

## 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.*

WEINDLER, F. Die Lepra im mittelalterlichen Miniaturbilde. Eine medizinisch-geschichtliche Rückschau an der Hand von sechs bisher unbekanntem Originaldarstellungen im Text. [Leprosy in miniature pictures of Middle Ages; retrospective view on history of leprosy apropos of six heretofore unknown pictures.] *Dermat. Wehnschr.* 105 (1937) 1089-1096.

Searching medieval religious works the author has discovered six hitherto unknown miniatures representing the supposed leprous sufferings of Job. In the photographs reproduced Job is seen scratching himself with a comb or a bunch of twigs, or suffering intense cephalic pain. In two of the miniatures his wife is shown protecting her nostrils. From this, and from the fact that she hands him food on the end of a stick, one gathers that a repulsive odor emanates from him, and that she fears infection. The three friends, where shown, seem mostly indifferent to the situation, but in one miniature obvious compassion is registered.—[Abstract from *British Jour. Derm. and Syph.* 50 (1938) 318.]

CAMPOS MELLO, L. Um pouco de historia da lepra no Distrito Federal. [A short history of leprosy in the Federal District (Brazil).] *Folha med.* 18 (1937) 247-249.

Leprosy did not exist among the natives of Brazil before its discovery, but was introduced by the European explorers, notably the Portuguese. The African element probably served as its disseminator. The focus in Rio de Janeiro developed rapidly, the first cases noted being in the beginning of the seventeenth century. The attention of the Crown was called to the fact but nothing was done about it (1698-1740), and one Gomes Freire provided funds for the construction of small, rough-hewn lodging in S. Cristoval (1744). Later (1763) the authorities established a hospital for lepers in the convent of the Jesuits, who had been expelled. This institution was continued for 50 years, until soldiers were lodged in the hospital and the patients were transferred to the Island of Enxadas (1817-1833). However, because of preoccupation with more serious health problems little attention was given that of leprosy, in spite of suggestions from Oswaldo Cruz and from a Commission of Leprosy Prophylaxis headed by Lutz. A campaign organized by Chagas (1920) was only partially put into effect, but some tens of patients were placed in the hospital de S. Sebastian from 1925 to 1928, when they were transferred to the newly-opened Hospital-Colonia de Curupaity. Today the official organization against leprosy in Rio de Janeiro comprises a diagnostic center, dispensaries in all districts of the city, a domiciliary visiting service by the public health nurses, and the Curupaity institution.—[From a translation by M. B. Lara of abstract in *Rev. Brasileira Leprol.* 5 (1937) 416.]

GOMEZ-CASTELLANO, P. La lèpre à Cuba. [Leprosy in Cuba.] J. Haumont, Paris, 1937.

This publication is a thesis reviewing the leprosy situation in Cuba. The time when the disease was introduced there is not known, but it seems to have made its appearance between 1750 and 1760. The province of Camaguey is supposed to have been infected first, perhaps by a Spanish family from Valencia. Cases multiplied rapidly and a leprosarium was built in 1861. The disease is now disseminated throughout the territory but the actual number of cases is not known, for many physicians do not report cases in spite of the sanitary ordinance of 1914. There are between 300 and 400 cases in the national leprosarium; the others are not controlled and freely exercise their professions (cooks, chauffeurs, farmers, etc.). The author holds that a serious effort to control the disease should be made, in which there should be special dispensaries to serve as centers for treatment; there should be strong legislation to accomplish prophylaxis.—From review in *Rev. Méd. et Hyg. trop.* **29** (1937) 268.]

ORTENBERG, H. v. Die Verbreitung der Lepra und ihre Behandlung in den deutschblütigen Bevölkerungskreisen Süd-Brasiliens. [The occurrence and treatment of leprosy among Germans in South Brazil.] *Arch. Schiffs- u. Trop.-Hyg.* **40** (1936) 503-505.

The author gives a short description of the high incidence of leprosy at Santa Cruz in South Brazil with infection of the German colony as well as the negroes. In its treatment are used chaulmoogra preparations, including caestrol, by the oral, parenteral and intravenous routes.—[Abstract from *Trop. Dis. Bull.* **34** (1937) (1937) 314.]

PALDROCK, A. Bedeutender Rückgang der Lepra in Eesti. [Decrease of leprosy in Esthonia.] *Arch. f. Schiffs- u. Trop.-Hyg.* **41** (1937) 439-443.

This note is mainly of local interest. It is stated that the cases have decreased from 236 in 1926 to 174 in 1936.—[From abstract in *Trop. Dis. Bull.* **34** (1937) 905].

DUMITRESCO, N. Contributions à l'épidémiologie de la lèpre. [Leprosy in Roumania.] *Bull. Acad. Méd. Roumanie* **3** (1937) 341-347.

The author reports the existence of recent cases in the department of Arges, Roumania. An epidemiological inquiry was made concerning 21 cases in 10 rural communities, resulting in the finding of two active foci, one in the village of Merisani and the other in that of Cicanesti. In those foci the author observed many cases of familial contagion in certain houses, aside from an old initial case. On the other hand, there were many instances of noncontagion, and there were no conjugal infections. In one instance a woman, aged 60, had infected four children, and in another five persons had been infected by the same source.—[From abstracts.]

[GERMANY] La lèpre en Allemagne en 1936. [Leprosy in Germany in 1936.] *Reichsgesundheitsbl.* (1937) 405.

There were only 8 cases sojourning in Germany, without medical treatment, at the end of 1936: 3 in Prussia, 4 in Hamburg, and 1 in Wurtemberg. There were three deaths during the year. The case in Wurtemberg, hospitalized from 1930 to 1934, was returned to his domicile in the latter year as cured, but in 1936 the nasal mucus was found positive again and the patient was re-entered in a clinic.—[From abstract in *Bull. Off. Int. Hyg. publ.* **30** (1938) 176.]

LE DENTU AND PELTIER. Les maladies transmissibles dan les colonies françaises et territoires sous mandat en 1935. [Transmissible diseases in the French

colonies and territories under mandate in 1935.] *Ann. Méd. et Pharm. colon.* **34** (1936) 474.

A part of this annual report is devoted to leprosy. At the Institut de Bamako there were, at the end of the year in question, 272 open cases. In that year 5,418 cases of leprosy had been enumerated in French West Africa (A.O.F.), bringing the total to 18,340; in Togo 575 new cases were listed, in Cameroon, 5,767 were registered and the epidemiological inquiry was still under way; in French Equatorial Africa (A.E.F.) 15,000 cases are known; in Indo-China, 906 new cases; in Oceania, 37 cases; in Guadeloupe, 102 cases; in Martinique, 76 cases; in Guiana, 108 new cases.

—ET. BURNET

LOWE, J. Leprosy and anti-leprosy work in India. *League of Nations, Health Organization. Intergovernmental Conference of Far-Eastern Countries on Rural Hygiene. Preparatory papers relating to British India, 1937, III. 6.* pp. 103-114.

This is a general account of the campaign against leprosy in India carried on by the Council of the British Empire Leprosy Relief Association and various missionary bodies with substantial subsidies by the government. A table of the 1931 census figures of the more advanced and easily recognized cases, with the rates per mille in different areas and a map of the distribution, are recorded. The survey and propaganda work is described. Numerous treatment clinics have been established, mostly attached to hospitals and dispensaries, and a certain amount of clinical improvement is obtained. There being no special staff, much valuable work is not done, as for example domiciliary visitation. About 10,000 patients are accommodated in various government and missionary institutions. Healthy children of lepers are brought up in separate institutions. In each province an attempt is being made to organize at least one well-equipped colony on a self-supporting basis as a center of study. Many medical men have been given short courses of instruction at the Calcutta School of Tropical Medicine, where a whole-time leprosy research worker and staff are maintained. The problem of leprosy in India is a vast one, but it is being tackled in a progressive spirit.—[From abstract in *Trop. Dis. Bull.* **34** (1937) 906-907.]

SANTRA, I. Leprosy in the Eastern States Agency. *Lep. India* **9** (1937) 54.

This article describes the results of brief investigations into the incidence of leprosy in about one-half of the 41 states which constitute the Agency. In a few of the states the incidence appears to be high but in others it is low. The frequency with which yaws is mistakenly diagnosed as leprosy is repeatedly mentioned. In several states the police had been instructed to assemble the cases of leprosy but on examination most of the people brought up were found to be suffering from yaws.

—J. LOWE

DE MELLO, I. F. AND LOYOLA PEREIRA, O. Some facts concerning leprosy in Goa. *Indian Med. Jour.* **30** (1936) 371-374.

Antileprosy work has been carried on in this Portuguese possession in India since 1925. Visits to the villages of known lepers revealed 240 active cases, and they are believed to total 300. A central colony was established in 1932; through it 179 lepers have passed and 140 are resident, of whom only 67 are known to have had intimate contact with a leper. A few have been cleared of all symptoms and infectivity.—[From abstract in *Trop. Dis. Bull.* **34** (1937) 302.]

MUIR, E. Leprosy in the Southern Sudan. *Trans. Roy. Soc. Trop. Med. and Hyg.* **31** (1937) 107-110.

This note deals with the control work in the Southern Sudan organized by Atkey about a decade ago. The author criticizes the optimistic attitude of Woodman regarding the results of treatment among 2,000 cases in the largest of the three leper settlements into which the scattered patients were collected—a unique measure necessitated by the peculiarly unfavorable conditions, with an incidence of 2.8% over a large area. By 1932, 31% of the cases had been rendered quiescent, and by 1935 the percentage had increased to 78, a large proportion having been early cases. A stage has now been reached where further treatment by chaulmoogra oil is ineffective. Quotations from the 1935 official report indicate that the prospect is bright. Continued vigilance is needed against invasion from the neighboring highly infected Belgian Congo.—[From abstract in *Trop. Dis. Bull.* **34** (1937) 908.]

BROWN, J. A. K. Leprosy folk-lore in Southern Nigeria. *Lep. Rev.* **8** (1937) 157-161.

This is an interesting article on the attitude of the primitive tribes in Southern Nigeria toward the disease. The fear of it is such that the native name is seldom used, lest its repetition should cause the sickness to come upon the speaker. The natives ascribe the disease to various causes, which may be grouped under (a) supernatural agencies, (b) heredity, and (c) poisons. Contact is regarded as a secondary cause and is considered only when there is a history of leprosy in the individual's antecedents. No man can make overtures to the parents of his prospective bride unless he goes in native dress (loin cloth only), and a man will not wrestle with a fully clothed opponent; for any one fully clothed is under suspicion. Education is helping to break down prejudice and a plea is made to find useful material among the people's ideas on which to base a leprosy campaign.

