appears to be a sound principle of public health administration to recognize the difference between such cases and "open" ones and to act accordingly as far as the isolation of cases is concerned, especially in countries like India which are faced with a huge leprosy problem. As a matter of fact, in such countries this is the only practicable policy.

—DHARMENDRA

FRESCOLN, L. D. Hansen's disease. *American J. Pharm.* **121** (1949) 268-276.

This article gives a resumé of the various forms of leprosy as well as the various diseases for which leprosy has been mistaken. Much of it concerns the care given leprosy patients who have been admitted, over a period of years, to the Philadelphia Hospital for Contagious Diseases. Eleven detailed case histories are given. The author feels that courses in tropical medicine should be given more stress in our medical schools, to make physicians better acquainted with leprosy and other tropical diseases.

—F. A. JOHANSEN

CARRILLO CASAUX, D. & GARCÍA BONILLA, J. Comienzo de la lepra. [Onset in leprosy.] *Actas Dermo-Sif.* **40** (1949) 915-919.

A detailed study is made of the onset of the disease in 50 patients, all except four of whom were found to have come from endemic regions and to have been direct descendants of leprosy patients. The author believes that leprosy has a period of incubation followed by a second period of latency, or false latency, in which the patients notice some disturbances preceding the first objective symptoms. In some cases there are seen pigmentary macules like those described by various leprologists. These, and also some of the neurologic symptoms, are described in this article.

—F. CONTRERAS DUEÑAS

DE BROEKERT, W. Enkele opmerkingen over de diagnostiek der eerste verschijnselen van lepra. [Diagnosis on the basis of the first symptoms of leprosy.] *Nederlandsch Tijdschr. v. Geneesk.* **94** (1950) 3528.

The return of Dutch soldiers from Indonesia may increase the incidence of leprosy in the Netherlands, and the early symptoms should be recognized. Typical prodromal signs are rare. In the most favorable form (i.e., tuberculoid), the first sign is usually a flat, sharply-defined patch, or a localized area of anesthesia, or both. They usually appear on the face, extremities, napes and scapulas. Patches on the face usually show no sensory changes for a long time, those on the body first show decrease in temperature perception, while those on the extremities show disturbances in all sensations. The hair falls out, and perspiration is abolished. Similar spots occurring in fungus diseases can usually be differentiated by the slight desquamation and the absence of sensory disturbances. Nerves often show swelling in the region of the spots; the ulnar and the auricularis magnus are the nerves most frequently involved. While lepromatous leprosy may begin with tuberculoid patches, usually the lesions are erythematous and may simulate urticaria except that they do not itch and do not rapidly disappear. They are not as localized as in the tuberculoid form, but are usually not

sharply defined and are more diffuse over the body. They usually do not show sensory disturbances during the early stages, and the diagnosis must then depend on the demonstration of bacilli. A method which facilitates the demonstration of bacilli is described.—[From abstract in *J. American Med. Assoc.* **145** (1951) 1385.]

TRAPL, J. Inicialni forma lepry. [A case of imported leprosy.] *Casop. lék. cesk. (Prague)* **89** (1950) 1232-1235.

A case of imported tuberculoid leprosy in a 38-year-old man is reported. First signs appeared three years after the patient left Bengal. Treatment with a combination of hydnocarpus oil (1-5 ml. weekly i. m.), diasone tablets (0.3-1.8 g. daily in six-week courses with two-week pauses) and calciferol (600,000 units weekly for several months) proved successful. The initial spots and papules disappeared in four months. The nasal smears were negative, Mitsuda reaction strongly positive.—[Abstract from *Excerpta Med.* **5** (1951) 74.]

BARNETSON, J. Oscillometric studies in neural leprosy. *Trans. Roy. Soc. Trop. Med. & Hyg.* **43** (1950) 535-538.

Because the oscillometric index has been found useful in diagnosing obliterative lesions of the arterioles of the limbs, the writer used it to investigate the state of the peripheral arteries in 20 cases of early and 17 cases of advanced neural leprosy. The patients were placed in a semi-recumbent position, and by means of a sphygmomanometer cuff increasing pressures were exerted on the leg and arm while the oscillations were noted at the ankle and wrist.

$$\text{Oscillometric Index} = \frac{\text{Max. movement at ankle in mm. mercury}}{\text{Max. movement at wrist in mm. mercury}}$$

Compared with controls, all the readings were found to be within normal limits (i. e. about 1.6-1.8) which indicated that no organic occlusion of the arterioles takes place in neural leprosy. —G. O. TEICHMANN

BARNETSON, J. Skin temperature studies in neural leprosy. *Trans. Roy. Soc. Trop. Med. & Hyg.* **43** (1950) 539-544.

Two series of temperature experiments were carried out to find if there were any peripheral circulatory anomalies in cases of neural leprosy. In the first series the feature recorded was the time taken for the skin temperature on the dorsum of the great toe to return to normal after the foot had been immersed in hot water at 100-115°F. or in ice-cold water for 20 minutes. The results in both early and advanced cases correspond very closely to the normal controls, showing that response to local stimulation is not impaired. In the second series the hand and forearm of one side were first immersed in ice-cold water for 30 minutes and then transferred to hot water (110-115°F.) for one hour. During this time the skin temperatures of the opposite thumb and great toe were registered, and the temperature range and the interval in minutes between the time of immersion in hot water, and the attainment of maximum temperature were noted. The results showed failure of reflex dilatation in the non-immersed limbs. The degree of failure ran parallel to that of neurotrophic changes, particularly bone atrophy, but this correlation only held good for groups and not for individual patients. As destruction of nerve fibers progresses there is increasing failure of reflex vasodilatation.

