

CURRENT LITERATURE

The current literature of leprosy is dealt with in this department as fully as possible. It is a function of the Contributing Editors (see inside of front cover) to provide abstracts of all articles published in their territories, but when necessary abstracts are taken from other sources.

SMALT, F. H. Kort verslag omtrent de leprabestrijding op Bali en Lombok. [Brief report of the antileprosy work in Bali and Lombok.] Meded. Dienst Volksgez. Nederlandsch-Indië 25 (1936) 32-37.

Previously the lepers on Bali and Lombok were ruthlessly removed to places along the coast, but gradually these rigorous measures were relaxed and many of them remained undisturbed in their villages, where sometimes little houses were built for them within the compounds. Developing this method, a beginning was made in 1934 with antileprosy propaganda, after making a preliminary investigation in which 51 cases were found among 5,312 persons examined. The people were urged to segregate the lepers at home or, where that could not be done, to take them to established leper asylums or villages. In 1935 systematic registration and treatment was begun at 61 centers, usually very simple structures to which the Government physicians and two specially trained leprosy experts go at regular intervals to examine the lepers, suspected lepers and their contacts, appropriate records being made.—[From author's summary.]

BUITELAAR, L. Lepra-verslag over de onderafdeeling Makale-Rante Pao (afd. Loewoe) Celebes. [Report on leprosy in the Makale-Rante Pao sub-district, Loewoe district, Celebes.] Meded. Dienst Volksgez. Nederlandsch-Indië 25 (1936) 64-72.

This article comprises a survey of the preliminary results of registration of lepers in the district concerned. The preliminary data obtained from the local native chiefs proved to be very general, though the Toradjas diagnose the disease accurately. With regard to the well-to-do and the notables the data were inadequate or entirely omitted, while only a few female lepers were indicated. Nevertheless, in many districts the leprosy density was fairly high, amounting to approximated 3 per thousand, and upon a more adequate exploration of this very difficult territory the rate will probably prove to be considerably higher. It was noticeable that the highest incidence is to be found in those districts that have but few inhabitants.—[From author's summary.]

KAPITAN, J. C. Een onderzoek naar het voorkomen van lepra op de Kei-Eilanden. [The occurrence of leprosy in the Kei Islands.] Meded. Dienst Volksgez. Nederlandsch-Indië 25 (1936) 72-79.

This investigation concerned a primitive people, feeding frugally and living unhygienically, chiefly along the seashore. On Small Kei Island 56 villages with 6,380 inhabitants were investigated, and on Great Kei Island 56 villages with 9,317 inhabitants, altogether 15,697 persons out of an approximate total

population of 50,000. In the former community 19 cases, and in the latter 86 were found. The principal foci were in mountain villages. Almost twice as many nerve cases were found as skin cases, and only one-fourth of all were found bacteriologically positive. The contacts examined (42) were all bacteriologically negative. On Small Kei Island the disease was more prevalent among the nobility, while on Great Kei Island it was found mostly in people of the middle classes.—[From author's summary.]

KAPITAN, J. C. Volksovertuigingen op de Kei-Eilanden betreffende het ontstaan van lepra. [Popular beliefs in the Kei Islands concerning the origin of leprosy.] *Meded. Dienst. Volksgez. Nederlandsch-Indië*. 25 (1936) 94-95.

The natives of the Kei Islands are aware of the infectious nature of leprosy; in many villages the lepers are shunned and segregated, and there is a popular notion with regard to the origin of the disease—"orang bikin," black magic. It is also assumed that there may be an intermediate host, some animal, to which infection must be attributed, and many people cannot be persuaded to eat animals bred by lepers or eggs from a leper's hens. On the other hand healthy people are found consorting with obvious lepers without recognition of any danger of infection. There are, therefore, the careful and indifferent; of the latter only a small proportion can be regarded as ignorant of the danger of contact.—[From author's summary.]

DARWIS, A. Het lepra-onderzoek in Lamongan. [The leprosy investigation at Lamongan.] *Geneesk. Tijdschr. Nederlandsch-Indië* 76 (1936) 2123-2128.

Among the 650,000 inhabitants 654 lepers were observed, 1 per thousand. The distribution of the disease is capricious, and does not seem to hold any relation to differences in geological conditions. The proportion of males to females is 2.7:1. There were 123 cases below the age of 20, and 408 above that age; 258 stated that they had become affected prior to their 20th year. Of 1,398 contacts, 93 had contracted the disease; of these very early cases 66 individuals stated that they had been affected before they were 20. Infection transmitted by brothers or sisters was quite frequent (40%).—[From author's summary.]

MUIR, E. Leprosy in Nigeria. A report on antileprosy work in Nigeria, with suggestions for its development. *Lep. Rev.* 7 (1936) 155.

This is a report on a tour of inspection in the British possessions in West Africa, on behalf of the British Empire Leprosy Relief Association. Nigeria is by far the largest and most important area dealt with, and a table is given to show that only 5,082 of the estimated number of 200,000 lepers are being cared for in the several government and mission colonies, some of the smaller of which are only homes for incurable cases. The expense of more extensive isolation would be prohibitive. The formation of leprosy boards in each province is recommended, this board to meet every year at the main provincial center or colony and coordinate the work and initiate new efforts of control. Antileprosy workers should be trained at the central colony, where cases suitable for treatment should be mainly admitted. Inexpensive clan settlements should be organized to accommodate the majority of the cases after local surveys are made to ascertain their numbers. Mission doctors should head the provincial centers, and the native administrations should be responsible for their upkeep. The medical staff should be supplemented by nursing sisters and

lay workers. Cheap huts should be constructed by the patients for their own accommodation. An expert would be required to visit and advise on all the provincial settlements. Over 4,000 *H. wightiana* trees are already available for furnishing a supply of the pure oil for injections at very much less cost than the esters, and more are being planted. An account of the Nigeria colonies is given.

The Gold Coast is dealt with more briefly. The few small colonies are described. The largest is the Ho settlement, with 264 patients. It is run at a relatively high cost as compared with the Itu colony in Nigeria, and comparatively little is being done from the medical point of view. A survey is required, together with the appointment of a whole-time trained leprosy medical officer. Forcible segregation is strongly advised against, because of its repeated failure elsewhere, with hiding of cases, which makes subsequent attempts at winning confidence of patients very difficult.

The third area dealt with is Sierra Leone, where a recent census revealed 3,656 lepers, the real number probably being 5 to 15 times as great. The natives recognize the disease readily. Work on similar lines to those recommended for Nigeria is urgently required in Sierra Leone, where the success of such a scheme is not remote.

—L. ROGERS.