—R. G. COCHRANE

DAVEY, T. F. Native Administration Leprosy Colony, Uzuakoli. *Lep. Rev.* **8** (1937) 174-184.

This is an account of the colony's work and administration. The total resident population is over 1,000. The routine drug used in treatment is a mixture of hydnocarpus oil (25%), hydnocarpus esters (25%), olive oil (37.5%), cod liver oil (12.5%) and creosote (4%). Labor is organized and industries such as weaving, carving, tailoring, net-making, etc., are encouraged. The colony has agricultural facilities and extensive plantations for the manufacture of palm oil.

—R. G. COCHRANE

BROWN, J. A. K. Leprosy in Southern Nigeria. Problems of treatment and control. *West African Med. Jour.* **9** (1936) 10-14.

At the Uzuakoli settlement there were 1,082 inmates in 1935, an increase due to the admission of patients prepared to maintain themselves, in addition to those sent by the Native Administrations. Thirty were discharged during the year. Children born in the colony are removed to a special ward; with attention to detail they can be brought up from birth on good artificial foods and properly balanced diet without difficulty. About 20% of the patients are early, 60% advanced but able-bodied, and 20% disabled. Farming on the satisfactory individual system and constructing houses provide most of the work on the 340 acres of land. In treatment (by injections of the crude oil and

esters combined with cod liver oil) the production of a mild reaction with a single rise of temperature to from 99.2° to 99.6°F. is aimed at. The disease is believed to be spreading.—[From abstract in *Trop. Dis. Bull.* 34 (1937) 301.]

RUSSELL, L. M. Note on babies in leper colonies. *Lep. Rev.* 8 (1937) 184.

This is an account of the work of the crèche in the Uzuakoli Leper Settlement. It shows that this side of the work receives particular attention. The daily routine of diet and activities is given. —R. G. COCHRANE

SOARES, J. A. Epidemiologia da lepra no sul do Estado do Espirito Santo. (Analyse de algumas observações.) [Epidemiology of leprosy in the State of Espirito Santo.] *Rev. Brasileira Leprol.* 5 (1937) 159-191.

As regards a contribution to epidemiology, this paper is only of local importance since the cases were but few, only 109 altogether; in this total are included 50 known before 1935 and 12 in the dispensaries. Forty-seven new cases were discovered in 1935; 14 of these were in Alegre municipality, João Pessoa being next with 10; nine other areas together had only 24. Including new and old, 47 of the 109 were in Alegre, 13 in João Pessoa and 13 in Muguy. The author deals with the different forms and types of disease, age, sex and race, but with so small a total such data are of no real significance.—[From abstract in *Trop. Dis. Bull.* 34 (1937) 904.]

TRUONG-VAN-QUE. De la lutte antilépreuse en Indochine. [Leprosy control in Indo-China.] *Bull. Soc. Med.-Chir. Indo-ch.* 14 (1936) 408-411.

Referring to proposals that milder antileprosy measures than compulsory segregation be adopted, the author expresses the opinion that the Indo-China government will hesitate to free all lepers. He therefore suggests that noninfective cases should be set at liberty. To distinguish these he believes that four injections of methylene blue should be given; those whose lesions become colored blue should be classed as dangerous.—[From abstract in *Trop. Dis. Bull.* 34 (1937) 303.]

BLACKLOCK, D. B. Studies in rural hygiene in the tropics. V. The prevention of leprosy. *Ann. Trop. Med. and Parasit.* 31 (1937) 293-298.

This brief paper records impressions derived from a visit to the East, including the Penang and Kuala Lumpur leper settlements, Calcutta and Ceylon. The author hopes that the crude incarceration of lepers with the aid of guards and barbed wire is dying out, and the colony system with land and employment will take its place, and he favors a voluntary system to attract the patients.—[From abstract in *Trop. Dis. Bull.* 34 (1937) 907.]

CERRUTI, H. AND BECHELLI, L. M. A infecção leprosa congenita em face da reação leptotica durante a gravidez. [Congenital infection and lepra reaction during pregnancy.] *Rev. Brasileira, Leprol.* 4 (1936) Spec. No., 199-211.

This article reports only bacteriological examinations. The authors have found the Hansen bacillus in the placenta (once) and the cord (once) in 16 examinations, never in the peripheral blood or the organs of the new-born or the fetus. The subjects in which bacilli were found had had lepra reaction during the course of their pregnancy. It is necessary to avoid reaction in that condition.—[From abstract in *Bull. Inst. Pasteur* 35 (1937) 1018.]



**TOMIKAWA, R. and OBI, K.** Histologische Untersuchung über die tuberculoide und die makulöse Lepra. [Histological investigation of tuberculoid and macular leprosy.] *La Lepro* 8 (1937) 617-632 (Japanese; German abst. p. 49.)

Histological examinations were made of 9 cases of tuberculoid and 10 of macular leprosy. In the tuberculoid cases the lesions clinically had firm, elevated margins, often circinate and sharply bordered. Histologically, epithelioid and giant cells were found. Neither tubercle nor leprosy bacilli were found, either by staining or in culture. (In one case Tomikawa obtained tubercle bacilli in culture, but none in other cases examined afterward.) In the macular cases endothelial proliferation of the small blood vessels in the upper layer of the dermis was frequently found, and also lepra cells which probably derived from the endothelial cells. [Without any apparent connection with the foregoing, the statement is made that bacilli can be found more easily in frozen sections than in paraffin preparations.]—[From a translation of the author's abstract.]

**YAMAMOTO, M.** Klinische und experimentelle Untersuchungen über die Veränderungen der Lungen bei Lepra. I Mitteilung. Histopathologische Befunde der Lungen bei Lepraleichen. [Clinical and experimental investigation of the lung changes in leprosy; histological findings in the lungs at autopsy.] *La Lepro* 8 (1937) 791-819 (Japanese; German abst. p. 63.)

The lungs were studied histologically in 30 cases. Of these, 20 were nodular, 3 neural and 1 macular; 23 were males and 7 females; the ages ranged from 23 to 73 and the duration of the disease from 5 to 41 years. The pathological conditions found in the lungs are noted; tuberculosis was present in two-thirds of the cases. In 9, all of the nodular form, leprosy bacilli were demonstrated in the lungs, though they were sparse. They were mostly found, not in leprous alterations, but in or beside the tuberculous infiltrations or in unchanged pulmonary tissue, mostly in histiocytes, dust cells, or in the endothelium of small vessels. They were rarely found in bundles in widened lymph spaces, but never in the alveolar epithelium. Their appearance was such that it was concluded that in the lungs the bacilli gradually lose their typical form and undergo regressive changes. Affections of the bronchi of ordinary kinds were seen, but bacilli were never found there. Only tuberculous changes were found in the hilus and bronchial lymph nodes.—[From a translation of the author's summary.]

**HAYASHI, Y. AND ABE, H.** Pathologisch-anatomischer und histologischer Untersuchungsbefund der leprösen Trachealstenose von sieben Fällen. [A pathological-anatomical and histological investigation of leprosy tracheal stenosis in seven cases.] *La Lepro* 8 (1937) 565-573 (Japanese; German abst. p. 43.)

The condition was studied in 7 recurrent, severe cases of nodular leprosy in which tracheotomy had been performed and the canula had remained in place for long periods, the patients dying of tracheal stenosis. Stenosis is found from the lower end of the canula to the bifurcation of the trachea, and is especially marked in the middle portion. It is caused by considerable thickening of the mucosa and submucosa because of leprosy infiltration, and also at times by cicatricial contracture. In one case the thickening

measured 0.7 cm. and the lumen only 0.3 cm. Histologically the mucosa is changed into stratified pavement epithelium, with cornification of the superficial layer; sparse leprosy bacilli are found in the neighborhood of the cell nuclei. Below this, in the upper half of the zone there is a distinct leprosy infiltration, with numerous relatively fresh bacilli. In the lower half and in the submucosa there are increase of the connective tissue and old infiltrations of vacuolate lepra cells; most of the bacilli show granular degeneration. Other features of chronic inflammation are present, and the mucous glands are mostly destroyed. A few bacilli are observed in the perichondrium, but none in the cartilage. In the connective tissue outside of the cartilage a slight vacuolate-cell infiltration is found, but the cells are relatively few and the bacilli are granular. These changes the author explains as follows: The air passing through the canula directly and continuously irritates the mucosa mechanically and thermally, especially in the winter, and consequently it is chronically inflamed and damaged. As a result leprosy infiltration increases and the changes of the epithelium noted ensue.—[From a translation of the authors' abstract.]

LOWE, J. AND DHARMENDRA. Sternum puncture in leprosy. A study of 50 cases. *Lep. India* 9 (1937) 121.

Because leprosy appears to be largely an infection of the reticulo-endothelial system, and postmortem examination of bone marrow had frequently shown numerous lepra bacilli, an attempt was made to study the bone marrow during life in cases of different types by sternum puncture. This procedure, which is described, was carried out in 50 cases. Of 32 cases of cutaneous type, bacilli were found in the sternal fluid in 16. In 18 cases of neural type bacilli were found in only 1; none had been obtained from the skin in that case.

—AUTHORS' SUMMARY

BERTACCINI, G. Ricerche istologiche sulla alopecia sopraccigliare dei lebbrosi [Histological study of alopecia of the eyebrows in leprosy.] *Gior. italiano Dermat. e Sifil.* 78 (1937) 371-394.

In six cases of leprosy showing alopecia of the eyebrow of varying degree, histological examination was made of skin from that region. In two cases the eyebrows were the seat of typical lepromata, while in the other four the skin was smooth, thin and of normal or slightly atrophic appearance. Of the latter cases two showed early, recent and not extensive lesions; one was in the last stages with marked nerve lesions, and the other was a mixed case in full activity, with commencing alopecia. Also, one case of fairly recent macular leprosy, without alopecia of the eyebrows, was examined. In summary, a characteristic infiltration, more or less marked, was found in all cases, even where clinically the skin showed no sign of it. Bacilli, more or less numerous, were found invading the papillae of the skin and the hair-follicles, except in one case in which the nasal mucosa and lymph nodes were also negative. There were also definite alterations in the nerves and nerve-endings, with preservation of the perifollicular terminal apparatus even where the leprosy infiltration was most abundant and where the alopecia was complete or almost so. The author concludes that alopecia always follows specific leprosy infiltration invading the papillae and follicles, even when there is an absence of apparent clinical infiltration in this and other regions. When the case is of nerve leprosy, it is suggested that the alopecia

may be of dystrophic origin, from toxic action.—[From abstract in *British Jour. Derm. and Syph.* 50 (1938) 157.]