—G. O. TEICHMANN

- ✓ PESHKOVSKI, G. V. [Role of the nervous system in the pathogenesis of leprosy.] *Nevro-pat. i Psichiat. (Moscow)* **18** (1949) 11-17.

The author has found the epicritic tactile sensibility to disappear immediately after the epicritic temperature-sensibility, the protopathic sensibility disappearing last. When sensibility is restored under therapeutic measures, the first to appear is that to pain; those to temperature and tactile impressions are seldom and incompletely restored. Procaine blocks results in recovery of the sensibility to pain in a short time (up to 4 days), which proves that initially in leprosy there is no destruction but only a "slowing down." Only when the process is of long standing are the receptive apparatus and nerve fibers destroyed, making the loss of sensibility irreversible. Curves were made of the changes of threshold-values of the sensibility to tactile and pain stimuli in the skin of the forearm and the abdomen, also after administration of luminal and after procaine block. These curves showed that the changes in sensibility are linked with changes in the function of adaptation of the sympathetic nervous system, and that on the other hand they are the result of a parabolic "slowing down" of the peripheral nervous system caused by chronic stimulation by growing leprosy infiltrates.—[From abstract in *Excerpta Med.* **4** (1950) 482.]

- ✓ JOSEPH, J. J. The median nerve test in leprosy. *Antiseptic* **46** (1949) 674-675.

While examining outpatients in a leprosy hospital in Madras the author found that, in certain types of early leprosy, the median nerve medial to the cubital fossa as well as the radial nerve lateral to the fossa were bilaterally tender. This tenderness of the nerves, with or without thickening and with no lesion over their areas of distribution, seemed to the author to imply that the disease was active, progressive and probably systemic. This sign, however, was not characteristic of leprosy. This tenderness was best elicited with the forearm in an extended position, and the author thought that this tenderness might be due to vitamin B1 deficiency. [See letter on this subject by Dr. S. N. Chatterjee, *THE JOURNAL* **18** (1950) 407.] —DHARMENDRA

- ✓ DE LAEY, A. & DUBOIS, J. La lèpre oculaire au Congo Belge. [Ocular leprosy in the Belgian Congo.] *Ann. Soc. belge Méd. Trop.* **30** (1950) 1453-1466.

Following a summary of the classical ideas of ocular leprosy, the authors report the result of a survey of 200 patients in the Stanleyville Province of the Belgian Congo. Of 50 lepromatous (L) cases, 11 (22%) had no lesions; the others showed lesions, mostly simply cutaneous; 31 had more or less complete madarosis. Eleven cases with punctate keratitis are reported, with no discussion of the etiology. Furthermore, 2 lepromas of the upper eyelid were found. Of 150 neural (T) cases, 72 (41%) had no ocular lesions. Here again authors report 59 cases of more or less complete madarosis; 2 had slight lagophthalmos, and 10 had slight conjunctivitis, etc. They conclude that, in the Belgian Congo, leprotic ocular lesions are as a rule slight and characterized by lesions of the adnexia (loss of eyelashes and eyebrows.) [The lesions are in fact cutaneous in the majority of cases.] —A. DUBOIS

NUÑEZ, R. Interesante localización de una lepra tuberculoide quiescente. [An interesting localization of a quiescent tuberculoid leprosy lesion.] Sesión Dermatológica en homenaje al Prof. L. E. Pierini, Buenos Aires, Nov. 11-13, 1949, pp. 191-192.

This paper deals with the case of a young girl with a single quiescent tuberculoid lesion in the left popliteal fossa. This location is contrary to the hypothesis of Schmidt, according to which the absence of lepromatous lesions in the large folds is due to the peculiar metabolic conditions in these regions with respect to the oxygen-reduction system, by which the *Mycobacterium leprae* is deprived of oxygen necessary for its existence.

—G. BASOMBRÍO

ARGUELLES CASALS, D. La estructura tuberculoide en dermatología cubana. [Tuberculoid structure in Cuban dermatology.] Bol. Soc. cubana Dermat. y Sifil. 3 (1946) 16.

A brief review of skin diseases in whose lesions the tuberculoid structure is found. Tuberculoid leprosy is mentioned, and its well known bacteriological characteristics are noted.

—F. R. TIANT

LOWE, J. Dosage of diamino-diphenyl sulphone. Lancet 2 (1950) 36-37.

The results of investigations into the possibility of reducing the dosage of diaminodiphenyl sulfone (DDS) in the treatment of leprosy, foreshadowed by the author in an earlier paper [see THE JOURNAL 18 (1950) 549] have now been issued in the form of an amending note. Whereas he previously recommended a dosage rising from 100 mgm. to 300 mgm. a day within 5 weeks, he has now found that 100 mgm. a day is usually enough to produce a good clinical and bacteriological response. He is now using four dosage regimens, as follows:

	Dosage (mgm.) and frequency	Weekly total (gm.)
(1)	300, six days a week	1.8
(2)	300, alternate days excluding Sundays	0.9
(3)	200, six days a week	1.2
(4)	500, twice a week	1.0

"There is so far no significant difference in the response to these differing dosages in lepromatous cases; but in tuberculoid cases daily administration appears to produce a more rapid response. The lower dosage is somewhat more easily tolerated, though little serious trouble has been encountered on the higher dosage." It is stressed once more as imperative that induction of the treatment should be slow, even with the lower dosage levels; the standard dose should not be attained for at least one month to six weeks or more. The lower dosage is held to be of particular advantage to workers in India, some of whom had reported that Indians tolerate DDS less readily than Africans.—[From abstract supplied by Imperial Chemical (Pharmaceutical).]

DHARMENDRA, SEN, N. & CHATTERJI, S. N. Treatment of leprosy with sulphetrone injections in the outpatients. Lep. India 22 (1950) 112-128.