✓ AJLOUNI, I. La lutte mondiale contre la lèpre et son intérêt particulier en Palestine. [The world struggle against leprosy with special reference to Palestine.] Thèse de Paris, 1936. Lavergne, Paris, 44 pp.

In sketching the history of leprosy the author points out the relation of the Hebrew "zaraath" and the Persian "baras," which signifies leprosy. Ancient historians wrote that there were many lepers among the Hebrews in Egypt, and that the latter did not escape from that country but were driven out because of it. In Jerusalem at the time of the Crusades there were two leprosaria, one for men and the other for women. Emphasis is laid on the Crusades in connection with the spread of leprosy in Europe in the Middle Ages. The measures taken then and in recent times are discussed, and the conditions in Palestine, where the disease has never been taken very seriously. Destruction of the archives during the war makes it impossible to determine what progress was made in the last century. The small leper house established in 1867, through the initiative of the Moravian Church, has become more important since the war. The conditions of life among the people that favor the spread of the disease are pointed out, and the rules under which patients and their families are dealt with, but no specific data regarding them or the incidence of the disease in the country in general are given.

—H. W. W.

DE SOUZA-ARAÚJO, H. C. A lepra e as organizações antileprosas do Brasil em 1936. [Leprosy and the antileprosy organizations in Brazil in 1936.] Mem. Inst. Oswaldo Cruz 32 (1937) 111-160.

In this historical and statistical study of leprosy in Brazil, the author describes the various antileprosy organizations in its twenty-two states and enumerates the number of recorded cases (26,411) and the number of patients in isolation (10,134). The estimated total is 50,440, in a population of about 48 million people, or an incidence rate of 1.1 per thousand. The author had estimated a total of 24,000 in 1924, and 40,000 in 1933. These figures he compares with markedly lower ones in the censuses of corresponding years,

which he believes to be erroneous. Statistical estimates of leprosy in other countries are given for comparison. In each State there are at least two leprosy institutions. [A tabulation of cases by States, corrected by the author, and a map showing the distribution of leprosy institutions, are reproduced in the news section of this issue.] —M. B. L.

ALEIXO, J. A lepra no Municipio de Contagem. [Leprosy in the Municipality of Contagem.] *Brasil-med.* 51 (1937) 265-267.

In 1931 there were only 19 lepers registered in Contagem, an index of 2.1. In the Colonia Santa Isabela, which began to function in January, 1932, 40 were admitted and 12 others examined. In five years (1931-1936) only 4 new cases were registered, but it cannot be said that leprosy in Contagem is benign, because infected persons left the municipality and turned up elsewhere, principally in Bello Horizonte. The fact that 33 of the patients passed unnoticed in the census of 1931 limits the value of the statistics, and leads to the belief that the number in confinement is below the actual number. The same is true for a place very near the capital, where lepers frequently go for consultation.—[From author's summary.]

SAETTELE, R. Untersuchungen an deutschstämmigen Schulkindern im Staate Espirito Santo in Brasilien und kurze Erörterung der Haupterkrankungen dieser Volksgruppe. [Investigation of school children of German origin in Espirito Santo.] *Arch. Schiffs- u. Trop.-Hyg.* 40 (1936) 495-502.

The author states that only one case of leprosy was known among the Germans investigated in Brazil, that person being a German-Swiss who had come to the country forty years before. With regard to this disease, as with yellow fever, the Germans are more fortunate than the Brazilians of the region, among whom it is not uncommon. —H. W. W.

CANESSA, J. F. [Some aspects of the leprosy problem.] *Rev. Uruguay Dermat. y Syphil.* 1 (1936) No. 3.

The author reviews from the literature a number of aspects of the leprosy problem, including attempts to transfer the infection experimentally from man to man (with a statement ascribed to Rogers that there was superinfection in 0.43% of 700 cases studied), the evidence for contagiosity, familial infection and heredity. He advises permitting marriage between lepers and nonlepers since infection would not be more common than if they lived together illegitimately.—[From abstract in *Urol. & Cut. Rev.* 41 (1937) 216.]

MIYAMOTO, M. Statische Beobachtungen über die Lepra in Hokkaido. [Statistical observations on leprosy in Hokkaido.] *La Lepro* 7 (1936) 55 (abstract section).

Statistical data on leprosy in Hokkaido in the ten years from 1923 to 1932 are presented. The incidence is the lowest in Japan. The number of new cases per year, 91 to 197 (average 135) has not decreased. No lepers are found in the Ainu race. The nervous form predominates (55%), followed by the nodular, macular and mixed forms. The author believes that drinking-water may play an important role in the dissemination of the disease.—[From author's abstract.]

COCHRANE, R. G. Prevention of leprosy with special reference to children. *Jour. Christian Med. Assoc. India, Burma and Ceylon* (1936) July.

One result of the campaign that has been carried on in India in recent years has been an awakening of interest in the education of the people regarding leprosy, and there is danger that the realization of the fact that treatment is not all that it was thought to be may engender an attitude of despair. Attention should now be concentrated on the preventive aspect of the problem. Institutional segregation of all open cases is an impossibility in India, though such institutions are necessary and may be the centers for other activities. The only alternative is gradually to educate the villager to isolate his own lepers. The possibilities of this are discussed, together with other measures that should be taken. The "preventive unit," which when one can be established should serve as a model for the community and a center for epidemiological study, is discussed particularly. —H. W. W.

HUIZENGA, L. S. An ancient and still baffling disease. Report of the Jukao Leper Clinic for 1936. *Leper Quart.* 9 (1937) 30-38.

The Jukao clinic is situated in one of the six recognized leprosy areas in China, where there are not less than 5,000 cases, 2 per thousand of the population. In four years 697 cases have been accepted for treatment. The age distribution shows no marked peculiarity, but the male:female ratio is 3.3:1. Most of the cases are neural. The average attendance of the 268 patients who came for treatment during the year was but around 13 visits per patient. Few patients show marked improvement in the first year of treatment, and it is difficult to get patients to come for more than that time unless they do improve. About 30% show decided improvement after two years, and a few patients have become symptom-free. It is pointed out that without a hostel where patients from a distance can stay one clinic cannot supply a large area, but subclinics radiating from the central one would greatly lessen this difficulty. —H. W. W.

BADGER, L. F. (Studies at the Leprosy Investigation Station, Honolulu.) *Ann. Rep., Surg. Gen., U. S. P.H.S., 1936.* Washington, 1936, pp. 25-26.

