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.

McCoy, G. W. History of leprosy in the United States American Jour. Trop. Med. **18** (1938) 19-34.

One of the interesting statements made in this review is that a Mexican authority, Dr. Jesus Chico, believes that leprosy existed in Mexico in pre-Columbian days and asserts that Cortez erected a hospital for lepers. The author takes the attitude, on rather odd grounds, that leprosy of the Bible was our leprosy. Most of the leprosy that was brought into the United States "fell upon stony ground" and it was not until 1899 that the first official inquiry about it was made; 278 cases were found, 186 of whom were probably infected in the United States. The establishment of a leprosarium was recommended then, but not done until much later. The foci in Louisiana, Texas and Florida are mentioned, and the very slight ones in South Carolina and Georgia; cases found elsewhere are almost entirely imported ones. The history of Norwegian leprosy in the central northwestern states is gone into at some length. To Minnesota there came at least 50 lepers; 7 cases developed in the first generation born in the country and only 1 in the second; one of the seven survives, and the eighth has apparently recovered—perhaps never had the disease. —H. W. W.

Baliña, P. L. and Basombrio, G. Constataciones et donnes sur la lèpre en Argentina, d'apres notre observation personelle. [Personal observations and data on leprosy in Argentina.] Rev. Brasileira Leprol. **6** (1938) 91-111.

This article [which was presented to the Cairo Congress without summary] reviews the history of the antileprosy campaign in Argentina. The authors' own observations comprise 1,004 cases. The proportions of foreigners (41%), and of persons of Italian parentage, are surprisingly large. In three-fourths of the cases the first symptoms are cutaneous, which indicates the necessity of special knowledge of dermatology in order to diagnose early leprosy. Once more it is shown that there are increasing numbers of cases in the Federal City (autochthenous) and in the provinces of the littoral, with few in the mountainous zone of the Andes. The cases are classified according to the scheme the authors proposed at Cairo. Most of them were mixed, and more than 50% were bacilliferous. Fourteen cases of conjugal leprosy have been observed. The importance of the social service, to detect cases among contacts, is noted; also that of the serological behavior the patients. Biopsy of affected nerves is indicated as a diagnostic method. Treatment has been helpful in most cases, and in the tuberculoid and neural forms the percentages of apparent

clinical and bacteriological cures is high. Reference is made to the official efforts that are being made with regard to the campaign against the disease in the country.—[From abstract in *Prensa Med. Argentina*, Oct. 5, 1938.]

MacLeod, J. M. H. Leprosy in Great Britain at the present time. Lep. Rev. **9** (1938) 5-12.

The comparatively few cases in Great Britain, probably 75 or 100, are mostly imported ones in British subjects returning from abroad; they are of all grades of society, from artisans to professional service men; the majority come from the West Indies, British Guiana, South Africa and India; relatively few are women. Three cases of transmission of the disease in the British Isles [previously recorded] are noted, all in children living with adult lepers. The history of leprosy is briefly outlined, its contagiousness is discussed, and the work of the St. Giles Homes for British Lepers, which accommodates 12 cases, is briefly described.—[From abstract in *Lep. in India* **10** (1938) 65.]

Truffi, M. [Le problème de la lèpre en Italie. The problem of leprosy in Italy.] Forze sanit. **6** (1937) 1514-1518.

Leprosy is not only a problem of the Italian colonies; it is also one of the home country, where there are small endemic foci imported from Central and South America. The number of cases is around 300. The government has decreed obligatory declaration of cases, treatment of them at the expense of the state, and obligatory hospitalization of contagious cases, but the application of these measures is impeded by the fact that there are not enough special institutions. Actually there are four hospitals for leprosy, at Cagliari, Alberobello, Génes and Turin; at Padua a pavilion that was falling into ruins has recently been closed. Lepers cannot be isolated adequately in the ordinary hospitals. Because of the extreme chronicity of the disease they cannot be interned in small places; it is necessary to create larger asylums where there is an impression of liberty and the possibility of work. This should be done, as it is expected that the numbers of cases coming from the Italian colonies will increase.—[From abstract in *Bull. Off. Internat. Hyg. publ.* **30** (1938) 1590.]

Bertaccini, G. [La lèpre en Pouille, en Basilicate, en Calabre; données cliniques, statistiques, epidemiologiques. Leprosy in Apulia, Basilicate and Calabria; clinical, statistical and epidemiological data.] Gior. italiano Derm. e Sifilol. **77** (1938) 617.

During the autumn and winter of 1937-8 the author made a special inquiry regarding leprosy in the three regions mentioned, which form the foot and ankle of the Italian peninsula. The purpose was to make at least an approximate census of cases and to collect epidemiological data regarding the disease. Nine new cases were discovered, bringing the total of known ones in this region to 90 (46 in Apulia, 3 in Basilicate and 41 in Calabria), of which only 31 are in leprosaria. These cases are distributed in a small number of centers of population, in some of which it is known there have been lepers for many years, perhaps for centuries. Most of the cases are autochthenous, and are contact infections ascribed to early life. Clinically, most of them are nodular or mixed, of serious

prognosis; no great benefit has been derived from the different treatments that have been tried on them. The author gives a wealth of statistical and epidemiological details which it is impossible to summarize, nor can any general conclusion be drawn from them. It is pointed out that antileprosy activities should be intensified, and that hospitalization should be made obligatory. The author believes that thought should be given to the eventual sterilization of lepers, to aid in the extinction of the endemic foci.—[From abstract in *Ann. Derm. et Syphilig.* **9** (1938) 920. This paper was also presented at the Cairo congress; see THE JOURNAL **6** (1938) 428.]