The present paper reports the results of intramuscular administration of sulphetrone in the outpatients attending the leprosy clinic of the School of Tropical Medicine, Calcutta. The investigation included 56 cases, 41 of the lepromatous and 15 of the neural type. The drug was given intra-

muscularly, twice weekly, as a 50% aqueous solution in two dosages; the smaller one was 0.25 cc. and the larger one 3 cc. Most of the lepromatous cases had been under treatment with sulphetrone for a year or a little longer; one-half of the neural cases with tuberculoid lesions had been under treatment for a year or a little less, the other half only for 3 to 5 months. The treatment was found of value in the tuberculoid as well as the lepromatous types. Clinical improvement was produced in all the cases with both of the doses, but the larger one was decidedly superior, as with it the improvement was more marked. —AUTHOR'S ABSTRACT

6 DHARMENDRA. The results of sulphetrone treatment of leprosy in the Gobra Hospital, Calcutta. *Lep. India* **22** (1950) 56-89.

A study is reported of oral and intramuscular treatment with sulphetrone in 87 cases of lepromatous leprosy, inpatients of a leprosy hospital in Calcutta. The total period of treatment was from 1 to 4 years. Definite clinical improvement was seen in 86 of the 87 cases. The improvement has been "slight" in 8 cases, "moderate" in 13, "much" in 44 and "marked" in 21. The patients in the last group are now free from all signs of leprosy, except for such deformity as existed at the beginning of treatment. A number of patients having enlarged lymphatic glands, with chronic sinuses in some, improved remarkably. Only one of the cases became completely negative bacteriologically, but a majority showed definite improvement short of complete negativity. Complaints of nausea, vomiting, giddiness and weakness were reported in the early months of treatment, but they disappeared as the treatment progressed. Exfoliative dermatitis and urticarial rashes were sometimes seen. In only a small percentage of cases did the resulting anemia become severe enough to necessitate temporary withdrawal of the drug. A comparison of the intramuscular and oral methods of administering the drug showed that the intramuscular one is the more economical and possibly the more effective; by that route a total weekly dose of 4 gm. per week would be sufficient, against the usually recommended dose of 36 gm. by mouth. —AUTHOR'S ABSTRACT

8 CHOUDHURY, B. N. & MUKERJEE, B. Chemotherapy of leprosy and tuberculosis with sulphones. *Calcutta Med. J.* **46** (1949) 179-193.

The authors critically review the present status of knowledge of the sulfone compounds. The chemistry and pharmacology of these drugs are discussed, including toxicity and tolerance, drug concentration in the blood and body fluids, and excretion. The chemotherapy of tuberculosis, including the *in vitro* test and the treatment of experimental and clinical tuberculosis, is then considered. Lastly, the chemotherapy of leprosy with promin, diasone, promizole and sulphetrone is briefly reviewed. The authors conclude that these compounds have a definite place in the chemotherapy of mycobacterial diseases. The article contains 77 references.

—DHARMENDRA

95 8 [EDITORIAL] Sulphones in the treatment of leprosy. *Lep. India* **22** (1950) 39-41.

It is asserted in this note that the extensive use of the sulfones is justified not only by the great benefit derived by the patients under treatment, but also by the contribution that it is likely to make towards the control of the spread of infection. Efforts that are being made to reduce

the cost of treatment are discussed briefly. These have mainly been in two directions, firstly, the parenteral administration of the sulfones commonly used by mouth, and secondly, the use of the parent substance, DDS, either by mouth or parenterally.

—DHARMENDRA

492 ✓ MUIR, E. Bacterioscopic assessment of progress in leprosy. *Lep. India* **22** (1950) 43-45.

The author points out that the assessment of progress in leprosy, especially in patients under sulfone treatment, is chiefly dependent on the bacteriological examination. Discussing briefly the methods of making such examinations and some of the pitfalls, he recommends that sites for taking smears should be chosen which experience, appearance and palpation suggest as likely to contain the most bacilli. He usually takes five smears from each patient. The frequency of bacilli in each smear is recorded as of one of five grades: negative; few, 1+; moderate, 2+; many or numerous, 3+; and massive, 4+. The "bacillary index" (B.I.) is obtained by totalling the figures assigned to all of the smears and dividing it by the number of smears examined.

—DHARMENDRA

✓ COCHRANE, R. G. Chemotherapy in leprosy. *Practitioner* **166** (1951) 373-381.

This article is part of a symposium on chemotherapy and is a summary of current trends in the use of the sulfone drugs in leprosy. The writer says that "for general guidance it should be stated that the dosage of any given derivative for diaminodiphenyl sulfone should be in proportion to its DDS content." Details are given of treatment with sulphetrone, diasone, and DDS. Promin and promacetin are considered less satisfactory. Sulphetrone is considered to be the drug of choice for parenteral administration. A standard dosage of 4 gm. per week as a 50% sol. in distilled water has been recommended. If this proves too painful it may be neutralized with sodium carbonate (1.4 gm. to the liter), or a weaker solution may be used. Sulphetrone may also be given orally in tablet form, gradually increasing from 2 to 6 tablets (1-3 gm.) daily. Diasone is also given as tablets, each containing 0.3 gm. increasing gradually from 1-3 tablets daily. When DDS was first used it was given by injection suspended in peanut or coconut oil, but since it has been shown to be completely absorbed when given by mouth that route is recommended. A maximum weekly dosage of 6 tablets (0.6 gm.) is advised. It may be given daily for 6 days each week increasing from ½ to 1 tablet, or twice weekly from 1 to 3 tablets. Children tolerate sulfones well. Under 12 years half-doses, and under 7 years quarter-doses, may be given. The writer advises the use of sulfones in all lepromatous and active tuberculoid cases, but thinks that hydnocarpus oil is more useful in inactive cases. The most common toxic signs are decrease in the red blood cell count and the occurrence of erythematous nodules (Wolcott's erythema nodosum leprosum). These latter are considered to be due to an acute response to the rapid breaking down of *M. leprae* as in Herxheimer reactions, and are on the whole to be considered favorable. Few bacilli are seen in these nodules, and they should not be confused with active extension of the disease. Sulfones are believed to render the environment unsuitable to the growth of *M. leprae*, which break up into granules and thus are more easily dealt with by the macrophages. After disappearing from the skin these granular forms may