(1) The studies have dealt mainly with the relation of the state of nutrition and the susceptibility to and progress of the disease in rat leprosy. The incubation period can be shortened by vitamin B₁ depletion before inoculation, and infection can be produced more frequently, with organisms present in greater numbers, in depleted than in normal rats. Similar results were observed after intraperitoneal inoculation. In an experiment still in progress, organisms of rat leprosy were placed on a culture medium and after four weeks (during which time no growth was evident) they were scraped off and inoculated into rats on a normal diet; four weeks later one-half of these rats were placed on a diet free of vitamin B₁. Eight weeks after that 45% of the deficient group had palpable lesions, but none of the other group. Other experiments indicated that in rats deficient in both B₁ and B₂ the incubation period is shorter than in those deficient in B₁ alone. (2) Attempts have been made to establish leprosy in animals other than the usual laboratory species, and in one of them promising results have been obtained. (3) Natural rat leprosy was found in the Hawaiian Islands for the first time. (4) Attempts have been made to cultivate the organisms of human and rat leprosy, and cultural studies of diphtheroids that have frequently been isolated from human leprosy have been in progress. —H. W. W.

LAMPE, P. H. J. "Het Surinaamsche Treefgeloof." Een volksgeloof, be-

troffende het ontstaan van de melaatscheid. [A tribal belief in Surinam concerning the origin of leprosy.] Meded. Dienst Volksgez. Nederlandsch-Indië 25 (1936) 80-88.

It is the popular belief in Surinam that leprosy can occur only if the body has become susceptible through continuously partaking of certain food substances (*trafe*) that favour its development. Some believe that the disease is of spontaneous origin, others that it must have occurred previously within their own family, and others that it results from transgression of the *trafe* prohibition. Various kinds of *trafe* are recognized, a peculiar form being the so-called "father's *trafe*," transmitted by the father to his children and prevailing from birth. The principal *trafes* are beef, pork, onions, salt, fish, unscaled fish, tomatoes and okra. The word "trafe" is of Jewish origin, and its concept comes from Africa. The belief in "trafe" in its narrower sense is confined to Surinam which, in the 17th and 18th centuries, was an influential Jewish center such as in those days existed nowhere else in the new world.—[From author's summary.]

SITANALA, U. Tradition und Gefuehlsleben. [Tradition and sentiment.] Meded. Dienst Volksgez. Nederlandsch-Indië 25 (1936) 89-94.

Many beliefs and sayings about leprosy that are common in the native population of the Netherlands Indies are related, and a plea is made for considering the leper as a human being and for taking account of his traditions in antileprosy work.—[From author's summary.]

LAMBORN, W. A. The haematophagous fly *Musca sorbens*, Wied., in relation to the transmission of leprosy. Jour. Trop. Med. & Hyg. 40 (1937) 37-42.

The absence of previous contact with a leper in large proportions of cases studied by various authors, and the possibility of transmission by insect bites, serves as the starting point in the author's study on the possible role in that connection of the blood-sucking fly, *M. sorbens*. The studies made on the common house fly (*M. domestica*) are reviewed. In his opinion *M. sorbens* may be of importance because of its world-wide distribution, especially in hot, humid places, and its feeding habits, of which he gives an account. These flies depend more than the domestic ones on blood and exudates of mammals, and they work so delicately that their presence on the skin and their feeding from a sore may be unnoticed. The author reports positive findings in his bacteriological studies of their excreta after feeding on a leprosy ulcer, and describes the mechanism whereby these flies deposit leprosy bacilli they have taken up. Evidence is given which is held to indicate that the vitality of the organism is not impaired by its sojourn in the fly. —M. B. L.

MARCHOUX, E. and CHORINE, V. La sensibilité au virus lépreux n'est pas plus grande chez les jeunes que chez les adultes. [The susceptibility of children to leprosy.] Ann. Inst. Pasteur 57 (1936) 583-596.

The authors hold that children are not more susceptible to leprosy than adults, but owing to inexperience and other circumstances of childhood are more likely to be exposed to infection. This opinion is based on the analogy of rat leprosy. Adult rats are as easily infected as new-born rats by contact with leprosy animals that have bacillus-bearing ulcers. The infection apparently goes through the conjunctiva, attacking first Harder's gland at the

inner canthus and afterwards the adjacent sublingual and submaxillary lymph glands. When rats are inoculated intradermally the speed and severity of the infection increases with the dose of organisms and the size of the area inoculated, and it is concluded that the apparently greater susceptibility of children to Hansen's organism is due to their greater exposure, and the greater likelihood of infection entering over a large skin surface because of their close contact, naked, with their infectious parents.—[From editorial in *The Lancet*, January 16, 1937.]

HOPPE, F., JR. Considerações sobre exames bacteriológicos na lepra. [The bacteriologic examination.] *Brasil-med.* 51 (1937) 295 (abstract).

The author summarizes his experience in the examination of skin lesions for the Hansen bacillus, which is most frequent in the lepromata and rarest in tuberculoid and achromic lesions. He recommends multiple parallel superficial scarification, avoiding excess of blood. The time of washing the preparation with water after decolorizing with nitric acid should be prolonged (2 to 3 minutes) to avoid false results.—[From abstract.]

POOMAN, A. Eine einfache Method zur Färbung von Lepra-erreger und Tuberkelbazillen. [A simple method of staining the leprosy and tubercle bacilli.] *Arch. Schiffs- u. Tropen-Hyg.* 40 (1936) 112.

The author believes that alcohol favors the staining of these bacilli by carbol-fuchsin; a smear stained for only a few seconds can by suitable manipulation of the differentiating substance (acid or alcohol) be made quite red by absorption of dye from around it. For staining he recommends the following technique: stain with carbol-fuchsin, without heating, one minute; wash very rapidly and lightly with water; methylene blue, 1% alcoholic solution, twenty seconds.—[From abstract in *Bull. Inst. Pasteur* 34 (1936) 692.]

BIER, O. Sorologia da lepra. [Serology of leprosy.] *Rev. Brasileira Leprol.* 4 (1936) 211-222.

The lack of a culture of the leprosy bacillus, the coexistence of syphilis, and the lability of the serum are the principal difficulties in obtaining a specific serologic reaction that is sufficiently sensitive for the diagnosis of leprosy. The author recognizes in leprosy both agglutinins and complement fixators (amboceptors). The former are revealed by the Rubino reaction, which is highly specific but not highly sensitive. The latter cause the positive Eitner and Wassermann reactions, and specific complement fixation when cultures of acid-fast bacilli are used as antigens. In this category is the perfected one of Witebsky, Klingenstein and Kuhn, with which the author obtained 94% positives in nodular, 94% in mixed, and 70% in neural leprosy. Leishmaniasis, however, gives 70% positives. Experience with absorption with formalinized red cells shows that this procedure does not cause either the Wassermann or Witebsky reaction to become negative, showing that the agglutinins which cause the positive Rubino reaction are not responsible for the others.—[From abstract in *Ann. Paulista Med. Cir.* 31 (1936) 582].