VAN BREUSEGHEM, R. La lèpre chez les Pygmées. [Leprosy among the Pygmies.] Ann. Soc. belge Méd. trop. **18** (1938) 135-137.

[This paper was sent to the Cairo meeting and will appear in its transactions. For the author's summary see THE JOURNAL **6** (1938) 427.]

DE BRAUWERE. P. Vue d'ensemble sur la situation de la maladie du sommeil et de la lèpre dans les territoires sous l'action du FOREAMI durant l'année 1936. [General survey of sleeping sickness and leprosy in territories under the supervision of FOREAMI during 1936.] Ann. Soc. belge Méd. trop. **18** (1938) 381-418.

The numerous statistical details must be consulted in the original. Endemicity in Kwango is 2.2 per mille. Neural cases predominate. Isolation in agricultural villages steadily progresses. —A. DUBOIS

WADE, H. W. A report on the Cairo Leprosy Congress. Nat. Res. Coun. Philippines, Bull. No. 18, Nov., 1938, pp. 22-41.

This report reviews briefly the events that led up to the convening of the leprosy congress that was held in Cairo, Egypt, in March, 1938, and that were responsible for its unusual, dual nature—that of the usual general meeting, and in addition that of a (multiple) round-table conference for the preparation of formal reports on assigned topics. From the complete list of 160 titles of papers that were presented, and the 118 authors' summaries that have (now) been published in THE JOURNAL, the more noteworthy contributions are reviewed. The reports of the four technical committees, on (*a*) classification, (*b*) treatment, (*c*) epidemiology and control and (*d*) cultivation of the bacillus are summarized. —AUTHOR'S ABSTRACT

RODRIGUEZ, J. N. The importance of regional variations in the epidemiologic features of leprosy. Nat. Res. Council of the Philippines, Bull. No. 18, 1938, pp. 1-21; *also* Month. Bull. Bu. Health (Manila) **18** (1938) 577-589.

The intensive method of epidemiological survey, first undertaken in the Philippines, has confirmed the observation of some workers, notably Wade, that regional variations in the clinical features as well as epidemiological characteristics of leprosy do exist. For instance, the proportion of open (usually lepromatous) cases to closed (simple macular, tuberculoid, polyneuritic) cases may vary widely in different regions, ranging from as low as 5 percent in some parts of Africa to 70 percent in certain provinces of Java. Again, the disease seems to manifest itself earlier in some countries than in others, leading to a corresponding increase in the proportion of children among the lepers. While intrafamilial infections predominate in some regions, usually

in association with the "joint family system," extrafamilial contagion is at least as important in others. Emphasis is given to the need of undertaking preliminary epidemiological investigations in order to determine the main characteristic features of the disease in a country before a suitable method of control for that country can be formulated. A table is given which shows marked variations in the incidence of leprosy in the different provinces of the Philippines, together with a graph showing the age distribution of all the lepers under segregation as compared with the corresponding age distribution of cases found in a survey area, and that of the normal population.
—AUTHOR'S ABSTRACT

FLANDIN, C. Recent advances in leprosy, and the methods adopted for dealing with the problem in France. British Jour. Derm. & Syph. **50** (1938) 399-411.

In this paper, delivered at the Royal Society of Medicine in London, the author discusses and elaborates interestingly on subjects that were discussed at the Cairo congress, and outlines his own work in France. A point that is not generally recognized is that in treating lepra fever—which he says, may resemble malaria, Mediterranean fever, typhoid or tuberculosis—when the therapy that is apparently indicated fails, antileprosy treatment will sometimes bring quick results. The number of cases infected in Paris which he has discovered has now reached 10. The time between exposure and diagnosis, as seen in troops sent from France to a leprous region and then returned to France, varies from six months to several years. The author is convinced, however, that there are manifestations of the infection before the disease can be diagnosed. Neuralgia or neuritis lasting sometimes for months may precede the classical lesions. Attacks of rheumatism, typical except that they do not yield to sodium salicylate, constitute another early manifestation of leprosy. [See THE JOURNAL **6** (1938) 446 for abstract of paper on this subject presented at the Cairo meeting.] —H. W. W.

SOREL, F. P. J. Prophylaxie de la lèpre dans les colonies françaises. [Prophylaxis of leprosy in the French colonies.] Bull. Off. Internat. Hyg. publ. **30** (1938) 1-21 (suppl. No. 6).

To the Ministry of Colonies, the health service of which the author directed for many years, is due a renewal of activity regarding the prophylaxis of leprosy in the colonial empire of France. This article, which is illustrated, describes the work recently accomplished in each colony, among other things being the creation of the Central Institute of Leprosy at Bamako, A.O.F., of which he was the promoter. —ET. BURNET

PIÑERO GARCIA, P. P. Lo "autóctono" en leprologia. ["Autóctono" in leprosy.] Semana méd. (1939) No. 2358, 650-655.