often still be found in the subcutaneous nerves, which may in this way form reservoirs for the recrudescence of the disease. For this reason the writer advises the continuation of treatment for a long time after bacilli disappear from the skin. Certain anomalies are noted in the response to sulfone treatment. Some advanced cases respond dramatically whereas early cases may remain stationary for prolonged periods. Reference is made to thiacetaxone and PAS and streptomycin. Caution is advised with regard to statements concerning the absolute success of modern therapy in leprosy.

—G. O. TEICHMANN

615
TZANCK, A. & BASSET, A. Considérations sur les traitements actuels de la lèpre. [Notes on the present treatments of leprosy.] Bull. Soc. française Derm. et Syph. **56** (1949) 186-188.

Chaulmoogra and the sulfones constitute the basic treatment of leprosy. Streptomycin and perhaps PAS are good adjuvants. The authors recommend the combination of sulfones and chaulmoogra for the mixed forms and as a consolidation treatment in lepromatous leprosy; also the combination of sulfones and streptomycin in acute reactions and as the initial treatment for incipient cases.

—R. CHAUSSINAND

8 LAVIRON, P. & LAURET, L. Les expérimentations en course à l'Institut Marchoux. [Experiments under way at the Marchoux Institute.] Bull. Méd. A. O. F. (Dakar) (1949) Spec. No., pp. 107-112.

Experiments have been conducted with two sulfonamide products—sulfathiazole sodium and sulfathiazole *cinnamylidénique*—for two years, and with a "fontamide cinnam 3251" and also a sulfone product (3668 R P Rôdilone Cinnam) for one year. The authors have observed, with all, an absolutely incontestable activity with respect to the lesions of leprosy and on the bacilli themselves. The action of the sulfone was more rapid than that of the other drugs.

—R. CHAUSSINAND

8 GILLET, J. Note sur quelques cas de lèpre (forme lepromateuse) traités par sulfones (diasone et sulphétrone). [Notes on certain cases of lepromatous leprosy treated with diasone and sulphetrone.] Ann. Soc. belge Méd. trop. **30** (1950) 441-447.

A report of a rather short treatment—less than 1 year—with diasone or sulphetrone of 10 lepromatous cases. Seven had become bacteriologically negative, and in the other 3 the bacilli had become few. The cutaneous lesions and anesthesia regressed less noticeably. Pain diminished in 4 cases out of 5.

—A. DUBOIS

383
8 HERMANS, E. H. La sulfamidothérapie de la lèpre. [Sulfone therapy in leprosy.] Arch. belges Derm. et Syph. **5** (1949) 334 (abstract).

Thirty-five patients had been treated with diasone or promin. Twelve of them were tuberculoid cases; 7 of these were cured after 8 to 11 months treatment and 5 were still under treatment. The other 23 patients were lepromatous or atypical cases, but the results of the therapeutic trial are given for only 17 of them, of whom 13 had improved, 1 was unchanged and 3 had grown worse. These drugs have not been too well tolerated.

—R. VAN BREUSEGHEM

8 CHOVER MADRAMANY, P. La traqueotoimía y las sulfonas en la lepra. [Tracheotomy and sulfones in leprosy]. Fontilles **2** (1949) 227-230.

After mentioning the frequency of laryngitis in lepromatous patients, and pointing out that this involvement in leprosy could be prevented to a considerable extent by proper care and treatment of endonasal lesions, which the author believes precedes laryngitis, he concludes with the opinion that the necessity of employing tracheotomy has disappeared since sulfones have been used in treatment. These drugs are ideal for leprosy laryngitis, promin being to that condition what streptomycin is to tuberculous laryngitis.

—F. CONTRERAS DUEÑAS

- 6 PARDO CASTELLÓ, V., TIAN, F. R., MESTRE, J. J. & IBARRA PÉREZ, R. El tratamiento de la lepra por las sulfonas. [Treatment of leprosy with the sulfones.] *Bol. Soc. cubana Dermat. y Sifil.* **5** (1948) 159-169.

Report of the results of sulfone therapy in 17 cases of lepromatous leprosy treated during periods varying from 17 to 44 months. Only 7 cases were treated with promin intravenously, in doses of 1-5 gm. daily except Sundays for 8 months; all improved markedly. Treatment was then changed to diasone on account of the inconvenience of the daily injection, and these and the other patients received 0.3 gm. three times daily, vitamin B1 and calcium gluconate being given concurrently. Two were forced to abandon treatment on account of severe dermatitis with high fever reappearing after each return to the drug even with minimal dosage. Existing painful neuritis was not markedly benefited. In most cases there was observed a state of continuous erythema nodosum, without the severe general symptoms of lepra reaction. This eruption subsided with the interruption of the drug, and is considered a favorable tissue reaction. All of the patients improved clinically, although in none of them did the lepromatous structures disappear from the lesions; two of them became negative bacteriologically.

—F. R. TIAN

- 6 URRETA ZAVALLA, A. Ação das diamino-difenil-sulfonas sobre as complicações oculares de lepra. [Action of promin on the eye lesions of leprosy.] *Rev. brasileira Leprol.* **17** (1949) 5-17.