BIER, O. AND PLANET, N. Aplicação do processo de Witebsky ao preparo de um antígeno para a fixação do complemento com streptothrix leproides. [Preparation of a streptothrix leproides antigen for complement fixation by the Witebsky method.] *Ann. Paulista Med. Cir.* 32 (1936) 575 (abstract).

Chemical fractionation of the culture of *Streptothrix leproides*, Deyke, according to the technique of Witebsky and associates, shows that the fraction responsible for the complement fixation in leprosy is the one that contains the specific lipid. The sensitivity and the specificity of the streptothrix antigen, as prepared, parallel those of the tubercle bacillus antigen, although the fixation with the leper serum may not be so intense. With improvement of the technique, giving an antigen with greater fixing power and less anti-complementary effect, *S. leproides* will serve for the preparation of an antigen for leprosy with the same advantages as the tubercle antigen of Witebsky, Klingenstein and Kuhn.—[From abstract.]

FISCHER, I. A. De reactie van Takata-Ara bij lepra. [The Takata-Ara reaction in leprosy.] Meded. Dienst Volksgez. Nederlandsch-Indië 25 (1936) 10-13.

Investigating the usefulness of various nonspecific reactions in leprosy, the author found the one of Takata to be positive and of some value in connection with differential diagnosis and as a control in treatment, especially if it is used in combination with the red-cell sedimentation and formalin-serum tests.—[From author's summary.]

POSTMUS, A. S. De Reactie van Takata-Ara in verband met het epidemiologisch lepra-onderzoek in de Karolanden. (Voorloopige mededeeling). [The Takata-Ara reaction in relation to the epidemiological investigation in the Karo regions.] Geneesk. Tijdschr. Nederlandsch-Indië 76 (1936) 2154-2163.

In total 1,898 individuals were examined for leprosy, cutaneous diseases, eye affections, avitaminoses, and swelling of the lymphatic glands. The blood and the nasal secretion were examined in reference to leprosy bacilli, and the Wassermann, Kahn, serum-formalin, and Takata reactions were applied. The investigation is not yet concluded, but there are indications that the last-named reaction should not be neglected in the epidemiological investigation of leprosy, though further research will be required to determine its exact value.—[From author's summary.]

HASHIMOTO, T., KOMATSU, H., AND NITTO, S. Ueber die modifizierte Takadasche Reaction im leprösen Blut. [The modified Takada reaction in leprosy.] La Lepro 7 (1936) 11 (abstract section).

The Takada sublimate-fuchsin reaction, introduced in 1925 and modified later by Jezler, was applied by the authors first to sera of nonleprosy persons. Of 10 healthy ones, none was positive; of 17 with nonpulmonary tuberculosis, 18% positive; of 56 syphilitic, 9% positive; of 150 with miscellaneous skin diseases, 20% positive. Applying it to 54 ambulant lepers, 39% proved positive, while of 60 more advanced cases in leprosia 92% were positive. In general the obvious nodular cases gave positive, and the slight macular or nervous ones negative reactions. There was a relation between this reaction and the red-cell sedimentation. Changes in the protein content of the blood and in the liver have an important part in the production of positive reactions.—[From authors' abstract.]

YANO, M. AND ASANO, S. Ueber die Takadasche Reaction bei Lepraseren. [The Takada reaction in leprosy.] La Lepro 7 (1936) 13 (abstract supplement).

The Takada reaction having been but little studied in leprosy, the authors applied Jezler's modification of it in 154 of their ambulant cases. In parallel they also used the red-cell sedimentation test, certain serum reactions for syphilis, and the tuberculin reaction. The Takada reaction was positive in 67% of the cases—in 50% of the nervous, 65% of the maculo-nervous, 82% of the nodular, and all of the mixed cases tested. It did not always parallel the red-cell sedimentation, and had no relation to the syphilitic and tuberculin reactions.—[From author's abstract.]

SAKAKIBARA, I. Ueber den Hautzucker der Lepra. [Skin sugar in leprosy.] *La Lepro* 7 (1936) 57 (abstract supplement).

Changes in the nervous system and the skin being the principal symptoms of leprosy, the author thought it of interest to ascertain the sugar content of the skin, the method of doing which he gives. In general the values obtained were higher than normal, the average being 0.13–0.14%. There was no special relationship between the findings and the degree of the disease. There was, however, a definite relation to the disturbance of sensation; with skin with normal sensation the values were normal, but they increased according to the degree of sensory changes.—[From author's abstract.]

SAKAKIBARA, I. Blutzuckergehalt des Lepra-Serums. [Blood sugar in leprosy.] *La Lepro* 7 (1936) 29 (abstract supplement).

The author, using the Hagedorn-Jensen method, found that in several cases the blood sugar was higher than normal, and in medium and slight cases lower; there was no difference between men and women. The figures given are tabulated as follows:

Type	Normal	High	Low
Nodular (81 cases).....	54 (55%)	12 (15%)	24 (30%)
Nervous (34 cases).....	17 (50%)	9 (26%)	8 (23%)
Macular (24 cases).....	13 (54%)	5 (20%)	5 (25%)

—[From author's abstract.]

SAKAKIBARA, I. Der Glutathion-gehalt des Leprablutes. [Glutathion content of the blood in leprosy.] *La Lepro* 7 (1936) 39 (abstract supplement.)

In a study of metabolic anomalies in leprosy the author ascertained the glutathion content of the blood by the method of Gabbe. The values were found to be less than normal, and lowest in the nodular type; also lower in advanced cases than in others. There was no relation between the findings and the duration of the disease. In lepra reaction of both kinds (erythema nodosum leprosum and akuter Schub), and in neuralgic attacks, it was decreased, but it increased with the subsidence of the reaction. Vasectomy had no influence on the glutathion values.—[From author's abstract.]

ITAKURA, T. On chemical elements in hard tissue of the teeth of lepers. *La Lepro* 7 (1936) 53 (abstract section).

The author found that in the teeth of Korean lepers calcium and fluorine are low and, to the contrary, magnesium and phosphorus high in comparison with the teeth of normal persons of the same race. The variations are almost parallel in the enamel and dentine. He relates the calcium decrease with the fact that lepers have more dental caries than healthy people.—[From author's abstract.]

ANDO, N. Klinische, bacteriologische und serologische Studien über Lepra. [Clinical, bacteriological and serological studies on leprosy.] Fukuoka Ikwadaigaku Zasshi 14 (1921) No. 1.