"Autóctono" must regain its legitimate significance and be restored to its true etymological and historical concept, such as implicitly appears to have been the spirit of the recommendations for the systematization of the epidemiological studies of leprosy given by the two last international conferences. In consequence, the term should be applied only to those cases of unknown contact, with permanent local residence of 5 or 10 years, in which it has not been possible to determine the source of infection, near or remote, after a careful familial interfamilial and extrafamilial search. —G. BASOMBRIO

GRECO, N. V. Combatir y vencer la lepra. [Combat and conquer leprosy.] Semana méd. (1939) 375.

This article deals with a brief talk for delivery by radio-telephone in behalf of the organization known as the "Patronato de Leprosos." In it the author pays tribute to the association which has constructed a small leprosarium of 50 beds in the Territory of Formosa. The leprosarium cost $47,637; or $953 per bed. —G. BASOMBRIO

MITSUDA, K. Ueber Vasektomie bei Leprösen. [Vasectomy in lepers.] Japanese Jour. Dermat. & Urol. **41** (1937) 116 (abst.).

On the basis of 20 years experience of vasectomy in lepers, the author affirms that the measure is indicated as a preventive method because it has no influence on the libido of the patient while it prevents pregnancy, which leads to progression of the disease. The method of operation which he recommends is resection of the lower section of the spermatic duct, through an incision in the posterior surface of the scrotum—[From a translation of the abstract.]

OBERDÖRFFER, M. Untersuchungen über den Leprabefall in Südost-Nigeria. [Investigations of leprosy in Southeastern Nigeria.] Arch. Schiffs- u. Trop.-Hyg. **42** (1938) 310-321.

In the provinces of Onitsha and Owerri the average leprosy incidence is between 3% and 5% of the population, and the number of cases in that region must be on the order of 150,000. Only 1,500 are isolated. About 17% of the lepers are in advanced mutilated or nodular stages of the disease and dependent upon their fellows; 30% more show generalization of the disease and are of serious prognosis; only about 44% show clinical lesions that indicate high resistance of the organism to the infection. Women show a distinctly higher resistance than men. Most of the lesions are of the macular class; high degree lepromatous lesions are unusual. Children only seldom show manifest leprosy. The author has sought to distinguish the early signs of the infection from those of frambesia. Contrary to the findings in other lands, many of the macules are bacteriologically positive at certain seasons, but examination at other seasons shows most of them in Nigeria, also, to be negative. The author holds that there is reason to believe that, under seasonal influence in Nigeria, lesions of the macular group may be infectious. —[From author's summary.]

OBERDÖRFFER, M. Untersuchungen über die prädisponierenden Faktoren der Lepra in Süd-Nigaria. [Investigations on the predisposing factors of leprosy in Southern Nigeria.] Arch. Schiffs- u. Trop.-Hyg. **42** (1938) 367-372.

Undernourishment and weakening diseases create the basis for the leprous infection in a tropical climate. Seasonal fluctuations in the curve of leprous manifestations are explained as follows: High toxicity of *Collocasia* vegetables in December causes a flaring up of latent leprous infections. The curve falls with decreasing toxicity of these vegetables, to increase again in March under the weakening influence of heavy outside work. From April on, less *Collocasia* is eaten and the curve falls, to rise again gradually until August with increasing scarcity of food. In September and October no *Collocasia* is eaten and the figures fall to the minimum. In November the use of *Collo-*

casia begins again, and the figures rise to a maximum in December. This observation may explain why we must consider so many cases of macular leprosy as sources of infection. In December and January over 40% of all clinical lesions of that type were found to be bacteriologically positive, whereas in a similar investigation of such lesions in April the bacteriological findings were usually negative. The author holds that it is worth further investigation to determine whether or not a periodically reduced resistance-capacity of lepers leads to increased discharge of bacilli, which at that time can be more easily transmitted to healthy persons who are themselves under the influence of decreased resistance. Histological investigations, to be reported later, have shown small lepromatous centers in distinct tuberculoid lesions, and it is believed that the discharge of bacilli from such foci, under the seasonal weakening conditions described, can explain the infection capacity of bacteriologically negative cases in general.—[From a translation of author's summary.]

QUERANGAL DES ESSARTS, J. Elimination des bacilles de Hansen au niveau des lésions cutanées fermées de la lèpre. [Elimination of the Hansen bacillus from closed cutaneous lesions.] Bull. Soc. Path. exot. **31** (1938) 806-809.

In reality, the author states, there is no such thing as "closed leprosy." Even through intact skin bacilli are eliminated by desquamation, by the fall of hairs, and in the sweat. It cannot be said that they are alive, but their appearance—form and coloration—is the same as that of the bacilli in the deep lesions. [It is to be noted that the author uses the term "closed leprosy" in a different sense from that of most modern workers, who apply it only when bacilli cannot be demonstrated from the skin lesion or the nasal mucosa.] —ET. BURNET

TAJIRI, I. Histologische Studien über die akute Infiltration der Lepra. [Histological studies of the acute infiltration of leprosy.] Japanese Jour. Dermat. & Urol. **41** (1937) 116 (abst.).

Acute infiltration occurs in nodular leprosy both at the beginning of the disease and in the stage in which the nodules or infiltrations are absorbed. It is frequently accompanied by fever and neuralgic pains, and clinically it appears to be similar to the acute onset of neural or macular leprosy, though the two conditions can be well differentiated histologically through the acute infiltration of lepra cells and the positive finding of bacilli around the nerves.—[From a translation of the abstract.]