WADE, H. W. A proposed revision of the Memorial Conference classification of leprosy. *American Jour. Trop. Med.* 17 (1937) 773-801.

This article reviews features of the Memorial Conference classification that have been the subject of criticism or misunderstanding since it was put forward in 1931, and discusses critically various suggestions that have been made for its revision, and also other schemes of classification that have been proposed. The general considerations of classification are then gone into, and a number of definitions needed to clarify the matter are given; most of them are revisions of those adopted by the Memorial conference, but new ones for "lepride" and "polyneuritis" are included. There then follows a complete proposed revision of the classification formula, which includes certain features that were not in the original one. [Since the essential features of these proposals were adopted by the committee on classification of the Cairo conference, further analysis here is unnecessary.] —[AUTHOR'S SUMMARY]

WADE, H. W. AND LOWE, J. The type-distribution of patients at the Purulia Leper Colony. *Lep. India* 9 (1937) 39-48.

There being an impression that the type distribution in Calcutta differs in certain respects from that in other parts of India, the authors compared the clinical findings in 99 consecutive new cases that appeared at the outpatient clinic of the School of Tropical Medicine, with those in 153 cases seen in the outpatient clinic at the Purulia Leper Home, Bihar. Purulia, though in nearly the same latitude as Calcutta, is different as regards terrain, climate and to some extent the racial element. Since the resident patients there are highly selected (mostly cutaneous-type cases), attention was concentrated upon the outpatients, which were subject only to voluntary selection. It was concluded that in this region, as in India as a whole, the proportion of neural cases is relatively high, but in the group studied it was only 52% (48% being cutaneous) as against 82% in the Calcutta clinic group. At the same time, the proportion of cases with frank tuberculoid lesions of various grades was much higher in Calcutta than in the Purulia cases—52% as compared with 22%. Furthermore, major tuberculoid cases were relatively numerous there, as were cases with notable enlargement of superficial nerves; nerve abscesses were seen there, in only 2 cases. Similarly, cases with simple or residual macules were proportionately numerous in Calcutta, 20% against 6%. On the other hand the proportion of cases with anesthesia of limbs, without history or discernable evidence of macules, was surprisingly high at Purulia, 24% there against 9% in Calcutta. Note is made of the frequency in both centers, among the cutaneous-type cases, of the kind with slight involvement of most of the skin. It is concluded that there are regional differences in the disease as it occurs in these two areas. —AUTHORS' SUMMARY

RADNA, R. L'examen bactériologique dans le diagnostic de la lèpre. Notes comparatives entre la valeur de la méthode de recherche directe dans le sang et les autres méthodes usuelles. Première note. [The bacteriological examination in diagnosis. Comparison of direct examination of the blood and ordinary methods.] *Ann. Soc. belge Méd. trop.* 17 (1937) 555-563.



The dehemoglobinized sediment of the blood of lepers was found positive in 84% of cutaneous and mixed cases. In the neural type positive findings were obtained in a few instances. Comparison of this method with others shows that it may be of real value in diagnosis. When bacilli are few in the case, the method is not more laborious or time-consuming than the other procedures employed. The blood should be examined as rapidly as possible after it is taken. It is best taken during a febrile period or in an access of fever of protein reaction. Studies on the relations between bacillemia and allergic reactions to extracts of lepromas and to Loewenstein's vaccine are under way. —H. W. W.

LOMBARDO, C. Nuove indagini sulla colorabilita in vivo dei bacilli della lepra e della tubercolosi. [The colorability *in vivo* of the leprosy and tuberculosis bacilli.] *Boll. Sez. Reg.* 15 (1937) 121-123.

Methylene blue seems to be discredited as a therapeutic agent, but its property of coloring selectively the leprosy bacillus can be made an effective aid in diagnosis. For coloring the leprotic lesions, injection of the dye in the vicinity of the lesion is more effective than intravenous injection.—[From abstract in *Rev. Brasileira Leprol.* 5 (1937) 415.]

DE SOUZA CAMPOS, N. A prova da histamina no diagnostico da lepra maculo-anesthetica. [The histamine test in the diagnosis of maculo-anesthetic leprosy.] *Ann. Paulista Med. Cir.* 29 (1935) 303-311.

The histamine test is valuable in the diagnosis of incipient or regressive macular leprosy. It is easy to perform and the reading is immediate. The conditions which make for difficulty in the interpretation of its results are dark skin, marked redness of the lesions, and cicatricized pigmented macules.—[From translation by M. B. Lara of author's summary.]

AZEVEDO SACRAMENTO, A. A. Resumo estatistico sobre 10,369 casos de lepra. [Statistical summary of 10,369 cases of leprosy (in São Paulo).] *Brasil-medico* 51 (1937) 478-489.

This analysis of over ten thousand cases of leprosy in São Paulo is presented in the form of graphs and tables, giving the nationality, age, sex and occupation of the patients. The following are the main conclusions: Whites are much more frequently attacked than the colored, constituting 90% of the cases. Males preponderated, about three to two (61 and 39%). Foreigners and their children constitute 54% of the patients (2,410 immigrants and 3,207 of their children), Italians heading the list (40%). The disease is commonest in the urban centers and in the poorer, most thickly populated quarters. Clinically, the mixed form is seen most often. As regards age, in Brazilians the disease is mostly in those under 30 years, in foreigners over that age.—[From abstract in *Trop. Dis. Bull.* 34 (1937) 904.]

COCHRANE, R. G. Leprosy in children in Ceylon. *Lep. India* 8 (1936) 147-150.

The results of reexamination of 61 children detected two years previously to be suffering from leprosy are given. In 54% the disease was stationary or the symptoms had decreased; in 13% there was much improvement or the lesions had completely disappeared; in 17% the lesions had increased. Most of the cases had been untreated. Among those who became worse the proportion living in contact with open cases of leprosy was higher than that among those in whom the disease was stationary or im-

proved. Most of the children were under 13 years of age; 58% were males, the percentages of males rising in the later age periods. —J. LOWE

FERNÁNDEZ, J. M. M. La reacción leprosa tuberculoides. [Tuberculoid lepra reaction.] Rev. Brasileira Leprol. 5 (1937) 419-463.

The chief symptoms of lepra reaction occur in all forms of leprosy, but the type of the disease gives the phenomenon certain peculiarities which make it possible to distinguish a tuberculoid lepra reaction from a cutaneous one. The author has studied the clinical, histopathological and bacteriological events in 12 cases of the tuberculoid reaction. This form has a sub-acute evolution, and sometimes it is greatly prolonged. There are no general disturbances, the leprolin test is always positive and the sedimentation rate is low. Two outstanding symptoms are inflammatory congestion of old lesions, sometimes accompanied by the appearance of new ones, and in the first stages the presence of bacilli in the lesions. In 10 of the 12 cases studied numerous bacilli were found as the reaction declined. Skin lesions are transformed into residual atrophic macules once the reaction has subsided. Microscopical examination shows, during the acute stage, an intense tissue reaction with abundant epithelioid cells and lymphocytic infiltration. During regression fibroblasts are numerous and occasionally small necrotic foci are seen. In no case was a change towards the nodular form observed. The process can be considered as an allergic phenomenon produced by the bacillus or its toxins in contact with sensitized tissues. The presence of bacilli in the initial stages and the results of leprolin tests are in favor of this interpretation. The prognosis is favorable. The therapeutic measures that were used did not alter the course of the reaction.—[From author's summary.]

TISSEUIL, J. Sur une forme tuberculoides d'accident primitif de la lèpre. [A tuberculoid form of the primary lesions.] Bull. Soc. Path. exot. 30 (1937) 757.

In 4 children of 2, 3, 6 and 7 years and a girl of 15 years the author has observed a single lesion on the face. This consisted of a red, raised nodule which spread in the healthy skin and cicatrized centrally. The structure is tuberculoid. The author wonders if this lesion is not the leprosy chancre.

—ET. BURNET

TISSEUIL, J. Lésions lépreuses tuberculoides disparaissant au fur et à mesure de l'envahissement des éléments cutanés encore sains. [Tuberculoid lesions disappearing simultaneously with the invasion of healthy skin.] Bull. Soc. Path. exot. 30 (1937) 845-847.

The author has observed that in the Sudan (Bamako) the extension of the tuberculoid leprosy lesions is more rapid than in New Caledonia. The invasion of the skin by the tuberculoid process changes its structure profoundly. The last regions of the healthy skin to be affected are the inguinal folds, the axillary spaces, etc. Cure is only apparent; there occur panaris, torpid ulcers and intermittent swellings of the superficial nerves. These are *malades fragiles*.

—ET. BURNET

GALVEZ, R. A. Contribucion al estudio de una forma de lepra, especial por su localizacion y por su benignidad, observada en Guatemala. [A form of leprosy peculiar in its localization and benignity, observed in Guatemala.] Report presented to the Fourth Central American Medical Congress. Privately printed, Guatemala, July, 1937.

Fourteen cases believed by the author to represent especially benign forms of neural leprosy are reported. The symptoms are essentially of neuritic disturbances of the feet, with neuralgic pains, feeling of heaviness and trophic changes of the toes. Evolution is prolonged, lasting from 10 to 20 years. Four types are described: (1) a dry form, characterized by absorption of the toes but without open lesions; (2) a hyperplastic form, with thickening of the skin and skeletal enlargement confined to the legs; (3) a mixed form, with a combination of the dry form and open lesions; and (4) a complex form, characterized by mutilations, ulcerations and marked hyperpigmentation of the feet. No particular influence of age, sex, habits, occupations, and geographical location was found. Smears from the nasal mucosa and the affected parts were negative, though the histopathological changes are those of leprosy; Wassermann negative; no significant findings in urine or blood. X-ray pictures show bone deformities, rarefactions and absorptions. The lesions are considered to be secondary to changes in the nerve trunks.

—M. B. LARA

SHIONUMA, E. On the leprosy eye symptom and the climatic theory. *La Lepro* 8 (1937) 661-667 (Japanese; abstract in English, suppl. 57.)