The author concluded after the study of 146 cases of leprosy and 273 histological specimens that the usual division of the disease into two or three forms is not appropriate and too gross. The nomenclature should take the individual symptoms into account accurately, in a way analogous to the nomenclature of the exanthemata of syphilis and tuberculosis. On morphological grounds, he recognized 8 kinds or species of leprosy bacilli with 35 subdivisions, and 4 groups on the grounds of arrangement. With the help of special staining methods he studied the leprosy manifestations with regard to the morphology, arrangement and numbers of bacilli present. —M. OTA

CHIUMA, M. AND GUJO, K. [A histological study of leprosy tissues by means of vital staining.] Osaka Igaku-kwai Zasshi 20 (1921) 58.

The authors injected sodium carmine solution and India ink directly into leprosy nodules and demonstrated thereby that the epithelioid, foamy and giant cells for the most part originate from histiocytes, since they can store very well particles of the injected materials in their cell bodies. —M. OTA

KOMATSU, S. Dermatologische Untersuchungen über die Kapillarschlinge in der leprosy Haut. [Investigation of the capillary network in leprosy skin.] Japanese Jour. Dermat. & Urol. 41 (1937) 13 (abstract).

The author made a dermatoscopic study of the skin vessels in 45 cases of leprosy, controlled with 110 normal people. In the skin of leprosy, even in portions that are to be considered as normal, the cutaneous vessels are widened here and there. In hypoesthetic areas most of them are widened and tortuous, but more so in the macular and nodular lesions. Though the caliber of the vessels increases, in the order indicated, their number is hardly increased. Their reactions to different stimuli (e.g., heat, cold, mechanical stimuli and intracutaneous injection of adrenalin) are not abnormal in parts that are apparently intact, but in the leprosy parts the reactions are partly positive, partly negative. The absence of reaction is considered to be a result of the degeneration of the nerves of the corresponding regions. The reaction of the vessels to the intracutaneous injection of histamin is remarkable, with hyperemia of the injected portion independent of the degree of the leprosy changes.—[From abstract.]

SAKURAI, H. An experimental study on the penetration of leprosy bacilli through the skin. (II report) La Lepro 7 (1936) 9 (abstract supplement).

Using three mice, the hair was cut over a small area and a suspension of leprosy nodules was rubbed on for 30 minutes. In sections from all three of them several leprosy bacilli were found, especially numerous close to the hair follicle. From three rabbits the hair was plucked and the exposed areas similarly treated. Again bacilli were found in sections from all, but in this instance only one bacillus was found in the injured follicles.—[From author's abstract.]

SAKURAI, H. An experimental study on the penetration of leprosy bacilli through the conjunctiva. La Lepro 7 (1936) 47 (abstract section).

Following up previous observations on the penetration of the skin of experimental animals by the leprosy bacillus, the author instilled a bacillary emulsion into the conjunctival sacs of five rabbits, for 30 minutes; the lachrymal duct of one had been destroyed by cauterization. In one instance 3 bacilli were found in 347 sections; in the second, 11 bacilli in 155 sections; in a third, 7 bacilli in 382 sections; and in the fourth (closed duct), 5 bacilli in 103 sections.—[From author's abstract.]

WANSER, R. Ueber die Eosinophilie bei Lepra. [Eosinophilia in leprosy.] Arch. Schiffs- u. Trop.-Hyg. 40 (1936) 505-508.

Out of 26 cases of leprosy studied, 11 showed eosinophilia ranging from 6 to 16%, but upon being cleared of intestinal parasites the blood returned to normal and it is concluded that the condition was not caused by leprosy itself. There was an increase of lymphocytes in about 70% of the cases but no special significance could be attached to it.—[From author's summary.]

ANDERSON, H. H., CERQUEIRA, P., ANDERSON, J. VAN D. AND PORTUGAL, H. Clinico-pathologic studies of leprosy in Brazil. American Jour. Trop. Med. 16 (1936).

The authors report special observations of the clinico-pathological status of seventy Brazilian leprosy patients previous to therapeutic treatment. The extent of leprosy invasion of the tissues and viscera and the degree of infection were first determined. It was found after five years that more than half the body surface generally was affected. The nutritional condition improved when the patients were given beef instead of pork, which they prefer, and a more generally adequate diet. Other abnormalities (usually intestinal worms, with anemia, and nephritis) are treated with, usually, beneficial results. Chemically, leprosy blood is high in lipids and fatty acids, but low in cholesterol. Iodine saturation is low in early cases, and high in advanced ones. The authors state that treatment with chaulmoogric (unsaturated) acids does not seem to alter these chemical findings appreciably. They stress the proper appreciation of the disease versus the drug hazard; in a chronic disease such as leprosy, with a natural tendency to spontaneous arrest, the patients must first be treated and then the disease.—[From abstract in *Jour. Trop. Med. & Hyg.* 40 (1937) 74-75.]

DUBOIS, A. AND DUPONT. Formes anatomo-cliniques et classification de la lèpre. [Anatomo-clinical forms and classification of leprosy.] Bull. Inst. Roy. Colon. Belge 7 (1936) 549-572.

The authors discuss the subject indicated on the basis of material observed in the Congo Red Cross leprosarium, at Pawa, in the Belgian Congo. They comment especially on the classification of the Leonard Wood Memorial conference (Manila, 1931), which they admit is good though not particularly better than the old one. They think that its criteria are too unilateral, and partially inexact. In effect the definition adopted for the cutaneous class leads to the inclusion in that class of the tuberculoid form, whereas in reality it belongs to neural leprosy. The authors insist that all of the principal criteria of classification should be utilized, and that special importance should be given the bacteriological examination of the skin. They discuss briefly the histology of the dermal lesions of leprosy as found in the material collected at Pawa.—[From abstract in *Bruxelles Med.* Dec. 13, 1936.]

RODRIGUES DE SOUZA, A. *Lepra mixta com lesões tuberculoides.* [Mixed leprosy with tuberculoid lesions.] *Rev. Brasileira Leprol.* 4 (1936) 359-365.

The author discusses two cases of mixed leprosy with tuberculoid lesions proven histologically. Clinically it was difficult to decide whether the manifestations were those of the tuberculoid or the nodular form. He recapitulates the present views on immunology and considers the allergic basis of tuberculoid leprosy. Photomicrographs of the two cases observed are presented.—[From abstract in *Ann. Paulistas Med. e Cir.* 31 (1936) 698.]

RAMOS E SILVA, J. *Lepromas com aspecto objetivo semelhante ao de lupomas.* [Leproma with similar objective appearance to lupoma.] *Rev. Brasileira Leprol.* 4 (1936) 435-439. (Summary in French.)