GOUGEROT, H. AND DEGOS, R. Réactivation de lépromes aux points d'inoculation d'intradermo-réactions à la tuberculine. [Reactivation of lepromas at the points of inoculation of intradermal tuberculin reactions.] Bull. Soc. fr. Dermat. et Syph. **45** (1938) 279-282.

The authors have investigated the allergic state of the invisible lepromas which are demonstrated by intravenous injections of methylene blue; they used for this purpose different proteins, but especially tuberculin. Only the latter induced anything more than papular reactions, either in the blue areas or in normal skin. In two instances the tuberculin induced the formation of small nodules, taken at first to be unusually intense but banal positive reactions but found to be persistent, progressive nodules which became 15 and 20 mm. in diameter. No such reaction

occurred in healthy areas, and there was no apparent reaction condition locally or elsewhere. Histologically one of the nodules was found to be a leproma, made up chiefly of large, vacuolated Virchow cells, with extremely numerous bacilli. A control specimen from a blue spot like the one injected showed a different lesion, mainly epithelioid and with very few bacilli—a tuberculoid condition. [This condition is apparently believed to have developed from the lepromatous one as a result of chromotherapy.] The tuberculin, therefore, had induced a complete modification of the lesion, from the tuberculoid to the lepromatous. [Flandin remarked that he and colleagues had found that injection of chaulmoogra into dyschromic plaques caused specific reactions, not observed in healthy skin, in which numerous bacilli can be found; see THE JOURNAL **6** (1938) 453. The material of the present article was included in one sent to the Cairo meeting, without authors' summary; see THE JOURNAL **6** (1938) 452.] —H. W. W.

GOUGEROT, H. AND DEGOS, R. Histo-bactériologie des lépromes invisibles revélés par le bleu de méthylène. [The histo-bacteriology of invisible lepromata revealed by methylene blue.] Bull. Soc. française Dermat. et Syphil. **45** (1938) 33-36.

The authors have previously interested themselves especially with the "invisible lepromas," those lesions which are without visible external change and are therefore unsuspected, but which after intravenous injections of methylene blue show up either as round or oval blue spots, 2 to 4 cm. in diameter, or as larger irregular areas. They now report the histological findings in such lesions. A biopsy specimen was, macroscopically, blue throughout its depth except for a narrow (1 mm.) superficial zone. Bacilli were found, usually modified by the methylene blue treatment. In unstained preparations no bacilli were seen, nor any cell colored blue. Sections showed that all but an insignificant amount of the infiltration was below the subpapillary layer, in the middle and deeper zones of the skin. This infiltration was composed chiefly of Virchow's foamy cells, with bacilli in considerable numbers—as numerous as in visible lepromas. The lesion, therefore, is simply a leproma that has not developed in the superficial layers of the skin and which is not sufficiently marked to be visible. The authors are unable to explain why such lesions should remain so undeveloped. With regard to the question of what element in the lesion fixes the color, they refer to the opinion of Marchoux and Chorine that it is the bacilli themselves, but they offer no observation of their own on the point. [The material of this paper was included in one sent to the Cairo meeting, without authors' summary; see THE JOURNAL **6** (1938) 452.] —H. W. W.

VIEIRA, J. P. AND DE ABREU, M. Contribuição ao estudo das modificações papillares na lepra. [Study of changes of the finger-prints in leprosy.] Rev. Brasileiro Leprol. **6** (1938) 15-20.

The authors examined 216 leprous patients with different forms of the disease and concluded that there are alterations in 35% of cases, the most pronounced being in the neural form. The changes begin in the auricular and ring fingers and spread to the others. In the neural and advanced forms there is an almost pathognomonic design, so that in advanced

neural cases and in cripples a diagnosis of leprosy can be made by dactyloscopy.—[Authors' summary.]

MUNEUCHI, T. Beiträge zur Kenntnis der Pathologie der Milz bei Leprösen. [Contribution to the study of the pathology of the spleen in leprosy.] Japanese Jour. Dermat. & Urol. **41** (1937) 115 (abst.).

On the basis of a study of 150 autopsies the author arrived at the following conclusions: (*a*) In macular leprosy the spleen does not show any specific change, clinically or histologically. (*b*) In neural leprosy no particular deviation from the normal is seen macroscopically, though the size is occasionally reduced, or the consistency may be somewhat softer than normal; microscopically there is leprous infiltration of slight degree (in 5% of the cases). (*c*) In nodular leprosy the spleen is frequently enlarged and sclerotic and leprous infiltration is always detectable microscopically; lepra bacilli are only slightly degenerated. (*d*) Tuberculosis was found in 23% of all cases, 27% of nodular and 14% each of neural and macular cases.—[From a translation of the abstract.]

MARCHOUX, E. AND CHORINE, V. Appareil phagocytaire et bacille lépreux. [The phagocytic mechanism and the leprosy bacillus.] Festschr. Bernard Nocht. Hamburg, J. J. Augustin, 1937, pp. 283-289.