Hayashi found that leprosy involvement of the eye and scalp (alopecia) are more frequent in cold regions than in warm, and that the proportion of blind in the leprosarium in Formosa is nearly the same as in the tropics. Nagai, comparing data on alopecia in three parts of Japan (Hondo in Kyushu, Oshima and Okinawa), concluded that it is less frequent and less severe in the warmer regions than in the colder. The author has made a similar inquiry regarding eye changes and has found the same correlation. These observations, and the fact that among the patients in a given place leprosy symptoms as a whole are less severe in summer than in winter, are held to sustain Hayashi's theory of the relation of climate and severity of the disease.—[From author's abstract.]

OVERDOERFFER, M. Study of nose leprosy. *Lep. Rev.* 8 (1937) 154-156.

This is a report of nasal examinations in 160 unselected cases in Southern Nigeria. A predominance of lesions on the anterior septum was noted. The usual theories of infection are mentioned and some anatomical data are given. The author states in summary that the anterior nasal septum is doubtless exposed to external injury, and is thus apt to form a suitable site for growth of leprosy bacilli, brought to the surface of the mucous membrane in various ways. From consideration of the histology of this spot the opinion is reached that in a certain number of cases the ectatic abnormal conditions of the deeper vessels form the soil for hematogenous infection.

—R. G. COCHRANE

YAMASAKI, E. Ueber Pemphigus leprosus. (Leprotic pemphigus.) *Japanese Jour. Dermat. and Urol.* 42 (1937) 269-273, suppl.

The findings in 19 cases of leprotic pemphigus are reported. All presented vesicles, and there were also ulcers in 4. Patient's ages: from 17 to 67 years. Type of leprosy: mixed, 6; nodular, 3; maculo-anesthetic, 8; neural, 2. Localization: hand and forearm, 9; feet, 5; leg, 7; thigh, 1; the condition occurs more on parts exposed to trauma than elsewhere. Duration: from a few months to 5 or 6 years. Onset: sudden, without prodromal symp-

toms. Hyperesthesia: present in all cases. Vesicular contents: fibrinous masses with lymphocytes, leucocytes and red blood cells in addition to debris.—[From abstract in *Urol. and Cutan. Rev.* **42** (1938) 148.]

DUSAN, J. AND BONNET, J. Léprides érythémato-circinées. Poussée nouvelle chez une Hansénienne régulièrement traitée. [New eruption of leprides in a regularly treated case.] *Marseille-méd.* (1937) 205.

The patient was a woman, aged 54, who was born in Italy but who removed to Brazil at the age of 27 years. In 1931, at the age of 43, leprosy developed, with leprides on both arms and later on one thigh. In April, 1933, there were large, hyperpigmented and anesthetic plaques. Since then she has been treated in Marseilles with a series of iodized hyrganol. During a 3-month rest period at the end of 1936 the patient had grippe, after which there appeared erythematous-circinate leprides on the forearm, the thighs and the buttocks. These lesions had progressed in spite of immediate resumption of treatment.—[From abstract in *Ann. Dermat. et Syphil.* **9** (1938) 56.]

BAPTISTA, L. Um caso interessante de leproma verrucoso. [A case of verrucous leproma.] *Rev. Bras. Leprol.* **5** (1937) 525-529.

The author presents a case of mixed leprosy in which, after a trauma, there developed a circinate lesion formed of a row of verrucous elements, which biopsy revealed to be of lepromatous nature.—[From abstract in *Ann. Paulista Med. e Cir.* **34** (1937) 616.]

MALHOTRA, B. L. Leprosy appearing in advanced age. *Lep. India* **9** (1937) 30-31.

The first symptom of leprosy—a bacteriologically negative hypopigmented macule with disturbances of sensation—appeared in a man 76 years of age. This person, who was intelligent and in perfect mental state, said that he had been in contact with a leper 44 years previously but with none since that time.—[From abstract in *Bull. Inst. Pasteur* **35** (1937) 1019.]

GOUGEROT, H. AND BLUM, P. Résorption du bleu des lépromes visibles et invisibles par l'injection dermique local d'histamine. [Resorption of methylene blue from visible and invisible lepromata under the influence of histamin injections.] *Bull. Soc. française Dermat. et Syphil.* **45** (1938) 36-37.

[This article is adequately covered by the summary of a paper presented to the Cairo Congress, preceding issue, p. 452.]

TISSEUIL, J. Index paludéen chez les enfants de l'Institut Central de la Lèpre à Bamako. [Malaria index among children of the Central Institute of Leprosy at Bamako.] *Bull. Soc. Path. exot.* **30** (1937) 233-234.

Because of the admitted importance of coexistent affections that might aggravate the evolution of leprosy, the author examined 64 children, aged from 3 months to 16 years, at the Bamako institution. He found a splenic index of 70%, schizogenic index 40%, and gametic index 1.5%.—[From abstract in *Jour. Trop. Med. and Hyg.* **40** (1937) 255.]

DE MOURA COSTA, H. O methodo de tratamento da lepra pelas grandes doses de chaulmoogra. [Treatment with large doses of chaulmoogra.] *Rev. Brasileira Leprol.* **5** (1937) 361-367.

[This article is adequately covered by the summary of the paper presented to the Cairo Congress, preceding issue, p. 454.]

DE MELLO, I. F. Treatment of leprosy by intravenous injections of pure chaulmoogra oil. *Med. Digest* 3 (1935) 160-162.

———. Traitement de la lèpre d'après trois ans d'expérience personnelle. [Three years' experience of treatment.] IX. Congr. Internat. Dermat., 1935 vol. 2, 4 pp.

In these papers, which deal with the same work, the author first reports negative results among the 109 lepers in the Goa leprosarium from the use of vaccines of the Friedmann bacillus, and little benefit from either antimonial preparations or methylene blue. He therefore remains a decided partisan of chaulmoogra. He has used alepol, esters, etc., but has also now given 1,380 intravenous injections of pure neutralized chaulmoogra oil without any accident. The results are very encouraging, with 9 patients discharged as cured and 20 others much improved.—[From abstract in *Trop. Dis. Bull.* 34 (1937) 313.]

NIITO, S. Experimentelle Studien über die Wirkung der Chaulmoograölpräparate. I Mitteilung. Ueber die Chaulmoograöl-behandlung bei der Tuberkulose. [Experimental studies on the action of chaulmoogra preparations; chaulmoogra treatment in tuberculosis.] *La Lepro* 8 (1937) 633-639 (Japanese; German abst. p. 51.)

A chaulmoogra-olive oil mixture (1:2) was administered to 24 cases of tuberculosis, in increasing doses for three months and uniformly thereafter for shorter periods. In 7 cases there was distinct improvement, and in 9 others less improvement. In 8 cases the treatment was without effect, but the disease did not become worse.—[From a translation of the author's summary.]

LE QUEREC. L'insaponifiable de l'huile de Chaulmoogra. [The nonsaponifiable fraction of chaulmoogra oil.] *Bull. Soc. Path. exot.* 30 (1937) 889.

The nonsaponifiable fraction of *H. anthelmintica* oil was separated by the method of Vizern and Guillot, which was adopted by the international commission for the unification of methods of analysis of fatty substances. Dissolved in neutral olive oil (a 5 cc. ampule containing 0.05 gm. of the substance, which corresponded to 50 cc. of the original oil), proved to be completely inactive in lepers treated for from 6 months to a year. This experience is contrary to the opinion of Stevenel regarding the efficacy of a crystalline product which he obtained from the nonsaponifiable fraction of an ether extract of the tegument of chaulmoogra seeds. The activity of the chaulmoogra oils is due to their fatty acids. —ET. BURNET

TISSEUIL, J. Traitement de la lèpre tuberculoïde par les injections intradermiques d'éther éthylique de Gorli (*Coloncoba glauca*). 1ère note. [Treatment of tuberculoid leprosy by intradermal injections of gorli ethyl esters.] *Bull. Soc. Path. exot.* 30 (1937) 356.

This preparation was administered, in doses of 2 cc., twice a week to 6 Negro patients. Tuberculoid macules regained a nearly normal black coloration and the peripheral, papular zone of extension cleared up. It is necessary to make injections outside of the lesions as well as in them; the author has



seen signs of activity appear in the extraperipheral region more than a year after treatment. —ET. BURNET

NODENOT, L. Sur un cas d'incompatibilité des traitements antisypilitiques et antilépreux. [A case of incompatibility of antisypilitic and antileprotic treatments.] Bull. Soc. Path. exot. **30** (1937) 843-845.

This is an observation of an adult patient in whom antileprotic treatment with methylene blue and chaulmoogra seemed to aggravate syphilitic lesions. The author concludes that the case was very probably only syphilitic. —ET. BURNET

GOLOVINE, S. Essais sur la traitement de cas de lèpre à réaction syphilitique positive. [Treatment of cases of leprosy with positive syphilitic reactions.] Bull. Soc. Path. exot. **30** (1937) 839-843.

Leprosy seems to be more resistant to treatment in cases with positive Meinicke reactions than in those that are negative. In the positive cases the antisypilitic and antileprotic treatments may be associated, or treatment may commence with the former. The author has employed a mixed treatment, using 2% methylene blue, chaulmoogra oil given subcutaneously, and auro-detoxine given intramuscularly; this has seemed more active than the simple treatments. —ET. BURNET

PIÉRI, J., SARDOU AND BATESTI. Lèpre mixte traitée par le bleu et l'Hyrganol. Présence de bacille dans le sang périphérique. [A mixed case treated with methylene blue and hyrganol; presence of bacilli in the peripheral blood.] Marseille-méd. (1937) 209.

The case presented is a typical one with bilateral orchid-epididymitis. Bacilli were found in the peripheral blood by the thick drop method. Failure of treatment with methylene blue led the authors to use chaulmoogra ethyl esters (hyrganol), with which temporary improvement was obtained.—[From abstract in *Ann. Dermat. et Syphil.* **9** (1938) 57.]

MONTEL, R. AND CHAVANNES, I. Bleus de méthylène dits "médicinaux." [So-called "medicinal" methylene blues.] Bull. Soc. Path. exot. **30** (1937) 587-589.

The authors inquire as to the cause of the accidents observed by certain authors during treatment by intravenous injections of methylene blue—apart from pre-existing hepatic or renal insufficiency, or individual sensibility. The various brands of the dye differ widely one from another. Certain of them contain up to 15.5% of dextrine, which the Japanese pharmacopoeia does not tolerate. "The primary condition of a good treatment is the purity of the product." —ET. BURNET

MONTEL, R., MONTEL, G. AND NGUYEN NGOC NHUAN. Essais de traitement de la lèpre par le phénol-sulfone-phtaléine. [Treatment with phenolsulphonophthalein.] Bull. Soc. Path. exot. **29** (1936) 1064-1067.