Promin was used in 25 cases, with special attention to the effect on eye lesions. The treatment periods were 12-14 months; the dosages are given in detail. The cases are divided into 4 groups. Group I, 5 early lepromatous cases in the indeterminate stage, had no eye complications; one improved clinically, but not bacteriologically. Group II, 7 moderately advanced lepromatous cases (L2) had slight ocular lesions, some infiltration of the cornea and thickening of the circumcorneal nerves. Three showed distinct improvement of the eye condition, in 2 there was no change, and in the other 2 there was a nodular iritis and extension of the lesion to the anterior part of the uvea. Group III, 5 more advanced cases (but still L2), had more severe eye lesions with nodular iritis. In one that condition remained stationary, in the others the miliary nodules increased in number. Group IV, 8 advanced cases (L3), had more severe eye complications, keratitis, nodules in the iris and diffuse irido-cyclitis. The dosage varied more than with the other groups because of differences in tolerance. In 6 the ocular lesions became definitely worse, the nodules increased and the irido-cyclitis extended; in 1 the condition remained unchanged; in only 1 was improvement observed in both the interstitial keratitis and the acute irido-cyclitis. It is concluded that promin will not arrest or delay the development of the slow and progressing ocular lesions of leprosy.—[From abstract in *Trop. Dis. Bull.* **46** (1949) 1151.]

- MOTTA DE AQUINO, U. Sulfonoterapia intensiva na Colonia Santa Teresa. [Intensive sulfone therapy in the colony Santa Teresa.] *Rev. brasileira Leprol.* **17** (1949) 45-47.

Three groups of patients were treated with diasone or diasone and promin. Group A: Beginning with 1 tablet of diasone daily, the dose was slowly increased to 8 a day. Group B: Beginning as before, the dose was rapidly increased to 15 a day, within about 2-3 weeks. Group C: Here the dose was slowly increased to 3-6 tablets and in addition 2-5 gm. of promin was given. There was complete tolerance in Groups A and C, whereas in Group B relatively frequent and dramatic signs of intolerance appeared after 3 or 4 weeks. The clinical and bacteriological results were generally favorable.—[From abstract in *Excerpta Med.* **4** (1950) 157.]

- 538 ✓ RHEINBOLDT, F. A., BERTI, F. A., PEREGO, C., RIECKMANN, B. H. G., RZEPPA, H. W., MAURI, A. C., HADLER, W. A. & SOUZA LIMA, L. Quimioterapia da lepra: Estudos químicos, experimentales e terapêutico-clínicos. Nota prévia. [The chemotherapy of leprosy: chemical, experimental and clinical studies.] *Rev. brasileira Leprol.* **17** (1949) 135-145.

This is a preliminary article of a proposed series of contributions to gather information on the problems of prophylaxis and treatment of leprosy. The matter is divided into three parts: (1) chemical, on the composition of compounds used and ideas for the synthesis of other drugs to be tried; (2) experimental, recording the results of tests of the drugs on laboratory animals; and (3) clinical trials in human cases. In the first part about a dozen sulfone derivatives are mentioned, with references to the literature. Five are derivatives of 4,4'-diaminodiphenyl sulfone. In the second part, the results of 18 drugs in infected mice and on the Stefansky bacillus are given. The data include tolerance, the effects on the blood state and the general condition, the anemia produced, and the bone marrow changes (hypoplastic in two instances where this is mentioned). The clinical section concerns the treatment regimen in moderate and advanced lepromatous cases with the basic drug [DDS] given by mouth, and the formaldehyde bisulphite of sodium compound AMBS., given intravenously to some and by mouth to others. The clinical results will be reported after a longer trial. Para-aminosalicylic acid has also been used, but seems to be less effectual than the sulfones. Other compounds are to be studied and reported upon later.—[From abstract in *Trop. Dis. Bull.* **47** (1950) 548.]

- ✓ BOYER, F., RIST, N. & SAVIARD, M. Recherches sur le mode d'activité des sulfones combinées. I. Activité bactériostatique "in vitro." [Study of the mode of action of combined sulfones.] *Ann. Inst. Pasteur* **77** (1949) 680-687.

The complex disubstituted sulfones (promin, diasone, sulphetrone) are rapidly hydrolysed in dilute solutions and liberate diaminodiphenyl sulfone. There is therefore no reason to believe that these complex sulfones act directly upon the pathogenic forms, either *in vitro* or *in vivo*, by means of their entire molecules without liberation of the parent sulfone. The monosubstituted sulfones seem to act *in vitro* by their entire molecules, but the possibility is not excluded that they may undergo a certain degree of hydrolysis in the organism, especially when given by mouth. The *in vivo*

action of these sulfones is paralleled by their toxicity, and apart from the matter of solubility they present no substantial advantage over the diaminodiphenyl sulfone from which they are all derived.—R. CHAUSSINAND

- 6 CORNBLEET, T. & COHEN, D. Mycobacterium leprae nodules continuing to form nine months after commencement of diasone therapy. Arch. Dermat. & Syph. **63** (1951) 531.

This is a discussion of a case which had been presented before the Chicago Dermatological Society. It is stated that it is not unusual after sulfone treatment to find that there is a mutation of the type of the disease from tuberculoid to lepromatous [*sic*], with a change in the clinical type of lesion. It is not unusual for diasone to be given for two or three years before there is improvement. The speaker had found that, when the total blood glutathione is below 25 mg. per 100 cc. the administration of glutathione helps the action of diasone. It is advisable to give ascorbic acid, 400 to 500 mg. daily, along with the glutathione. —F. A. JOHANSEN

- 7 TZANCK, A. & BASSET, A. La streptocycine dans le traitement de la lèpre. [Streptomycin in the treatment of leprosy.] Bull. Soc. française Derm. et Syph. **57** (1950) 207-209.