The leprous granuloma consists of phagocytic cells derived from histiocytes. India ink permeates the leprous cells of the superficial layer of the nodules, and does not permeate—or does so only late—those in the central parts. Methylene blue and the majority of the other dyes used in leprosy are fixed by all of the phagocytic cells of the body. The surface of the body of the leprosy bacillus also fixes methylene blue, and also metallic substances: iron (relatively weakly) thallium (more strongly) and tellurium (especially strongly). The possibility of finding some such substances, which on the one hand adhere energetically to the bacilli and damage them, and on the other hand are not poisonous to the body cells, opens a new way for the treatment of leprosy.—[From abstract in *Arch. f. Schiffs.- u. Tropen.-Hyg.* **42** (1938) 235.]

PALDROCK, A. Die Blutgruppen der Leprösen in Estland. 2. Mitteilung. Festschr. Bernhard Nocht. Hamburg, J. J. Augustin, 1937, pp. 440-445.

After citing the findings of various authors with regard to the blood groupings of the people of Estonia, the author gives his own in lepers and in nonlepers from the same regions of the country. He finds that lepers and healthy persons show apparent differences in this respect, suggesting that individuals belonging to groups A and O may be predisposed to leprosy. Further study is required to determine whether or not this condition is to be considered one of the factors that predispose to the infection.
—H. W. W.

DUBOIS, A. Classification des formes cliniques de la lèpre selon la Conférence Internationale du Caire de 1938. [Classification according to the Cairo conference.] Bull. Inst. Roy. col. belge **9** (1938) 421-428.

Summary and comments on the report of the classification committee of the Cairo conference. An attempt is made to combine the qualitative and quantitative classifications of the committee. —AUTHOR'S ABSTRACT

TISSEUIL, J. De l'évolution et de la classification de la lèpre tuberculoide. [On the evolution and classification of tuberculoid leprosy.] Bull. Soc. Path. exot. **31** (1938) 803-806.

Tuberculoid leprosy is a manifestation of cutaneous resistance, comparable to lupus and especially lupus erythematosus. It is chronic and is accompanied by nerve disturbances which may be serious, but it does not evolve toward the lepromatous form. By its structure and evolution it is essentially different from cutaneous leprosy. —ET. BURNET

SOUZA CAMPOS, N. Lepra e molestia de Recklinghausen familiar. [Leprosy and family Recklinghausen's disease.] Rev. Argentina Dermatosif. **22** (1938) 641-654.

The author reports observations in a family of 34 members, of whom 2 were not examined. Leprosy was found in 19 of them and Recklinghausen's disease in 10; both diseases were present in 9. He cites the divergent opinions regarding neurofibromatosis, concluding that, perhaps, leprosy might have been a factor in the production of that condition in these cases. —G. BASOMBRIO

RODRIGUES DE SOUZA, A. Anetodermia de Schweninger e Buzzi leprogenica. [Anetodermia of Schweninger and Buzzi of leprous origin.] Rev. Brasileiro Leprol. **6** (1938) 161-172.

The author describes a case of mixed leprosy in which the clinical picture was much like von Recklinghausen's disease, but indistinguishable from the anetodermia of Schweninger and Buzzi: the characteristics including the location of the lesions on the external surfaces of the members and the upper chest, the color varying from yellow to slate and violet, and spontaneous pain with exacerbations in monthly periods. The causative condition in the production of this clinical picture was leprosy, as shown by laboratory examinations of smears and histologic preparations.—[From author's summary.]

RAMOS E SILVA, J. Leprides verrucosas. [Verrucous leprids.] An. Brasileiros Dermat. e Sifil. **13** (1938) 11-15.

The author presents a case of predominantly neural leprosy which, after an eruption of bullae on the internal part of the forearm, developed lesions very much like those of tuberculosis verrucosa cutis. One of them was removed and found not to be lepromatous in structure or to contain any acid-fast bacilli, and it did not cause tuberculosis in guinea-pigs. These lesions, which were anesthetic, are interpreted as leprids—verrucous leprids. They are different from verrucous leprotic lesions described by previous writers, which were of lepromatous nature, containing large numbers of bacilli and thus deserving the name of verrucous lepromas.—[From author's summary.]

RAMOS E SILVA, J. Quatro licções sobre o diagnostico clinico da lepra. [Four lectures on the clinical diagnosis of leprosy.] Brasil-med. **51** (1937) 1127-1130; 1147-1153; 1163-1166; 1185-1188.

This series of four lectures was part of a university extension course organized by the Centro Internacional de Leprologia. Although they do not bring forward any new matter—they did not profess to—they are

mentioned here because of the excellent presentation of the position and of the points with which they were intended to deal. In the first the fundamental diagnostic data are stated and stress is laid on the importance of early recognition of the disease. In the second the special diagnostic points between leprosy and tuberculosis and syphilis. The third is equally important and considers in detail the distinctions between leprosy in its various forms and other dermatological affections and syndromes; in the fourth, the diagnosis of concomitant conditions. The lectures are illustrated with good reproductions of clinical cases showing the lesions referred to in the text.—[Abstract from *Trop. Dis. Bull.* **35** (1938) 288.]

MOISER, B. A note on anaesthesia in leprosy. Lep. Rev. **9** (1938) 18-19.

Emphasizing the importance of the test of tactile sensation in diagnosis, the author points out the marked variability of sensitiveness in normal individuals (African) and the importance of the mental factor. For making the test he prefers cotton wool to a feather, which he considers much too heavy; paper is useless. —H. W. W.

HOFFMANN, W. H. Zur bakteriologischen Diagnose der Lepra. [The bacteriological diagnosis of leprosy.] Festschr. Bernhard Nocht. Hamburg, J. J. Augustin, 1937, pp. 210-215.