Phenolsulphonophthalein colors the lesions red. Increasing doses, 5, 10 and 15 cc. of a solution containing 6 mgm. per cc., were given every 2 or 3 days up to a total of about 185 cc. in 26 days in one case and 173 cc. in 35 days in another. The lesions improved rapidly but it is too soon to judge the final results. —ET. BURNET

COCHRANE, R. G. AND PAUL RAJ, M. Solganal B oleosum in the treatment of leprosy. *Lep. India* 9 (1937) 75.

Eight cases were treated with Solganal B oleosum, the course of injections being 0.01 gm. for 3 injections, 0.05 gm. for 3 injections and 0.1 gm. one injection, given intramuscularly at weekly intervals. Cases of cutaneous type with a tendency to lepra reaction were chosen, most of them showing infiltration of the eye. In 5 there was a tendency to subsidence of the lepra reaction; in one it was subsequently found that tolerance to hydnocarpus preparations had been greatly increased. In cases of reaction with fever the treatment produced no marked improvement; these cases responded better to tartar emetic and fluorescein. Larger doses of the drug were found not beneficial, but even harmful, tending to produce reaction. —J. LOWE

MARCHOUX, E. AND CHORINE, V. Traitement de la lèpre par le tellure. [Treatment with tellurium.] *Bull. Acad. Méd.* 118 (1937) 86-93.

The authors have experimented with the treatment of both rat and human leprosy with tellurium and many of its compounds: tellurate, tellurite cyclotelluropentane, in suspension in oil or in serum with glucose. In rat leprosy tellurium retards or suspends the evolution of the disease, without destroying the vitality of the bacilli. Rats of 100 gms. weight have supported, in 2½ months, 2.4 gms. of sodium tellurate per kilo, in injections of 2, 4, 5, 6 and 10 mgms. They give off a strong odor of garlic, the eyes (white rats) become black, and the skin takes on a grayish tint. In human leprosy the hair is decolorized and the skin becomes black. Injections of 0.25 gm. every 5 days are well supported. Pains disappear, the lepromas decrease and the general state is improved. These improvements occur in the first month, but do not seem to persist. —ET. BURNET

RABELLO, ED. AND OZORIO DE ALMEIDA, A. Essai de traitement de la lèpre par l'oxygène sous pression. [Treatment by oxygen under pressure.] *Bull. Soc. française Dermatol. et Syphil.* (1938) 810-823.

[This article is adequately covered by the summary of the paper presented to the Cairo Congress, preceding issue, p. 456.]

CORREA DE CARVALHO, J. Vaccinothérapie específica na reacção leprotica. [Specific vaccinothérapie in lepra reaction.] *Rev. Brasileira Leprol.* 4 (1936) Spec. No., 149-161.

The author reports favorable effects in lepra reaction of repeated intravenous injections of small doses (0.1 to 1 cc.) of a vaccine prepared from lepromas ("venolepromine"). Stronger doses may cause exacerbations.—[From abstract in *Bull. Inst. Pasteur* 35 (1937) 1018.]

DE MELLO, F. AND PEREIRA, L. Observations résumées du traitement de quelques lépreux par le vaccin de Vaudremer. [Observations on the treatment of cases of leprosy with the Vaudremer vaccine.] *Bull. Soc. Path. exot.* 30 (1937) 749-71.

The vaccine of Vaudremer is well tolerated and does not cause reactions. The results obtained with it are not satisfactory in all cases, but it seems favorable in those with edematous infiltrations of febrile reaction type. It has no effect on leprotic nodules, and seems to aggravate ocular lesions. One case of early leprosy of the neural type is said to have been much benefited, with clinical cure. —ET. BURNET

TISSEUIL, J. AND GUILHAUMOU, F. Essai de traitement de la lèpre nerveuse par le vaccin antirabique. [Treatment of neural leprosy by antirabic vaccine.] Bull. Soc. Path. exot. **30** (1937) 751-755.

Treatment of three cases of leprosy with predominantly neural symptoms by antirabic vaccine by the technique of preventive treatment of rabies resulted in temporary improvement of the general condition, lessening of nodules and cicatrization of some ulcers. It is believed that this effect is not specific. —ET. BURNET

CHOPRA, R. N. AND CHOWHAN, J. S. Cobra venom in therapeutics. Indian Med. Gaz. **72** (1937) 339-348.

It is stated that as long ago as 1826 Ainslie reported that the dried flesh of a harmless hill snake has been known to the Hindus as a remedy for leprosy, and other references to the use of similar preparations, or of snake venom, in this and other diseases are mentioned; and also an observation by Monaelesser that a leper suffering from violent plexus neuritis was relieved by the bite, in the affected area, of a large tropical spider. This chance occurrence was the cause of subsequent investigations by Monaelesser and Taguet, in Calmette's laboratory in Paris, into the anesthetic properties of animal poisons. This resulted in the treatment of inoperable tumors with cobra venom, which contains a high proportion of neurotoxins and only a small quantity of hemolysin and hemorrhagin. Labernadie and Branbilla have mentioned the use of this venom in neural leprosy. The authors report six cases in all of which repeated injections of venom were followed by marked improvement or complete relief of pain. Saline injections were given for a while to two of these patients without effect, so it is concluded that the relief under venom treatment was not merely suggestive. It is doubtful if it has any direct action on leprosy bacilli. —H. W. W.

VALLE, S. O anaveneno crotalico em ophthalmologia. [Crotaline antivenin in ophthalmology.] Rev. Brasileira Leprol. **5** (1937) 481-500.

Crotaline antivenin and those of similar nature in therapeutic doses are analgesics which, by acting on sensory nerve endings, have definite indications. In ocular pains, whether of leptotic nature or not, the antivenin injected under the conjunctiva affords immediate and lasting relief, without local or general disturbance. The ocular globe, because of special topographical conditions, is the best organ for the use of antivenin, which easily reaches the ciliar nerves, blocking at once all ocular sensitivity.—[From author's summary.]

MONTEL, R., MONTEL, G. AND LE VAN PHUNG. Essais de traitement de la lèpre par le cystéine en injections intraveineuses. [Treatment by intravenous injections of cystein.] Bull. Soc. Path. exot. **29** (1936) 1061-1063.

Four cases that had been treated with methylene blue to the point where improvement ceased were given cystein, 3 injections of 0.5 gm. each per week, up to 20 injections. Three cases were improved; the fourth, which was not, had not benefitted from the methylene blue. This material is held to be useful as an adjuvant in leprosy treatment. —ET. BURNET

PINARD, M. AND CHICHE. Présentation d'un lépreux. Essai de traitement, par les injections intradermiques d'extrait de pancréas. [A case treated

by intradermal injections of pancreatic extract.] Bull. Soc. française Dermat. et Syph. 44 (1937) 2002-2004.

In this case, in which syphilis and leprosy had existed since 1929, chaulmoogra oil was ineffective but malaria treatment controlled the disease enough to enable the patient to continue his occupation of house painter for eight years. A relapse in 1937 was being treated with extract of pancreas, given by intradermic injection three times a week. Improvement was marked and rapid.—[From abstract in *Urol. & Cutan. Rev.* 42 (1938) 458.]

TISSEUIL, J. Heureuse action de la Yohimbine sur la laryngite des lépreux. [Favorable action of yohimbine on leprosy laryngitis.] Bull. Soc. Path. exot. 30 (1937) 634-635.

Yohimbine, taken by ingestion of 2 to 4 granules of 2.5 mg. per day, in series of 10 days, causes rapid amelioration of the symptoms of leprosy laryngitis, reduction of fever and general improvement. This conclusion is based on four observations. —ET. BURNET

TISSEUIL, J. Le synthol soufré dans le traitement des ulcères de la lèpre nerveuse. ["Synthol soufré" in the treatment of the ulcers of neural leprosy.] Bull. Soc. Path. exot. 30 (1937) 755-757.

Intravenous injection of "synthol soufré" (1 cc. twice a week, in series of 10 to 20 injections), produced in all of four cases so treated an amelioration of the general condition, arrest of the suppuration of ulcers and healing of most of the trophic ulcers (*maux perforants*). —ET. BURNET

DAS, N. Treatment of maggots in the nose in cases of leprosy. *Lep. India* 9 (1937) 124.

The frequency of this condition in patients applying for admission to a leprosy hospital is recorded. The symptoms are pain in the frontal region and eyes, severe headache, swelling of the face, nose and eyelids; frequently there are fever and rapid pulse, and epistaxis, and patients complain of a peculiar sensation in the nose. Treatment consists of syringing the nose with 10% turpentine in distilled water, followed a short time afterwards with 1% sodium bicarbonate. This procedure carried out for three or four days gives satisfactory results. —J. LOWE

TERADA, M., TERADA, Y. AND NOZAKI, M. Studies concerning human and rat lepra bacilli and other acid fast organisms. Part I. Biological studies on human and rat lepra bacilli. *Kitasato Arch. Exp. Med.* 13 (1936) 333-347.

The authors separated both human and rat leprosy bacilli from tissues containing them in large numbers by mincing and centrifuging so as to separate the bacilli in a layer, and then repeatedly washed them. They then carried out the following biochemical tests with both varieties of organisms and obtained precisely similar reactions with each. Thus both gave catalase and lipase reactions, and neither gave oxydase, protease (caseinase), or amylase ones, and neither organism fermented monosaccharides, such as glucose, galactose and levulose.—[Abstract from *Trop. Dis. Bull.* 34 (1937) 318.]

RODRIGUES DE SOUZA, A. Destino do bacillo de Hansen fo'ra do organismo. [Fate of the Hansen bacillus outside of the organism.] *Rev. Brasileira Leprol* 4 (1936) Spec. No., 369-374.

The author has not been able to find leprosy bacilli in the dust or sweepings of a leprosarium. They were found in large numbers in the swer-pits receiving fecal matter, and in cadavers from 1 to 4 years after burial, but the question arises if they were actually leprosy bacilli, and if so if they were living.—[From abstract in *Bull. Inst. Pasteur* 35 (1937) 1009.]

ADLER, S. Inoculation of human leprosy into Syrian hamster. *Lancet* 2 (1937) 714 (correspondence).