The author presents, with photographs and colored drawings, a case of leprosy in which certain lesions had the appearance of the lupoma, even when examined by vitropressure, but they were not of that nature or any other type of tuberculoid infiltration. To the contrary, they were typical lepromata, with Virchow cells and abundant bacilli. Translucency on vitropressure is therefore not pathognomonic for tuberculous lupus; it is due, in leprosy as in tuberculosis, to the absence or marked diminution in the granuloma of elastic and connective tissue fibers.—[From author's summary.]

RABELLO, JR. *Os tipos estruturales da lepra tuberculoides.* [The structural types of tuberculoid leprosy.] *Rev. Brasileira Leprol.* 5 (1937) 1-28.

The author distinguishes the macular from the tuberculoid forms of leprosy, the former comprising the erythematous-dyschromic lesions and the latter the more or less infiltrated and polymorphic ones. The obviousness of the intimate relationship of the macular and tuberculoid forms suggests the existence of transitory changes from one to the other, which is seen microscopically but not clinically. He divides tuberculoid leprosy, histologically, into four types: (1) pretuberculoid (in common with the tuberculoid and macular form), (2) sarcoid, (3) lupoid or follicular, (4) colliquative (the so-called "nerve abscess"). Photomicrographs are presented to illustrate them.

—M. B. L.

COCHRANE, R. G. *Early leprosy.* *Jour. Christian Med. Assoc. India, Burma and Ceylon.* (1936) September.

With recent increase in knowledge of the clinical development of leprosy the approach to the subject has changed radically. It is realized that leprosy is not always as serious a matter as has been supposed, referring particularly to the "early" cases. The matter of diagnosis is discussed in some detail, with particular mention of the so-called diffuse type seen in India, in which the skin lesions ordinarily expected of cutaneous-type cases are not seen. Early neural leprosy in adults (in the meaning applied in this connection, which apparently refers to the "inactive and quiescent" cases), is a mild condition, though in children the ultimate prognosis is not always so good. Patients with such lesions should not be dealt with like those with open lesions, but with due discretion and consideration. —H. W. W.

DE CASTRO CERQUEIRA, G. *O sentido da dor nos doentes de lepra.* [The pain sensibility in lepers.] *Rev. Brasileira Leprol.* 4 (1936) 479-488.

After reviewing the physiopathology of the phenomenon of pain, the author reports on his investigation of the pain sensibility in leprosy by the faradic current and compares the findings with those obtained by the use of formic acid and by the usual method of pricking. Analgesia to the faradic current, when present in a zone analgesic to prick, is always less extensive than the latter and within its limits; it occurs later, and when present indicates insensibility to any external stimulus. Formic acid, recommended by Juster for distinguishing real from feigned anesthesia, has no value in leprosy because in regions that are analgesic, even to the faradic current, acute pain is provoked by the acid when used intradermally.—[From abstract in *Ann. Paulistas Med. Cir.* 32 (1936) 582.]

LEFROU AND DES ESSARTS, Q. Contribution au diagnostic des faux lépreux. Les macules dyschromiques d'épidermomycose. [Contribution to the diagnosis of leprosy; the dyschromic macules of epidermomycosis.] *Bull. Soc. Path. exot.* 29 (1936) 743.

In colonial practice, it appears, clinical examination alone is usually insufficient to permit making a differential diagnosis between the dyschromias due to leprosy and those caused by epidermomycoses. It is necessary to fall back on laboratory procedures, and among them the histological examination should be given particular attention.—[From abstract in *Bull. Off. Internat. Hyg. Publ.* 29 (1937) 1020.]

ALBIXO, A. Methodos de exame do partador de lepra. [Methods of examination in leprosy.] *Brasil-med.* 51 (1937) 121-135.

This article was the inaugural lecture of a course on leprology, given at the central dispensary of the section of leprosy control of the State of Minas Geraes in 1934.

—H. W. W.

MENDES, E. AND GRIECO, V. Interpretação da reacção leprotica suas relações com a parallergia. [Interpretation of lepra reaction; its relationship to parallergia.] *Rev. Brasileira Leprol.* 4 (1936). Special No., 1-25. (Summary in French, English and German.)

This article is a general discussion of the subject, in which the authors arrive at an interpretation of the phenomenon. Leprosy, by the characteristics of its evolution, symptomatology and histopathology, obeys the laws of allergy, or better of pathergy (Rössle). These phenomena are best known in lepra reaction, which sometimes can be explained satisfactorily by allergy in the strict sense of von Pirquet—sensitization of the allergic body by the specific agent. More frequently, however, it can only be interpreted by correlated phenomena as parallergy. By this, in accord with Moro and Keller, is meant a modification of the mode of reaction of an organism in a state of allergy, in relation to nonspecific agents (parallergens), of protein nature or otherwise, which differ from the primary antigen which induced the specific allergy. Nodular and mixed cases are most liable to reactions, there being a great disequilibrium between the quantity of the antigen (bacilli), which is large, and of antibodies, which is relatively small. Only by parallergy can be explained the production of lepra reaction by such diverse causes as various therapeutic agents, foods, intercurrent alimentary infections and some physiological states (menstruation, puerperium). In the last-named conditions it is apparent that hormones act as nonspecific agents (paral-

lergens), causing reactions or oscillations of allergy. The cases in which the cause of the reaction can not be demonstrated can also be explained by parallergy, the parallergens perhaps being in relation with focal infections such as appendicitis, carious teeth, cholecystitis, tonsillitis, etc., the existence of which may not be noticed clinically.—[From author's summary and abstract in *Brasil-med.* 60 (1937) 295.]

DE CARVALHO, J. C. Reacção leprotica e allergia. [Lepra fever and allergy.] *Rev. Brasileira Leprol.* 4 (1936) Special No. 27-35.

The author gives priority of description of lepra fever to Danielssen, Boeck and Hansen. The condition may appear either during or without the influence of any treatment. He describes the principal symptoms of the reaction and the erysipeloid symptoms. Stein's classification of the manifestations is in accordance with his own observations and he divides reactions into acute, subacute and hyperacute, and strong, medium and weak. In his experience the frequency was from 10 to 15% of the cases. He speaks of bacillemia during reaction, but does not say how frequent it was. The medium and weak reactions are beneficial to the patients, and even in some cases of strong and prolonged reaction the patients did not become worse off. Lepra fever is an allergic phenomenon, sometimes anergic. In 46 patients with reaction the Mitsuda skin test gave positive results in different degrees in 36, or 78%. The author, considering the results of this test, believes that lepra fever is an allergic phase of the disease. —H. C. DE SOUZA-ARAÚJO

DE SOUZA-LIMA, L. Estudos sobre a reacção leprotica. [Studies on lepra fever.] *Rev. Brasileira Leprol.* 4 (1936) Special No. 37-48.