The author holds that the bacteriological diagnosis of leprosy is still a very imperfect method which offers only a limited certainty because of the occurrence of other acid-fasts in the materials examined. The clinical diagnosis remains always the decisive one.—[From abstract in *Arch. f. Schiffs.- u. Tropen.-Hyg.* **42** (1938) 234.]

RADNA, R. La ponction ganglionnaire de sujets sains en pays d'endémie lépreuse. [Gland puncture of healthy subjects in leprosy regions.] Ann. Soc. belge Méd. trop. **18** (1938) 497-500.

The author was unable to confirm van Breuseghem's results at Pawa. He found 24.5% positivity in neural cases of leprosy as compared to 4.8% in nonleper subjects, and believes that latent gland leprosy is sufficiently scarce in this highly endemic region to give to this method a notable diagnostic value. —A. DUBOIS

DUBOIS, A. AND DEGOTTE, J. Le test à la pilocarpine dans le diagnostic des macules lépreuses. [Pilocarpine test in the diagnosis of leprous macules.] Ann. Soc. belge Méd. trop. **18** (1938) 421-427.

The authors gave intradermal pilocarpine injections (0.1 cc. of a 1% solution or 0.2 cc. of a 0.5% solution), in both the normal skin and the macules. To read the result more easily, they painted the skin with iodine and, when the alcohol had evaporated, powdered it with starch. The result was positive in 79 out of 100 cases (nerve type) and especially so in tuberculoid ones. Suspect cases showed 50% positive reactions and very doubtful ones 7%. The pilocarpine test is the most frequently positive of the several tests of macules that are made (anesthesia, bacteriological examination). —AUTHORS' ABSTRACT

DEGOTTE, J. Les troubles de la sudation dans le diagnostic de la lèpre débutante (réaction de Jurgensen and Milnor). [Disturbances of per-

spiration in the diagnosis of early leprosy (Jurgensen and Milnor reaction).] Ann. Soc. belge Méd. trop. **18** (1938) 419-420.

Anidrosis was found in 72% of the actual cases of leprosy, in 42% of patients under suspicion of leprosy, and in 29% of the slightly suspect. The author points out the practical advantage of this method and its probable specificity. Its high frequency among lepers diminishes according to the lessening of clinical indication of the disease. —A. DUBOIS

RYRIE, G. A. Treatment of leprosy. Jour. Malaya Branch, British Med. Assoc. **1** (1938) 305-315.

The purpose of this article is to provide a fairly rigid and practical outline of treatment for part-time and other workers with slight experience, and also to lay down the underlying principles which the author believes should guide alteration of dosage. Nonspecific treatment is dealt with briefly. With regard to the specific treatment of neural-tuberculoid cases, the author states that this form of the disease results from a process of bodily defence, but it is like an army laying waste the countryside it is supposed to be defending. The more active the damage done, the more vigorous must be the steps taken to control it, and in the treatment of tuberculoid leprosy the more active the lesion the more vigorous must be the treatment. Dosages of hydnocarpus oil up to 1 cc. per 10 lbs. of body weight, twice a week, are recommended. For lepromatous or malignant leprosy, the principle is exactly the opposite. If in tuberculoid leprosy a temporary increase in lesion activity is caused, not much harm is done; in fact it may do good. On the other hand an exacerbation of lepromatous leprosy (lepra fever or lepra reaction) may do irreparable damage, and ill-judged doses may cause exacerbation. A case may improve steadily on 5 cc. injections, whereas with 7 cc. reaction may be precipitated and the work of months or years ruined. In that form of the disease therefore one must be constantly on the watch, ready to decrease the dose on the slightest sign that the patient is nearing the reaction level. There are three cardinal points: (*a*) A dose that is giving improvement should be raised only with extreme caution. (*b*) The dose must lowered drastically at any sign indicating an approach to the reaction threshold. (*c*) Specific treatment must be stopped immediately if reaction appears and should not recommence for a month after it has subsided. —AUTHOR'S ABSTRACT

RYRIE, G. A. The treatment of tuberculoid leprosy. Lep. Rev. **9** (1938) 51-55.

This paper describes a number of experiments conducted in Sungei Buloh Leper Settlement to determine the treatment of choice in neural-tuberculoid cases. Five groups of 25 patients each were given: (*a*) phthalic acid dissolved in hydnocarpus oil, (*b*) ethyl esters only, given intradermally, (*c*) intravenous injections of phthalic acid, (*d*) high doses of hydnocarpus oil subcutaneously, and (*e*) injections of saline (control). A majority of the control group were worse after four months "treatment," an important finding in view of the erroneous statement sometimes made that tuberculoid leprosy is self-healing. The other experiments showed that phthalic acid (and fluorescein G.A.R.) is contraindicated in tuberculoid leprosy, as it has tended to bring on tuberculoid reaction. By far the most successful treatment consisted of large doses of hydnocarpus oil, 1 cc. for every 10 lbs. of body weight, given subcutan-

eously twice a week, preferably in divided doses in different areas if the amount exceeds 10 cc. One patient, weighing 200 lbs., received 40 cc. a week. The treatment, continued for four months, resulted in improvement in 20 cases; 2 were stationary and 2 worse. No local treatment was applied to the lesions. In one case showing marked improvement the lesion had been advancing slowly for 27 years. This is the most effective treatment of acute tuberculoid leprosy that has been used by the writer. —AUTHOR'S ABSTRACT

ROSE, F. D. Intra-dermal injections in cutaneous leprosy. Festschr. Bernhard Nocht. Hamburg, J. J. Augustin, 1937, pp. 528-530.