After presenting 7 case reports, the authors conclude that if streptomycin cannot be considered a treatment for leprosy, it nevertheless serves to prevent the evolution of acute febrile septicemic outbreaks.

—R. CHAUSSINAND

- 6 GATÉ, J. & ROUSSET, J. L'action des extraits placentaires dans les différentes formes de lèpre. [The effect of placental extracts in the various types of leprosy.] Bull. Soc. française Derm. et Syph. **56** (1949) 396-397.

A solution of 10% to 20% placental extracts injected in doses of 3 cc. three times a week in a series of 20 injections with 8 to 15 days interval between courses has a highly favorable effect on ocular and cutaneous lesions in lepromatous cases. The effect is less appreciable in the tuberculoid form.

—R. CHAUSSINAND

- 7 FERON, J. Une thérapeutique de choc dans le traitement de la lèpre. [Shock treatment in leprosy.] Bull. Soc. Path. exot. **43** (1950) 389-390.

Shock produced by intraspinal injection of "néophage" and colloid metal in a case of the maculoanesthetic form of leprosy was followed by complete clinical cure in a short time. Also in another case, with complete anesthesia of the lower part of the trunk and the lower extremities, sensibility returned in 8 days after an intraspinal injection of 5 cc. of collobiase and chaulmoogra. The author concludes that these dramatic experiments, although they were efficacious, should not be generalized.—R. CHAUSSINAND

- 6 SOUZA-ARAÚJO, H. C. Tratamento eclético da lepra; 20 años de experiencia. [Eclectic treatment of leprosy; 20 years' experience.] Mem. Inst. Oswaldo Cruz **47** (1949) 129-210. (Summary in English.)

The author gives the clinical records of 20 patients, 14 of whom were treated for 17 months, the rest much less. The treatment employed was the author's eclectic one, preferred by him for many years, in which galvanocautery is used with minor surgery, chaulmestrol (pure or with

0.5% iodine or 4% creosote) and other auxiliary curative agents. The chaulmoogra derivatives were administered twice weekly by subcutaneous infiltrations, periodically by injections into enlarged lymph nodes and nerve abscesses, as chaulmoogra soap tablets by mouth, and in nasal tampons. The galvanocautery was applied once a week to active leprotic lesions, followed by painting with 30% trichloroacetic acid. All 20 patients were positive for bacilli before treatment, and became more strongly positive after some months treatment, but at the end 14 were negative while in the six who remained positive the bacilli were sometimes very scanty. The results of various serological reactions are given. Many cases had very high sedimentation indices, which are a false measure of the severity of the disease; in some they remained high despite great improvement. All patients who had more than 12 months treatment became practically free of symptoms. Lepra reaction, which was rare, always started by embolic rash and was controlled by the destruction of those skin lesions by galvanocautery. A combination of diasone with galvanocauterisation (suggested by Dr. E. Muir) is now being used with satisfactory results.—[From the author's summary.]

- LANCEPLEINE, J. Cholestérinémie, calcémie et glycémie chez les lépreux de l'A. O. F. [Cholesterinemia, calcemia and glycemia in leprosy patients in French West Africa.] *Méd. trop.* **9** (1949) 502-518.

Examinations to determine the blood cholesterol levels were carried out in 48 cases (20 neural and 28 lepromatous) and in 18 controls, the ages ranging from 17 to 25 years. Definite hypocholesterinemia was found in 83% of the lepromatous cases and in 37% of the neural ones. Calcium determinations were made in 37 cases (15 lepromatous, 10 mixed and 12 neural) and in 17 controls. It was concluded that a notable and continuous decrease of the blood calcium content indicates an aggravation of the disease or the imminence of lepra reaction, whereas hypercalcemia seems to be a favorable sign of amelioration. Finally, with respect to glycemia the results in 51 cases (31 lepromatous and 20 neural) and 17 controls showed that the frequency of hyperglycemia in patients is about the same as in normal individuals. However, in one-half of the cases the level is changed, and the percentage of hypoglycemia is far more significant in neural than in lepromatous cases. —R. CHAUSSINAND

- LIPPI, M. La colesterinemia nella lepra. [Cholesterinemia in leprosy.] *Arch. italiano Sci. Med. Trop. e Paras.* **31** (1950) 266-273.

The English summary appended to the paper is as follows: "On testing the cholesterol content of the blood in 19 cases of leprosy, certain relations between this and the clinical form of the disease and the general conditions of the patient were observed: the cholesterol content appeared diminished in the tuberculous form and in patients in serious general condition. No relation was, however, found between the cholesterol content and the initial manifestations of the disease, nor with the condition of spleen and liver or with previous diseases."—[Abstract from *Trop. Dis. Bull.* **48** (1951) 44.]

- CASACCI, A. Sulle alterazioni ossee lebrose. [Bone changes in leprosy.] *Clin. ortoped.* **2** (1950) 37-52.

The bone lesions are of two different types: (1) specific involvement by granulomatous tissue (bone leproma), and (2) nonspecific changes due

either to secondary osteomyelitis in the ulcerated forms of "lepra cutanea," or trophoneurotic alterations in the neural type of the disease. Specific infection of the bone is always hematogenous, starting in the marrow space of the metaphysis with secondary destruction of bone tissue. Histologically this specific alteration does not differ greatly from the leprous granuloma in other locations. The vascular changes deserve special consideration; they consist mainly in a hypertrophic arteritis with progressive occlusion of the lumen. Symptoms of this lesion are not severe, and spontaneous fractures are rather rare. The trophoneurotic changes, as in other nervous diseases, consist of marked atrophy and destruction of the distal segments of long bones of the hand and foot, and fractures are frequent. Secondary osteomyelitis of ordinary nature is often observed, mainly in ulcerated cases.—[From abstract in *Excerpta Med.* 5 (1951) 30.]