This is an interesting account of the experimental inoculation of leprosy into the Syrian hamster. The following technique was used: the animal was first splenectomized, after which a leprosy nodule was implanted between the skin and fascia in the neighborhood of the incision, and the animal was also given an intraperitoneal injection of the macerated leprosy material. The imbedded fragments lay in a space devoid of blood supply and became attached to the underlying muscle by fibrin. Local infection occurred in three animals, with marked multiplication of bacilli and nodule formation, and in one instance bacilli were found in the liver; all this occurred within six weeks of the inoculation. The writer says that these findings "are not accidental and that in the Syrian hamster, at least under the conditions of the experiment described, we have an animal susceptible to human leprosy."

—R. G. COCHRANE

BERTELLOTTI, L. Tentativi di inoculazione della lepra umana nei ratti in avitaminosi. [Inoculation of human leprosy tissue into rats on vitamin deficient diets.] *Arch. italiana Sci. Med. colon. e Paras.* 17 (1936) 577-609.

The investigation here reported was a laborious one; but the number of animals used was small and the periods of observation short. Eight groups of white rats, two or three in a group, were inoculated with human leprosy emulsion subcutaneously on the abdomen and the back and into the skin of the ear. The diets given were: (a) normal (control); (b) avitaminosis A (Steenbock); (c) the same plus a synthetic vitamin A product (vogan); (d) avitaminosis B and C plus vitamin C (cebion); (e) the same plus vitamin B (yeast); (f) avitaminosis C plus vitamin C; (g) avitaminosis D; (h) the same plus vitamin D (vigantolo). The animals were killed after, as a rule, 30, 60 and 90 days and the tissues examined. Avitaminosis did not appear to bring about any reduction of defensive power or render infection possible. Though bacilli could be found even after 90 days they were usually undergoing degeneration. Occasionally indications of multiplication were seen, but not sufficiently often to indicate that the conditions of the experiments played any active part.—[From abstract in *Trop. Dis. Bull.* 34 (1937) 316.]

BONCINELLI, U. Ricerche ed osservazioni sulla reattività cutanea dei lebbrosi alle cosiddette "lepromine." [Cutaneous reaction to so-called lepromin.] *Gior. italiano Dermat. e Sifil.* 78 (1937) 629-651.

The author reports his observations on reactions to the Mitsuda-Hayashi test with various emulsions (lepromine). These tests were carried out on 77 subjects, of whom 31 were lepers (23 nodular, 6 maculo-neural and 2 mixed), 2 suspects and 44 controls. In the lepers the reaction was clearly positive 5 times—in 4 of the 6 neural cases and in one nodular one. One of the 2 suspects gave a positive reaction, of an intense pomphigo-papulous type. Of the controls, one-half (22) gave slightly positive reactions; these



were in 10 out of 21 cases of recent syphilis, all of 6 cases of cutaneous nodular tuberculosis, 3 out of 4 cases of gonorrhoea, in 2 out of 6 cases of eczema, and in 1 case of paronychia. The frequency of the reaction in syphilis and in tuberculosis is considered worthy of attention. The morphologic types of the reaction were: nodular, in 3 cases of syphilis and 1 of gonorrhoea; pustular, in 4 cases of syphilis and 2 of gonorrhoea; pemphigopapular and papular, in 3 cases of syphilis, 6 of cutaneous tuberculosis, and in those with paronychia and eczema.—[From abstract in *Urol. & Cutan. Rev.* 41 (1937) 825.]

NITTO, S. Studien über die Hautreaktion und Allergie bei Lepra. III Mitteilung. Ueber den Mechanismus und das Wesen der Hautreaktion bei Lepra, insbesondere über die klinische Bedeutung derselben. [Studies on the skin reaction and allergy in leprosy; the mechanism and character of the skin reaction, and especially its clinical importance.] *La Lepro* 8 (1937) 535-546 (Japanese; German abst. p. 39.)

The author's previous investigations showed that the skin reaction can often be produced nonspecifically in bacillary leprosy by acid-fast saprophytes, though when antigens are used in moderate dilution the reaction is considered to be due to specific allergy. This reaction, he believes, involves the action of antigens and antibodies. The antigens may be derived not only from leprosy bacilli but also from other acid-fast organisms, like tubercle bacillus and saprophytic strains. Hence the reaction is a nonspecific one; it can often be produced in nonleprosy old (senile) persons by leprosy antigens. The antigens of various acid-fast bacilli can bind with nonhomologous antibodies, producing nonspecific reactions. From these investigations it may be assumed that the von Pirquet reaction is not always a specific one.—[From a translation of the author's abstract.]

SOUZA-ARAÚJO, H. C. DE. Intradermo-reacções em leprosy com antigenos de culturas de bacilos acido-alcool resistentes. [Intradermal reactions with acid-alcohol-fast bacillary antigens in leprosy.] *Mem. Inst. Oswaldo Cruz* 32 (1937) 469-497.

Eleven strains of the acid-alcohol-fast bacilli were used, most of them supposedly leprosy bacilli isolated by various workers in different parts of the world. The technique of preparing and using the antigens is described; the test dose is kept to 0.1 cc. Those which seemed to be the most active are, in order, Lleras Acosta, Duval and Clegg I; the first of these was 25% more active than the second. It seems that the more strong the acid-fast property of the culture, the more active is the antigen made from it. Discrepancies of results among patients of the same clinical type appear paradoxical, but the reactions depend upon individual factors. In some patients the tests provoked leprosy reaction; cases that had improved markedly under treatment relapsed, with aggravation of symptoms. Reactions with glycerinated broth and sterilized milk were negative except in one patient in frank leprosy reaction. No abnormality in the excretion of calcium was found, even in cases with strong reactions.—[From a translation by M. B. Lara of author's summary.]

KAWASAKI, S. Beiträge zur Kenntnis der serochemischen Reaktion (MHH-Reaktion) bei Lepra. [On the MHH serochemical reaction in leprosy.] *La Lepro* 8 (1937) 455-480 (Japanese; German abst. p. 27.)

The author has obtained the following results with the MHH (Mina-mi-Hikizi-Hayata) reaction in leprosy. Out of 105 cases, 100 (95%) gave positive reactions. All of the nodular and mixed cases were positive. In healthy persons it was always negative. The value of the antigen from leprosy blood does not seem to depend much upon the form of the disease or the type of the reaction, but apparently the blood of young persons and of healthy lepers is most useful. The reaction was tried similarly with two antigens, containing 0.5 mgm. of leprosy-blood fibrin and 1.5 mgm. of leprosy serum substrate; the results were practically alike. It is concluded that the reaction is a good one and that it is useful as an aid in the diagnosis of leprosy.—[From translation of abstract.]

KAWASAKI, S. Ueber die serochemische Reaktion mit Gewebssubstrat des Lepraknotens. [The MHH reaction with a tissue substrate from leprosy nodules.] *La Lepro* 8 (1937) 821-830 (Japanese; German abst. p. 65.)

The author performed similarly, for comparison, the test with leprosy fibrin- or serum-substrate and with a tissue substrate prepared from leprosy nodules. Both tests gave positive reactions in 85% of cases. With 22 healthy, nonleprosy persons the MHH reaction with the tissue substrate was always negative; however, in 4 cases there was an immunity reaction, whereas the MHH reaction with fibrin proved to be negative. It is concluded that while the tissue substrate is useful for the reaction, leprosy fibrin is more suitable.—[From a translation of the author's summary.]

HUZIMOTO, S. Ueber die serochemische Reaktion (MHH-Reaktion) bei Rattenlepra, insbesondere über die Reaktion mit dem Gewebssubstrat des Rattenlepraknotens. [The MHH sero-chemical reaction in rat leprosy; the reaction with tissue substrate from nodules.] *La Lepro* 8 (1937) 431-454 (Japanese; German abst. p. 25.)

The MHH reaction has been applied by the author in rat leprosy, with the following results: Positive reactions were obtained in 51 out of 60 cases (85%). When the reaction was performed with an antigen composed of a substrate prepared from subcutaneous nodules of rat leprosy, the results were virtually the same as when the serum protein substrate was used; 94% of the tests were positive. In healthy and nonleprosy rats the reaction was always negative.—[From a translation of the author's summary.]

BIER, O. AND PLANET, N. Ueber die Serologie der Lepra. VI. Anwendung der Witebskyschen Methode zur Herstellung eines Antigens für Komplementbindung bei Lepra mit "Streptothrix leproides." [The serology of leprosy. VI. Use of antigen prepared by Witebsky's method.] *Arch. f. Schiffs- u. Trop.-Hyg.* 41 (1937) 565-567.

This brief note reports that the chemical fractionation of the *Streptothrix leproides* (Deicke) by the method of Witebsky furnishes an active, complement-binding fraction which resembles the specific lipoid contained in the tubercle bacillus. The sensitiveness and specific nature of this antigen parallels those of tubercle-bacillus antigens, although reactions with leprosy sera are not so intense.—[From abstract in *Trop. Dis. Bull.* 34 (1937) 914.]

BONCINELLI, U. Ricerche sierologiche sulla lebbra. [Serological studies in leprosy.] *Gior. italiano Dermat. e Sifil.* 78 (1937) 1175-1201.

The reactions employed were the Wassermann, Meinicke (MKR II),

Kahn and Citrochol. The subjects were 63 lepers and 65 relatives of lepers who seemed to be free from the disease. The lepers were classified as follows: 49 nodular, 5 mixed, 3 maculo-neural, and 6 neural. In the control group all reactions were negative. The 9 neural cases were also completely negative. In the 54 nodular and mixed cases a considerable number of positives were obtained. *Wassermann*: 61% (31 out of 51 cases; 12 sera anti-complementary). *Meinicke*: 21% (in 6 instances complete, in 7 partial); 36 negative. *Kahn*: 43%, most of them 4+ or 3+ (5 cases weak, 2+); 22 negative. *Citrochol*: 49% (4+, 15; 3+, 5; 2+, 11 cases); 18 doubtful (1+, 3 cases) or negative. Only one case had coexistent syphilis. In 22 cases repeated tests were made over the period of a year to study the variability of the reactions under antiluetic and chaulmoogra treatments, and without treatment. Some cases of both groups showed lessening or disappearance of the reaction, but in others the opposite change occurred. In the syphilitic case the reaction persisted despite treatment. In complement fixation tests with sera freed of globulins by HCl (method of Auguste) the reaction became weaker or disappeared in lepers' sera, the reverse happening with those of syphilitic controls. From this the author concludes that the property that causes fixation of leprosy sera with luetic antigens seem to be in part related to the precipitable fraction, whereas in syphilitic sera the reacting element has no such relationship or may even be inhibited by the globulin. —[From abstract in *Ann. Dermat. et Syphil.* 9 (1938) 448.]