In early leprosy with isolated nodules or other limited foci of disease, intradermal treatment with different substances has proved to be especially good. Different preparations tried included hydnocarpus oil (which, however, frequently causes painful infiltrations or abscesses), alepol and sodium salts of hydnocarpus oil, ethyl esters of hydnocarpus oil (which are only slightly painful and are quite effective), iodo-esters of hydnocarpus oil (very effective, but productive of undesirable deformity through the persistent staining of the skin in light-colored persons). The author also used a similar preparation made by the I. G. Farben Bayer ("jantol"); injected weekly, it is almost without pain and shows the most marked and most rapid healing effect. This preparation was used for 6 months in 33 cases; in 11 of them there was complete retrogression of the skin lesions (nodules and infiltrations), 9 were very much improved, 4 were improved, 2 remained unchanged.—[From abstract in *Arch. f. Schiffs- u. Tropen.-Hyg.* **42** (1938) 234.]

MOISER, B. A note on intradermal injections. Lep. Rev. **9** (1938) 19.

In a very brief note Moiser states that after using short needles for several years he has discarded them on account of leakage and the patients' objections to the multiple punctures. He now uses an ordinary No. 23 needle, and with only one puncture he infiltrates the surrounding area by manipulation of the needle. —H. W. W.

TISSEUIL, J. Action comparée des huiles d'olive et de chaulmoogra en injection intradermique. [Comparison of the effects of olive and chaulmoogra oils injected intradermally.] Bull. Soc. Path. exot. **31** (1938) 231-233.

These oils (neutral) were injected symmetrically into tuberculoid macules. The olive oil had no effect, while the chaulmoogra oil caused the infiltration to disappear, the area resuming the normal appearance and color of the surrounding skin—[From author's summary.]

TISSEUIL, J. AND RIVOALEN, P. Action de dérivés du beurre de gorli: éther éthylique des glycérides solides, glycérides liquides, insaponifiables, en injection intradermique au niveau des taches tuberculoïdes. [Action of the derivatives of the butter of gorli (the ethyl esters of the solid glycerides, liquid glycerides, and insaponifiable fractions) on intradermal injection into tuberculoid macules.] Bull. Soc. Path. exot. **31** (1938) 819-824.

The glycerides of gorli were obtained by means of crystalization by acetone. The solid glycerides were used in the form of ethyl esters, the liquid ones unmodified, and the insaponifiable fraction in solution (0.02 per cc.) in

olive oil. The ethyl esters cause rapid disappearance of the infiltration of the lesions, but they are irritating. The liquid glycerides act much more rapidly than the whole substance or than neutral chaulmoogra oil; infiltration was lost in 16 to 20 days and the lesions returned to the level of the surrounding skin. The insaponifiable fraction gave no results. —Et. Burnet

Tisseuil, J. and Guilhaumon, F. Action de l'huile de ricin, de l'huile de foie de morue, du bleu de méthylène en solution à 1%, en injections intradermiques, dans le traitement des taches tuberculoides. [Action of castor and cod-liver oils, and of 1% methylene blue, on intradermal injection in the treatment of tuberculoid macules.] Bull. Soc. Path. exot. **31** (1938) 900-904.

The action of the substances named was nil, in the six observations reported. —Et. Burnet

Reenstierna, J. Eine vierte Orientierung über den therapeutischen Wert eines Anti-Lepraserums in Kolumbien und Venezuela. [A fourth orientation regarding the therapeutic value of an antileprosy serum in Colombia and Venezuela.] Festschr. Bernhard Nocht. Hamburg, J. J. Augustin, 1937, pp. 480-486.

[This article is essentially the same as the one that was first published in *Acta Medica Scandinavica*, Supplementum LXXXV, 1937, and reprinted in The Journal **6** (1938) 77-90.]

Flandin, C. and Ragu, J. Mal perforant plantaire guéri en deux mois par les injections intraveineuses du complexe chaulmoogra-cholestérol chez une lépreuse traitée depuis dix ans par les thérapeutiques classiques. [Perforating plantar ulcer cured in two months by intravenous injections of a chaulmoogra-cholesterol complex in a patient treated for ten years by classical means.] Bull. Mém. Soc. méd. Hop. Paris **53** (1937) 734-737.

A woman from Réunion who had lived long with her leprous father and had developed neural leprosy, with a perforating plantar ulcer, and who had been treated for 10 years by ordinary means, was given the Baranger chaulmoogra-cholesterol complex intravenously, 3 ampules a week. The lesion improved rapidly and cicatrized; sensation began to return.—[From abstract in *Bull. Off. Internat. Hyg. publ.* **29** (1937) 2182.]

Mehta, H. A treatment of perforating ulcers in leprosy. Jour. Malaya Branch, British Med. Assoc. **2** (1938) 88-90.