The writer's conclusions are as follows: (1) In macular cases, lepra fever is generally harmful; it produces new permanent lesions and sometimes attacks the nerves, resulting in deformities. (2) In nodular cases it is generally beneficial, though it affects the general health; there is destruction of bacilli with disappearance of nodules and consequent improvement of the skin condition. During the Herxheimer type of reaction it is imperative to discontinue the antileprosy treatment until the reactional phenomena subside. In the true Herxheimer reaction in syphilis, intensification of specific treatment is the rule. —H. C. DE SOUZA-ARAÚJO

BEHELLI, L. M. AND SAMPAIO, J. DE C. A pesquisa do bacillo de Hansen nas lesões cutaneas da reacção leprotica. [The leprosy bacillus in the skin lesions in lepra fever.] *Rev. Brasileira Leprol.* 4 (1936) special No. 79-93.

The writers conclude: (1) *Mycobacterium leprae* in skin lesions located where there were previous lesions, 100% positive (22 cases); in reacting foci in healthy skin, 66% positive (6 in 9). (2) The height of the positivity index will be in relation to the number of cases with rashes in skin previously attacked by leprosy. (3) Among the bacilli found in the lesions the granular form predominated. —H. C. DE SOUZA-ARAÚJO

BEHELLI, L. M. O exame palpatorio do figado e do baço nos doentes com reacção leprotica. [Liver and spleen during lepra fever.] *Rev. Brasileira Leprol.* 4 (1936) Special No. 95-108.

Out of 21 patients examined before, during and after lepra fever, 13 had enlarged spleens and 9 enlarged livers. In 5 of them both organs were in-

creased. In another 22 patients, examined only during the exanthem of lepra fever, the spleen was enlarged in 19 and the liver in 15. Of the total of 43 patients, 32 (74%) had enlargement of the spleen and 24 (56%) of the liver. The author does not speak about the influence of malaria in his cases, though it is frequently associated with leprosy in São Paulo and the northern part of Brazil. He believes that the hypertrophy is due to the fixation of bacilli resulting from bacillemia during lepra fever. —H. C. DE SOUZA-ARAÚJO

DE SOUZA LIMA, L., DE BARROS, M. AND SCHUJMAN, S. Influencia da reação leptotica na evolução da lepra cutanea. [The influence of lepra reaction in the evolution of cutaneous leprosy.] *Rev. Brasileira Leprol.* 4 (1936) Special No., 129-131.

In a joint re-examination of the 300 patients in the P. Bento leprosarium, in Brazil, the attention of the authors was drawn to the apparent influence of lepra reaction on cutaneous leprosy. They refer to the complete syndrome, with prolonged temperature above 39°C., and frequent and repeated eruptions of reaction skin lesions. Of 33 cases that had been under observation for at least 1½ years it was found that 12 were improved, 7 unchanged and 14 worse; of the improved and stationary cases all had had reactions, while all but four of those that had gotten worse had not had them. Thus, of the 23 reaction cases, that condition had proved beneficial in 19, or 83%, resulting either in improvement or cessation of progress of the disease. Of the four reaction cases that had become worse, three had had but one or two reactions, whereas all the improved cases had had not less than four reactions. An examination of the eye conditions was made independently by a specialist whose report, when correlated with data on reactions, showed that of the 10 patients without reaction the eye lesions of 8 had become worse and 2 were unchanged, while of 21 with reaction 13 were unchanged and 8 were worse. It is concluded that repeated, complete lepra reaction is beneficial in cutaneous leprosy, but it is recognized that the matter should be investigated elsewhere.—[From translation by Dr. M. B. Lara of original article.]

IKEJIRI, S. Psychological study on lepers. I. Mental state of lepers. *La Lepro* 7 (1936) 15 (abstract supplement).

The author has applied a psychological test devised by Awaji to 147 persons with leprosy, and concludes that on the whole there is a slight tendency to introspection, though not beyond the normal curve. This tendency is a little greater in nodular than in neural cases, in mild than in serious cases, in persons attacked before the age of ten than in others, during the first two years of the disease than later, especially when they enter an institution during that period; it is most marked in the blind.—[From author's abstract.]

NAZAROV, I. I. [Paralytic lagophthalmos in tuberculoid leprosy.] *Sovietskii Viest. Ophth.* 9 (1936) 306.

A report of a case of the tuberculoid type of leprosy, with marked infiltration, sharp demarcation, diminished sensitivity of the diseased skin, unilateral paralysis of the lids, and lagophthalmos. There was no atrophy, contracture, trophic disturbance, or inflammatory involvement of the eyeball, in spite of the duration of the condition. The diagnosis was made histologically.—[Abstract from *American Jour. Ophthal.* 20 (1937) 337.]

TISSI, E. Le alterazioni della ghiandola mammaria maschile nella lebbra. [Changes in the male breast in leprosy.] *Dermosifil.* 154 (1936) 81-92.

The author describes a special form of nodular mastitis with subacute onset and benign course, observed in nodular and mixed cases of leprosy which were treated with gold and chaulmoogra oil. He describes the lesions of the testicles found in two cases, with the classical picture of simple atrophy; in two other cases there was bilateral leprosy epididymitis. Though not excluding a possible toxic action of the medicines used, he is inclined to believe the breast condition to be due to local effect of the Hansen bacillus.—[From abstract in *Rev. Brasileira Leprol.* 4 (1936) 420.]

BECHELLI, L. M. Frequencia da esplenomegalia leprotica. [Frequency of leprotic splenomegaly.] *Rev. Brasileira Leprol.* 4 (1936) 203-209.

In this second article on the subject [see *THE JOURNAL* 4 (1936) 547] the author reports that of the 200 cases of splenomegaly found among 476 leprosy patients, only 11 could be considered from clinical and laboratory evidence to be of leprotic nature. However, from the great predominance of involvement of the spleen in cutaneous and mixed forms of leprosy observed in his clinical and anatomo-pathological studies he believes that the diagnosis of leprotic splenomegaly was justified except in 24 cases in which the enlargement was probably due to malaria. He states that leprotic splenomegaly was observed in 39% of the cases (176 out of 452 patients), most frequently in the mixed and cutaneous forms (46 and 44%); though it also occurs in generalized neural leprosy, it is less frequent (15%). —M. B. L.

MOLINA, R. J. Sobre un caso de lepra anestésica a predominio de pares craneales. [A case of anesthetic leprosy with prevalence of cranial nerve involvement.] *Rev. Med. Cordoba* 24 (1936) 666-673.