MALDONADO, L. G. La reacción de Kahn en la lepra. [The Kahn reaction in leprosy.] *Gac. Méd. Caracas* 42 (1935) 380-381; 43 (1936) 9-16; 27-28.

Three significant cases are recorded: (1) A young man with iritis, with no history of syphilis but a 4-plus Kahn, on which intensive antisymphilitic treatment had no effect; further examination revealed evidences of leprosy. (2) A young woman with papular lesions of the face, also with a 4-plus Kahn not improved by antisymphilitic treatment; numerous leprosy bacilli found in the papules; improvement under chaulmoogra, without effect on the Kahn reaction. (3) Another young woman with a very similar history. Upon examining many lepers in Providence Island as regards their Kahn reaction the author came to the conclusion that there, at any rate, the reaction was frequently positive even where syphilis and yaws could be excluded. —[From abstract in *Trop. Dis. Bull.* 33 (1936) 941.]

HADDOW, P. AND STURTON, S. D. The Kahn test in leprosy. *Lep. Quart.* 11 (1937) 127-131.

The Kahn test was positive in 74% of 53 lepers, but in only 27% of 1,377 other patients. Nine of the lepers developed lepra reactions; 6 of them were previously positive and in 2 of these the Kahn test became stronger; the 3 negative cases became positive. The 8 in whom the lepra reaction had subsided at the time of the report all remained positive. It was found that 59% of the Kahn-positive cases gave a history of lepra reaction, while only 36% of Kahn-negative cases had such a history. The authors calculate that in the cases in which lepra reaction had a part the figure for positive Kahn reactions (30%) is very little above that for positive cases among nonleprosy patients.

—H. W. W.

ISHIBASHI, T. Beiträge zur Serologie der Lepra, mit besonderer Berücksichtigung der für die Komplementbindungsreaktion bei Lepra wirksamen Antigene. Nebst serologischen Untersuchungen an Seren von mit säurefesten Bazillen immunisierten Kaninchen. [Complement fixation and other serological tests in leprosy; investigations of sera of rabbits immunized with acid-fast bacilli.] *Tohoku Jour. Exp. Med.* **30** (1937) 287-314.

The author reports on elaborate investigations of complement deviation with antigens prepared from various acid-fast micro-organisms, from different varieties of tubercle bacilli to the smegma bacillus, and also on agglutination reactions with the sera of rabbits immunized against such antigens. The following are the most important results obtained: The Wassermann reaction (Kolmer) in 138 cases of leprosy was positive in 22% (40% in nodular cases, 4% in nerve ones). A saline emulsion of ether-soluble fractions of acid-fast bacilli gave positive reactions in 91% of nodular and 84% of nerve cases. With an avian tubercle bacillus antigen, positive reactions were obtained in 79 to 91%, and this antigen is regarded as of diagnostic value. Agglutination reactions with the sera of the immunized rabbits were positive in dilutions of from 320 to 1,280 with different preparations.—[From abstract in *Trop. Dis. Bull.* **34** (1937) 609.]

GRALL, A. L'activation du venin de cobra par le sérum lépreux. [Activation of cobra venom by leprosy serum.] *Bull. Soc. Path. exot.* **30** (1937) 590-596.

There is no clear difference between the sera of healthy rats and of those with rat leprosy as regards the content of free lipoids, as measured by the Calmette reaction (activation of cobra venom). The serum of human leprosy activates the venom, but a positive reaction has no specific value because it is obtained in tuberculous and syphilitic cases, in insane persons and even in healthy ones; a negative reaction indicates the absence of leprosy. The fixation of lecithin by tubercle bacilli (the reaction of Calmette, Breton and Massol) cannot be used with the Stefansky bacillus which, containing lipoids, itself activates cobra venom. —ET. BURNET

HASEGAWA, K. Ueber die Blutgruppen bei Leprakranken in Japan. [Blood grouping in leprosy cases in Japan.] *La Lepro* **3** (1937) 769-790 (Japanese; German abst. p. 59.)

In the years 1935-1937 the ABO blood grouping was determined in 1,426 cases of leprosy, 1,009 males and 417 females. The findings show that the "biochemical race index" of Hirschfeld is 1.45; they are of the "Hanan type" of Ottenberg. No distinct differences between this group of patients and healthy Japanese is seen, or between males and females. Nor do the form of the disease, the age at its onset, the present age, or the prognosis affect the findings.—[From a translation of the author's summary.]

HADDOW, P., SERGEANT, G. L. AND STURTON, S.D. Blood lipoids in leprosy. *Lep. Quart.* **11** (1937) 132-137.

The authors determined the cholesterol content of the blood in 54 cases, which were divided simply as light, severe, "burnt out" and "symptom-free"; one group had lepra reaction. In total, 40 of the cases (74%) gave readings below normal; in 4 instances (7.5%) it was above normal. Of the severe cases all but one was low; of the 25 slight ones 60% were low, 10 cases

being normal or above. Of the 9 reaction cases 7 (78%) were low, 1 normal, 1 above. These findings, it is pointed out, are in general agreement with those of other investigators. —H. W. W.

LOWE, J. AND DE, N. K. Tests of the suitability of hydnocarpus oil for injection. *Lep. India* 9 (1937) 49.

Two tests for the suitability of hydnocarpus oil for injections are described, one being the well known test for acidity and the other being the less known test for peroxides which, in untreated oils, may be a better test. Simplified methods of doing these two tests are described.—AUTHORS' SUMMARY

BARANGER, P. Sur le pouvoir d'association du cholestérol avec quelques édifices aminés a caractere lipoidique. [Power of association of cholesterol with certain amino structures of lipid character.] *Ann. Physiol. et Phys.-Chim. Biol.* 13 (1937) No. 2.

[So far as can be told from an abstract in *Bull. Inst. Pasteur*, 35 (1937) 1026, this article is adequately covered by the summary of the paper presented at the Cairo congress, preceding issue, p. 460, and by those of articles by Flandin et als, in the same issue, p. 453, and in 5 (1937) 549.]

MARCHOUX, E., CHORINE, V. AND KOEHLIN, D. Le bacille de la lèpre et le système nerveux. [The leprosy bacillus and the nervous system.] *Ann. Inst. Pasteur* 59 (1937) 549-576.

After an abundant inoculation of Stefansky bacilli onto and into the brain of rats, the infection is propagated around some centers, penetrates in them to the ependyma, and affects the cord, the roots, the branches of the corda equina and the sciatic nerves. The dura mater especially, and also the pia mater, become the seats of lepromas. The propagation is effected by the histiocytes along blood vessels and along nerve fascicles on the sheaths of Henle and of Schwann. The authors also admit that transportation may be by the lymph current, and finally, under the conditions of the experiments, by the cerebrospinal fluid. An important fact is that the neurones are spared; the authors have not found parasitized neurones as described by Lie (1894) in human leprosy. If in the rat some of them seem infected, it cannot be said that the bacilli are not carried there by the blade in the preparation of the sections. The nervous tissue possesses an evident resistance to the leprous infection. When groups of bacilli are encountered in the cells of the sheath of Schwann, they are gathered at one pole of the nucleus; perhaps the nucleus and the bacilli have opposite electrical charges. In highly infected rats there is evidence of an irritative state of the nervous system, of meningitic origin. In very advanced cases there is marked cerebral edema, causing alteration of the nerve cells. —ET. BURNET

MARCHOUX, E. AND CHORINE, V. Infection des rats avec le bacille de Stefansky par la voie digestive. [Infection of rats with the Stefansky bacillus by the digestive tract.] *Bull. Soc. Path. exot.* 30 (1937) 268-270.

Marchoux and Sorel in 1912 showed that very young rats were infected by ingestion. The present authors have found that the intestinal mucosa of adult rats is permeable. The rats, following experimental ingestion with the aid of a soft probe, seem to be infected especially through the upper part of the digestive tract; the permeability of the intestinal wall is indicated by the presence of bacilli in the mesenteric glands. The authors remark



that attention is not sufficiently drawn to the possibility of infection by this route in human leprosy. —ET. BURNET

GRALL, A. Le blocage du système réticulo-endothélial dans la lèpre murine. [Blockade of the reticulo-endothelial system in rat leprosy.] Bull. Soc. Path. exot. 30 (1937) 636-643.

Blockade of rats was done by intravenous injections of carmine, India ink, and powdered charcoal. The rats were sacrificed and studied microscopically after 10 minutes, 4 hours, 24 hours and 3 months. The organs which become especially charged with the bacilli are the liver and spleen; they are removed from the lung and brain more or less quickly. Bacilli are eliminated in the urine and, especially, the feces. The important observation is that control rats behave much the same as injected ones; blockade has hardly any influence on the evolution of the infection. The same cells, in particular those of Kupffer, contain at the same time particles of the injected materials and bacilli. —ET. BURNET

WATANABE, Y. Experimental studies on animals concerning leprosy. Report VII. Filtration tests of virus of rat leprosy. Kitasato Arch. Exp. Med. 13 (1936) 348-353.

After reference to the work of Markianos and others in passing the virus of rat leprosy through Chamberland L<sub>2</sub> filters, the author describes confirmatory experiments with that filter and possibly with L<sub>3</sub>, but negative from the use of the Berkefeld filter.—[Abstract from *Trop. Dis. Bull.* 34 (1937) 318.]

LOWE, J. AND DHARMENDRA. A study of *M. leprae muris* in tissue cultures and in chick-embryo medium. Indian Jour. med. Res. 25 (1937) 329-339.

Briefly summarizing the work on the bacteriology of human leprosy which has already been done, the writers, reviewing their experiments on the cultivation of the rat leprosy bacillus, conclude: (1) In rat-tissue cultures and in minced chick-embryo medium no evidence of multiplication was obtained. (2) There was no evidence of change from acid-fast to nonacid-fast forms, and in the tissue cultures there was no difference in the staining properties between the bacilli in the tissue and those in the surrounding medium. (3) No change in staining properties was observed (a) on death of the tissue culture, (b) after seeding bacilli on dead tissue, (c) after seeding bacilli on plasma and embryo extract without any tissue, or (d) after seeding and incubation in chick-embryo medium for ten weeks. (4) The only nonacid-fast organisms found in their preparations were apparently contaminants, and these could not be made acid-fast by subculture in the presence of living tissue. They were unable to confirm the finding of Salle that leprosy bacilli are acid-fast only in living tissues and multiply in tissue cultures and chick-embryo medium in alternating acid-fast and nonacid-fast forms in accordance with the conditions of the tissue. Also, their results did not corroborate the findings of McKinley, Verder and Soule regarding the multiplication of leprosy bacilli in minced chick-embryo medium.—[From abstract in *Jour. Trop. Med. & Hyg.* 41 (1938) 135-136.]