6 ERICKSON, P. T. & MAYORAL, A. An unusual lesion of the talus occurring in leprosy. *Radiology.* 54 (1950) 357-364.

This is a well-illustrated article on an unusual destructive lesion of the talus observed in 2 patients at the National Leprosarium at Carville and considered to be of leprous origin. Clinically, the lesion is of insidious onset, manifesting itself during prolonged lepra reactions by intermittent pain and swelling in the ankle region. The destructive process of the bone is not demonstrable until the pain and swelling are persistent. The lesion, located in the inferior portion of the neck and head of the talus, has a moth-eaten appearance. It is not attributed to extension of a superficial infection to the underlying bone, or to extensive neurotrophic disturbances. In the hope of obtaining further information as to the nature and frequency of the involvement of the talus, roentgenological and clinical studies were carried out on 441 patients, in 8 of whom there were found changes in the talus of unusual nature. These lesions occurred only in lepromatous cases; 85% of the 441 were of this type. This lesion is capable of producing a splay foot, such as is observed in fracture of the neck of the talus, if weight bearing is allowed prior to healing. The authors believe that recognition of this lesion as early as possible is important to obviate the development of a severe deformity. The recommended treatment is bed rest and physiotherapy in the form of heat, massage and passive exercises.

—F. A. JOHANSEN

161 6 BASSET, A. & SCHNEIDER, J. Altérations osseuses des membres apparues au cours du traitement de la lèpre par la diamino-diphényl-sulfone. [Bone changes of the limbs seen during DDS treatment.] *Bull. Soc. française Derm. et Syph.* 57 (1950) 299-302.

Two lepromatous and one tuberculoid patient treated with DDS complained of localized pain in the legs, and one of them also in the forearm. Radiological examination showed increased density of the cortex of the shafts of the tibia, radius and cubitus, with clear limitation of the medullary cavity and some shadows of transverse trabeculae of increased density, without evidence of osteoporosis of the metaphysis. It is recognized that without radiographs made before treatment it is impossible to say that the DDS treatment was responsible for the condition observed.

—R. CHAUSSINAND.

6 MIGUEL, S. & MIRÓ, J. Estudios sobre lepra visceral. I. El corazón en la lepra. [Studies on visceral leprosy. I. The heart in leprosy.] *Fon-tilles* 2 (1949) 202-226.

For some time in the sanatorium of Fontilles all of the clinical manifestations of the more advanced cases have been observed for the purpose of studying the visceral manifestations of leprosy. The circulatory function of 38 patients has been investigated, particularly the function of the heart. Of these, 5 were found to have myocarditis; and both the various investigations carried out, given in this documented report, and the histological examinations of cases which have been autopsied indicate that leprosy does not selectively involve the heart. Myocarditis is thought to be due to non-specific infiltration and to the hyalin degeneration which is sometimes encountered in necropsies. In these cases a condition of generalized amyloidosis is often found, and it is said that the hyalin degeneration often related to the amyloidosis may be regarded in the heart as an expression of a generalized metabolic disturbance caused by the leprosy bacillus.

—F. CONTRERAS DUEÑAS.

- ✓ SCHUJMAN, S. Estudocomparativo das intradermorreações com a lepromina bacilar comum e a cadavérica em doentes de lepra. [Comparative study of intradermal reactions in leprosy patients with the common bacillary lepromin and that prepared from autopsy material.] *Rev. brasileira Leprol.* **17** (1949) 147-150.

Using the bacillary antigen from autopsy material prepared by Campos, the author made a comparative study of intradermal reactions produced by this antigen in a 1:1000 concentration. The study was made in 170 patients, 120 of whom had lepromatous and 50 tuberculoid leprosy: agreement was found in 96% of cases.—[Translation of the author's summary, from *Trop. Dis. Bull.* **47** (1950) 472.]

- ✓ DHARMENDRA & MUKHERJEE, N. Lepromin test in cases of lepromatous leprosy treated with sulphones. *Lep. India* **22** (1950) 128-130.

This present report is based on the results of lepromin test in 78 cases of leprosy of the lepromatous type which had been under treatment with sulphathione for from 1 to 4 years and showed varying degrees of clinical and bacteriological improvement, 16 of them "marked," 42 "much," 12 "moderate," and 8 "slight." One case had long been bacteriologically negative, 15 were almost negative, and the others were moderately or highly positive. Refined lepromin antigen prepared by the senior author was used, the results being read after 24 hours. The criterion of positivity of the reaction was an area of erythema at least 10 mm. in diameter, with definite thickening and edema of the erythematous area. In these cases there was either no reaction at all or only a slight one with an area of erythematous infiltration of about 5 mm. and no or practically no induration. In only one case there was erythema of 8 mm. accompanied by some induration, and this reaction was read as weak positive.

—AUTHORS' ABSTRACT.

- ✓ OLMOS CASTRO, N. & BONATTI, A. A. Reacción serológica cuantitativa en lepra indeterminada. (Comunicación previa.) [Quantitative serum reaction in indeterminate leprosy; preliminary report.] *Rev. argentina Dermatosisif.* **33** (1949) 157-159.

The quantitative serum reaction in indeterminate leprosy is characterized by serological curves of low height and low titer. The results permit establishing concordance with the clinical, immunological and histo-

logical status of the patients. However, further observation is necessary in order to form an opinion regarding the value of the reaction in prognosis. —G. BASOMBRÍO.