Observation of a case with uncommon localization of manifestations: bilateral anesthesia of the territory of the three branches of the trigeminal, the corneal conjunctiva, the nasal fossae, the buccal cavity, soft palate, pharynx, larynx and trachea, the posterior and right lateral part of the head, and the right deltoid region (skin normal) and the thumbs and index fingers. The anesthesia everywhere was total, with loss of touch, thermal and pain sensibility. There was paralysis of the right hemidiaphragm. The more probable diagnoses, including cerebral tumor, are differentiated. After administration of potassium iodide bacilli were found in the nasal mucosa.—[From abstract in *Rev. Brasileira Leprol.* 4 (1936) 513.]

OSMAN, M. Un cas de lèpre. [A case of leprosy.] *Bull. Soc. Turque méd.* (1936) 256-257.

The patient, a prisoner in whom the disease appeared in the fourth year of his imprisonment, was thought by the first examiner to have syringomyelia, which is extremely rare in Turkey. As for lepers, it is stated that in spite of careful investigation the number known is hardly 300. They are collected in a building of the Bakirköy asylum, but it is hoped soon to have an agricultural colony for them.—[From abstract in *Ann. Dermat. et Syphil.* 7 (1936) 985.]

SAKAKIBARA, I. Ueber die Vasektomie bei Leprakranken. [Vasectomy in lepers.] *La Lepro* 7 (1936) 25 (abstract).

Vasectomy can be made an important factor in the prophylaxis of leprosy. The author reports observations on the sexual and general condition

of 33 patients on whom this operation had been performed. In 22 of them no sexual disturbance was detectable; the remaining patients, who were sexually disturbed, showed also exacerbation of the leprosy symptoms. Similar disturbances were seen in 23 cases that were not operated upon but in which the disease underwent exacerbation. It may be therefore assumed that the cause of the sexual disturbance does not lie in the operation, which is recommended from the standpoint of eugenics and prophylaxis of leprosy.—[From author's abstract.]

SAKAKIBARA, I. Ueber die Hauttransplantation bei Leprakranken. [Skin transplantation in lepers.] *La Lepro* 7 (1936) 23 (abstract section).

The measures used by many workers in dealing with *ulcus leprosum* have given unsatisfactory results. The author has applied skin transplantation for the condition (details given), with good results in 30 out of 35 cases so treated. Results with plantar ulcers were not as good as with ulcers of other parts. Attempts to restore lost eyebrows by plastic transplantation of scalp tissue were unsuccessful. Homeo-transplantation between individuals of the same blood type may be expected to give good results.—[From author's abstract.]

FLANDIN, C., BARANGER, P. AND RAGU, J. Essai de traitement de la lèpre par un complexe nouveau de chaulmoogra et de cholestérol, permettant l'injection intraveineuse à haute dose de dérivés chaulmoogriques. [Treatment by a new chaulmoogra-cholesterol complex, given intravenously in large doses.] *Compt. rend. Acad. Sci.* 203 (1936) 502-504.

To increase the tolerance of the organism for chaulmoogra by intravenous administration, Baranger has prepared an amine derivative which is easily given in that way. The preparation used, which can be sterilized at 115°C., contains 20 to 40 mgm. of the derivative per cc., and some cholesterol. The authors have treated 12 cases with this preparation. Tolerance was perfect when the injection was strictly intravenous and given slowly; the maximum dose was 6 to 7 cc. In three early cases the skin lesions cleared up and became bacteriologically negative. The other cases were advanced, progressing in spite of all measures; they improved greatly, the condition becoming "stabilized," and they also became negative. The authors consider this preparation to be an important advance in the treatment of the disease. —H. W. W.

PRESTES, L. AND MADEIRA, A. Sobre o emprego do chaulmoograto da thymila no tratamento de lepra. (Nota prévia.) [Thymol chaulmoograte in treatment.] *Ann. Paulistas Med. e Cir.* 32 (1936) 177 (abstract).

The literature referring to the use of thymol in the treatment of leprosy is reviewed. The authors have observed beneficial effects from its use in association with the chaulmoogra radical, and recommend it for further trial.—[From abstract.]

MONTEL, R. AND MONTEL, G. Suite de quelques observations de lépreux publiés en 1932. [Further notes on observations on leprosy published in 1932.] *Bull. Soc. Path. exot.* 29 (1936) No. 8.

In 1932 the authors published their observations on four cases of leprosy, which they had studied from the point of view of the evolution of the disease. Since that time three of these patients have been continually under observa-

tion, and the results of the treatment they have received are given. The cases were trophoneurotic and tuberculoid leprosy, and had been under observation for twenty, fourteen, and six years respectively. They were treated with injections of chaulmoogra collobiase, and all symptoms of leprosy disappeared after fourteen years in the first case, seven years in the second, and three in the third, and no new symptoms have since appeared. Many other cases have been cured with this treatment, but these three are quoted on account of their long duration.—[Abstract from *Jour. Trop. Med. & Hyg.* 40 (1937) 52.]

LEWIS, K. M. Anaphylaxis due to sodium morrhuate. *Jour. American Med. Assoc.* 107 (1936) 1298.

Attention is called to a possible danger in the use of sodium morrhuate solutions in the injection treatment of varicose veins of the lower extremities. Of the recognized localized allergic reactions to the drug, mainly urticarial rashes at the site of injection, the author has seen a goodly number. Of constitutional reaction in the form of severe anaphylaxis he has had one case, which he reports in detail, and he has seen three others. He considers this condition probably due to sensitization to some liver protein remaining in the drug, and advises care in its use with patients who have previously received it and with individuals who are subject to asthma, hay fever or other allergic phenomena. —H. W. W.

DALE, M. L. Reaction due to injection of sodium morrhuate. *Jour. American Med. Assoc.* 108 (1937) 718-719.

A case of severe reaction after injection of sodium morrhuate is reported, and differences from the one described by Lewis [see preceding abstract] are pointed out. The author thinks it probable that this condition is not an anaphylactic reaction due to some liver protein, but rather a specific reaction due to an idiosyncrasy to the sodium morrhuate itself. —H. W. W.

OCHINO, A. AND KERKAMP, Y. Le bleu de méthylène dans le traitement de la lèpre. [Methylene blue in treatment.] *Ann. Soc. belge Méd. trop.* 16 (1936) 503-506.

This treatment proved totally ineffective in the 22 cases studied. Doses beyond 30 cgm. provoked violent reactions.—[From author's summary.]

BERTACCINI, G. [Treatment of leprosy with methylene blue.] *Gior. Italiano Dermat. e Sifil.* 71 (1936) No. 4.

The author has had experience with methylene blue treatment of leprosy in 25 nodular, 2 neural and 3 mixed cases, the amounts given being large. On the whole the general health of the patients did not improve, and in some cases it became worse. The author concludes that the drug does not justify the hope that has been placed in it; its therapeutic effect is much inferior to that of others employed.—[From abstract in *Urol. & Cut. Rev.* 40 (1936) 831.]