TANGUY, Y. Réaction à la tuberculine chez le cabaye et le lapin inoculés de Bacille de Stefansky. [The tuberculin reaction in guinea-pigs and

rabbits inoculated with the Stefansky bacillus.] Bull. Soc. Path. exot. 30 (1937) 836-839.

Following repeated injections of the Stefansky bacillus, 5 guinea-pigs out of 6 gave positive tuberculin reactions. Positive reactions were given by 2 rabbits about 3 weeks after the last inoculations with leprosy bacilli. Three and a half months later 3 of the guinea-pigs again gave weak reactions. Uninoculated animals are negative. Killed Stefansky and para-tuberculosis bacilli (those of Kedrowsky, Lleras, Grassberger, Rabinowitch, la fléole, and serpent) did not sensitize guinea-pigs except, in a doubtful case, the fléole bacillus; the skin reactions were weak from one to six weeks after the last injections of the organisms. The reaction is positive so long as the inflammation caused by the bacilli persists, and disappears with it.

—ET. BURNET

TANGUY, Y. Action de l'oléate et du laurate d'éthyle sur l'évolution de la lèpre murine expérimentale. [Action of the ethyl oleate and laurate on the evolution of experimental rat leprosy.] Bull. Soc. Path. exot. 30 (1937) 848.

These products, experimented with in tuberculosis in the guinea-pig by Negre, Berthelot and Bretey, have been tested by the author in rat leprosy. The laurate hastened, and the oleate slightly attenuated, the evolution of the infection, but after cessation of the treatment the disease progressed in the usual manner.

—ET. BURNET

#### BOOK REVIEWS

MUIR, E. LEPROSY. Diagnosis. Treatment and Prevention. Indian Council of the British Empire Leprosy Relief Association, Delhi and Simla. Sixth edition (undated, but 1938), xii and 192 pp. Price 2 rupees, plus postage.

In 1924 the author published under the same title a modest, 29-page pamphlet that was intended to serve as a brief introduction for the use of physicians in India who might undertake leprosy work. The publication is now grown-up, much enlarged and completely rewritten. Two things are to be borne in mind by leprosy workers and reviewers: First, that it is designed "primarily for the use of doctors in India who wish to be put in touch with practical means of dealing with leprosy . . . and also that, for brevity, "much of the teaching found in standard text-books has been omitted..." Second, that, in introducing leprosy as a special subject to men who have little if any acquaintance with it, it is desirable to be brief, to simplify, and to teach positively, without confusing the picture by presenting conflicting opinions or experiences. That viewpoint has been maintained. The presentation is a highly personal one, based for the most part on (and therefore largely limited to) the author's experience in India, and the opinions that he has arrived at.

The book is divided into three parts, but the nine chapters of the first one cover a wide field, being entitled: (1) history and endemiology, (2) etiology, (3) bacteriology, (4) distribution of lesions, (5) clinical and histological features of skin lesions, (6) different types of lesions, (7) clinical and histological features of nerve lesions, (8) clinical features of other organs and tissues, and (9) complications. Because of brevity some are very incomplete; for example,

data on "endemiology" except for India are lacking, and there are conspicuous omissions regarding etiology and bacteriology. On the other hand Chapters 5 to 8 are comparatively detailed, and it is here that the greatest surprise is found.

Nowhere in the discussion is there a clear-cut statement of the differences between the two recognized types of the disease, in fact it would seem that their distinction is avoided deliberately. It is true that the Manila Conference classification is reproduced, with no elaboration or explanation for the benefit of beginners, but it is stated (p. 21) that "though leprosy is commonly divided into cutaneous and neural leprosy *according to whether skin or nerve is clinically affected*, yet in all but a very small minority of cases both are seats of the infection. The *typical leprosy lesion* is 'neurocutaneous'..." (The italics are ours.) For these reasons the various lesions of both types are described together, as if there were no important differences in their nature. This assimilation is carried so far that the term "leproma," which is universally used to designate the lesions of the cutaneous (now "lepromatous" type, is avowedly extended to embrace "all lesions... produced by the presence of *B. leprae*," including those of the skin in neural leprosy, the "leprides"—which term is nowhere to be found. Throughout the entire discussion emphasis is laid on one main distinction between different cases and their lesions—and, indirectly, between the types—namely, "resistance." So many conditions are explained on the basis of low or high resistance that it would seem that the concept of variation of that factor is purely quantitative; there is no suggestion that qualitative differences may exist.

In the clinical descriptions and in the chapters on diagnosis there is a wealth of information, as is to be expected from the great experience with the disease as it occurs in India that the author has had. One might expect more to be said about the earliest lesions, definite and suspicious, which are so important to the field worker who has to recognize and to evaluate as regards prognosis the very early and slight cases. The diseases that complicate leprosy (tuberculosis, nephritis, etc.) are among the omitted subjects, except for incidental mention. Lepra reaction is dismissed briefly. Discussion of it pertains mainly to the febrile condition in lepromatous leprosy. A new concept is introduced in that the related condition in "highly resistant patients... chiefly of neural type" is distinguished as "recovery reaction." The terms "primary neural" and "secondary neural" are given new meanings, which may prove confusing.

Concerning the section on treatment little comment is necessary. "General" and "special" phases of treatment are discussed, and also the treatment of lepra reaction. No specific recommendation is made regarding the chaulmoogra preparation that should be used. Some stress is laid on the ethyl esters, but it is said that pure oil is probably equally effective; the sodium salts (alepol) are mentioned. Emphasis is laid on intradermal infiltration as undoubtedly more effective than intramuscular or subcutaneous injection. It is said, without explanation, that "practically all effective forms of special treatment produce a negative phase, or temporary depression of the patient's resistance;" also that "no real improvement can be made through any yet known drug apart from raising and maintaining the general health

of the patient." Nothing is said about differences in procedure with different types or varieties of cases.

The section on prophylaxis follows the usual lines with, in general, special reference to conditions in India and methods used there. It is admitted that the disease cannot be controlled solely by treatment as that now stands, and that out-patient clinics, "even if there were sufficient of them and all the patients could be induced to attend, could never control leprosy." The so-called propaganda-treatment-survey method and village and individual isolation are discussed, and separate chapters are devoted to the leprosy clinic and the leprosarium. Eight appendices giving details regarding the preparation of ethyl esters as it is done in Calcutta, the sedimentation, leprolin and iodide tests, and methods of record making.

In rejoinder to some of the comments here made the limitation set on the book might be pointed to. Despite that handicap, the book will unquestionably be valuable to many; certainly no one in recent years has produced a work more useful than this one for its avowed purpose. Physically it is pleasant to handle. It has firm covers, the pages are of full book size, the type is large and clear, and it is quite fully illustrated (85 figures). The publisher has economized with regard to the quality of the paper, and in consequence many of the pictures are disappointing. One appears twice (as Figs. 14 and 50). Editorially the book has, for the most part, been handled quite well, though a few oddities, notably "swole up" (in the legend of Fig. 34) and "infectee" (used repeatedly), have been allowed to stand.

—H. W. WADE

WHITAKER, L. AND ROY, A. *Leprosy. History, Aetiology, Bacteriology and Pathology.* Published by Purulia Leper Home and Hospital, Purulia, Bihar (1937) pp. 17. Price, As. 8.

In this short book the authors give much valuable information which a leprosy worker should know. The history of leprosy in the world, the different views about its causation and the pathological findings are discussed briefly. It would have been better if an explanatory note had been added to the diagram illustrating the factors upon which depend the development of the disease in contacts. There are some printing mistakes and irregularities. Owing to these and the many abbreviations used, certain portions of the book are rather difficult to understand. In the authors' words "there is no claim made to originality, the pamphlet simply representing the results of reading and experience gained in the work of the colony (Purulia Leper Home and Hospital)."—[From *Indian Med. Gaz.* 72 (1937) 643.]

WHITAKER, LORNE. *Leprosy Treatment (A Summary).* Published by the author from Purulia Leper Home and Hospital, Purulia, Bihar. (1937) pp. 16, with 3 appendices. Price, As. 8.

It is only recently that medical men in India have begun to take an interest in leprosy. The author, in an attempt to help the doctors who are doing leprosy work, has summarized the different methods of treatment and has appended a list of prescriptions which his predecessor used in Purulia Leper Home and Hospital. The book gives much useful information about the preparation of esters, the causes of pain after injection, the line of routine treatment and treatment of complications. There are printing mistakes here and there which have made some portions unintelligible. Abbreviations

have unnecessarily complicated the matter and some of them may be difficult for the new practitioner to understand.—[From *Indian Med. Gaz.* 72 (1937) 643.]

SCHILIN, GEORJ. Säumiger Tod. Erzählung aus einem Leprosarium. [Delayed Death. Tales from a Leprosarium.] Julius Kittls, Leipzig.

Themes of this kind are especially dear to the Russian writer, the interpreter of human suffering, and in this respect Schilin's book may be praised. Books of this kind are usually sensational, but with a single exception the scenes which the author, who undoubtedly is a physician, relates here show nothing of that sort. They exhibit more of the deepest pity for those who are afflicted with the "black disease," and are depicted from a particularly clear psychological viewpoint.

It is a description of a home for lepers and of the sufferings of these people destined to death, sufferings alleviated through the love and care of their attendants. Every story shows a different state of leprosy and its reaction on the spirit; from gloomy, apathic endurance to delirious outbreak there is the same leading motive, the hope for the miracle of cure. The leprosarium is a small settlement in the steppe, sharply isolated and far away from "above," the world of the healthy toward which no bridge leads. Almost all of the patients have cut off their union with "that side"; they only encompass it in their thoughts. This "above," from where comes the proprietor, the worker, the student, the prostitute, is very different from the lepers' world. Leprosy makes them all equal, it dissolves all social differences.

There is the physician who leaves home and conveniences to work here, and the old servant who is here to care for his master, disregarding the risk. The street girl Olga lives here with, for the first time, a strong affection, and waits on the loved man until she is released and cured—an infrequent occurrence in this institution. The end of the book is shocking: the young lady co-worker of the physician discovers on herself the first signs of the dreadful disease.—[From a translation of reviews in German newspapers.]