- 6 DUBOIS, A. & SWERTS, L. L'emploi du microscope a fluorescence dans le diagnostic de la lèpre. [The use of the fluorescence microscope in the diagnosis of leprosy.] *Ann. Soc. belge Méd. Trop.* **30** (1950) 1473-1475.

Comparing the results in the search for Hansen bacilli in duplicate slides of dermal scrapings, the authors using both the Ziehl-Neelsen method and the fluorescent microscope (berberine). In total, 205 smears from 41 cases of various types were examined. The authors could not attribute any appreciable advantage to the fluorescence method. —AUTHORS' ABSTRACT.

- 7 MELENEY, F. L. and JOHNSON, B. A. Supplementary report on the case of chronic ulceration of the foot due to a new pathogenic mycobacterium (MacCallum). *Ann. Soc. belge Méd. Trop.* **30** (1950) 1499-1503.

This article records the sequel of the history of an American boy who had contracted an ulcer of the foot with acid-fast bacilli in Belgian Congo [see *THE JOURNAL* **19** (1951) 97]. Antibiotics proved effective only for the nonacid-fast microbes present. Against the acid-fast bacilli, local application of heat at 40°C. was very effective. It is known that the acid-fast bacilli recovered from ulcers in Australia die at 37°C. Under the heat treatment the ulcer improved and could be successfully grafted after surgical cleaning. The treatment in the United States lasted 4½ months. Bacteriological experimentation is not yet concluded. —A. DUBOIS.

ABSTRACTS FROM *LA LEPRO*, 1949

Abstracts of the Japanese literature are as yet obtainable only from *La Lepro*, the official organ of the Japanese Leprosy Association. Since the war, to the end of Vol. 17 (1948) the material therein was entirely in the Japanese language, and also in No. 1 of Vol. 18 (1949), which comprised the transactions of the 21st meeting of that Association (57 abstracts). Since then each issue has contained English-language abstracts of all articles, although a Special Number for 1949, which has three such articles, also contains 23 untranslated abstracts of papers read at the 19th meeting, and No. 1 of Vol. 19 (1950) is composed entirely of 70 such abstracts of papers presented at the 22nd meeting. In reprinting these abstracts the titles are given precisely as in the original. The abstracts themselves have been condensed when that seemed desirable, and edited for language, although at times it has been necessary to leave the text as it was. —EDITOR

- 7 YOSHIE, Y. Lepra in upper respiratory organs. *La Lepro* **18** (1949) 30-38 (in Japanese); English abstract, p. 29.

The author has studied the leprosy changes in the organs of the upper respiratory tract in 1,180 patients in the Tama Zensei-en National Leprosy Hospital between 1938 and 1943. Clinical observations: Nasal involvement was found in 83.1% of light cases, 97.2% of medium cases, and 99.2% of serious cases; pharyngeal and laryngeal involvement in 18.1 and 19.3% of light cases, 60.2 and 71.0% of medium cases, and 96.0 and 96.6%

of serious cases. Bacilli were found in the nasal mucus in 63.4% of the nodular type, 5.0% of the nerve type, and 6.7% of the macular type. Epistaxis or nasal catarrh had occurred in very few cases as a prodromal condition, but erythematous swellings of the nasal mucosa or miliary rashes or nodulous lesions were observed as initial symptoms. In cases of lepra maculosa, tuberculoid macules were sometimes produced. These lesions caused ulcers which resulted in cicatricial atrophy followed by various deformities. Autopsy observations: In the larynx the lesions are likely to develop on the epiglottic and arytenoid cartilages. Histologically, the initial focus was found around the nerve branches located deep in the submucous layer, with a tendency to grow sideways and giving rise to perichondritis. Lesions in the larynx are easier to cure than tuberculous lesions. Healed lesions were often found together with new ones, showing that the circulatory spread of the bacillus is a repeated event.—[From abstract.]

URABE, K. Rat leprosy, viewed especially bacteriologically. *La Lepro* **18** (1949) 39-54 (in Japanese); English abstract, p. 29.

The author's 15 years of study of *M. leprae murium* is summarized as follows: (1) Whenever that microorganism is found, care must be taken to assure the existence of pseudo-acid-fast morbidity [*sic*]. (2) Rat leprosy has been divided into two types, latent and manifest; the former is divided into two stages, so the latter is regarded as the third stage. (3) *Citellus* and *Eutamias* are susceptible to experimental infection, as well as rats and mice. (4) Biologically, the bacillus gives a slight katalase reaction. Among the same [*sic*] strains there is a considerable difference of resistance to heat equal to that of boiling. The range of pathogenicity varied according to strains. (5) Many experiments on cultivation of the bacillus have given results short of satisfaction. On a few initial culture media an increase of bacilli was perceived, but successive transplantation has been unsuccessful. (6) On cultivation, the author and others have found some development of pseudo-acid-fast organisms, which has given us a suggestion on experimental cultivation of the bacillus.—[From abstract.]

YOSHINAGA, T. Complement fixation reaction of leprosy serum. *La Lepro* **18** (1949) 57-58 (in Japanese); English abstract, p. 55.

The author has tried the complement fixation on 958 leprosy serum specimens with kephalin as the antigen. The positive rate was 49.1%. The Wassermann test has given 21.4% positive reactions in 1,789 specimens.—[From abstract.]

ICHIHARA, T. *Mycobacterium leprae murium* inoculation test for cats, dogs and a few kinds of bird. *La Lepro* **18** (1949) 59-62 (in Japanese); English abstract, p. 55.

Bacilli which had been inoculated were found active and alive for a month in a dog, 3 months in a cat, 2 months in a canary, a parrot a budgerigerigar, in each instance in the inoculated region or lymphatic glands.—[From abstract.]