Mehta describes a treatment of perforating ulcers by local injections around the ulcer and along the nerve supply of the area. He uses a solution containing rivanol, glucose, calcium lactate, sodium thiosulphate and water. In conjunction with this, flavine compounds are added to the solution and injected intravenously. The results, which the author describes as excellent, claiming practically 100% healing, would appear to be due to a mixture of shock therapy and local counter-irritation. —G. A. Ryrie

Paras, E. M. Chemical fractionation of leprotic nodules, I. Isolation of the lipid fractions. Philippine Jour. Sci. **66** (1938) 155-160.

Leprotic nodules removed from living cases were subjected to a systematic fractionation into the major lipid components, such as phosphatide

acetone-soluble fat, and wax, as part of the work being undertaken on nodular tissues with a view (*a*) to isolate the principal constituent of leprotic tissue that is responsible for the leprolin reaction, and (*b*) to search for materials that may find application in the study of problems related to the immunochemistry of leprosy. Preliminary skin tests on a few cases of leprosy showed that of the lipid fractions isolated, only the wax appears to possess a significant biological property.—[Author's summary.]

GARZÓN, R. AND GIRARDET, O. Colesterolemia en la lepra. [Cholestrinemia in leprosy.] Rev. Argentina Dermatosif. **22** (1938) 655-663.

The normal cholesterol content of the blood, in the city of Córdoba where this work was done, is 154 mgm. %. In cases of leprosy the amount varied from 129 and 147 mgm. Most of the cases were of the forms considered as the less serious, a minority being of the graver forms. The cholesterol values are not influenced by any treatment, or by the duration of the illness. —G. BASOMBRIO

WADE, H. W. Problems of allergy in leprosy. Festschr. Bernhard Nocht. Hamburg, J. J. Augustin, 1937, pp. 652-655.

This is a brief review of the outstanding problems of leprosy in the field indicated, study of which has not been intensive. On such grounds, it is suggested, may be explained the essentially different characters of the lepra-cell lesions of the malignant form of the disease and the tuberculoid lesions of the benign form. The remarkable "specific adaption" between the parasite and the host tissues, in the bacillus-rich leproma is not explainable on the ground of general depression of the functional capacity of the latter. The leprid, typically very poor in bacilli, is apparently identical in nature with similar lesions of tuberculosis, which are ascribed to allergic hypersensitiveness of the tissue, but such a state has not been demonstrated in uninvolved skin in leprosy so it would seem as if the condition which is responsible for the tuberculoid change arises after the infection reaches the site of the lesion. Why this should occur in some cases of leprosy and not in others is one of the outstanding problems of the disease. The lepromin reaction and the phenomena of "lepra reaction" are discussed. The latter, obviously of allergic nature but very variable in its manifestations and effects, both between the two types of the disease and within each type, is obscure as regards its mechanism, but the condition which is responsible for it—at least in lepromatous leprosy—is evidently quite different from that which gives rise to the positive leprolin reaction. —AUTHOR'S ABSTRACT

BURNET, E. La réaction a la léproline chez un groupe de lépreux en Tunisie. [The reaction to leprolin in a group of lepers in Tunis.] Arch. Inst. Pasteur Tunis **27** (1938) 341-359.

The results observed confirm those that have been obtained in other countries, but with unexplained inconsistencies and irregularities. In healthy subjects the Hansen bacillus is resorbed with more difficulty than that of Stefansky. Repetition of the inoculation does not give rise to either sensitization or inhibition. —AUTHOR'S ABSTRACT

DE SOUZA-CAMPOS, N. Resultado de "leprolin-test" nos preventorios de filhos de leprosos. [The leprolin test in children of lepers.] Rev. Brasileiro Leprol. **6** (1938) 31-48.

As a result of a study carried out in the Jacarehy and Santa Therezinha preventoria, in São Paulo, where healthy children of lepers are taken care of, the author concludes that the number of positive reactions to the leprolin test increases as the age increases (0-3 years, 2-3%; 4-13 years, 53%; older, 86%). Children isolated from their leprous parents at birth were all negative. The positivity increases with the time of contact with the parents (1 month to 1 year, 45%; 1 to 3 years, 68%; 3-5 years, 74%; more than 5 years, 84%). Children of lepers with the nodular forms of the disease are more frequently positive than are those of neural or macular cases. Negative-reacting children of nodular and mixed cases are more liable to develop leprosy than the positive reactors and need more careful periodical examinations.—[From author's summary.]

DE SOUZA-LIMA, M. Estudo critico de "test" lepromina—R. de Mitsuda. [Critical study of the leprolin test, or Mitsuda reaction.] Rev. Brasileiro Leprol. **6** (1938) 373 (abst.).

In this paper [apparently published only in abstract] the author, on the basis of his own experiences and those of other experimenters, states that the Mitsuda antigen is a three-part complex, one part nonspecific, coming from the tissue cells, one part common to the acid-fast bacilli in general (those of Koch and Stefansky as well as that of Hansen), and one part properly specific to the leprosy bacillus. He concludes that when the Mitsuda reaction is positive it should be interpreted with caution, but when it is negative it is of much use, on the principle that all cases of leprosy with negative reactions are of bad prognosis.—[Translation of abstract.]

MUIR, E. AND ROY, T. N. The significance of positive Wassermann and Kahn reactions in leprosy. Lep. Rev. **9** (1938) 13-18.

The authors find that in early, slight cases of leprosy positive results in the Wassermann and Kahn tests usually indicate the presence of spirochetal disease, but that in advanced lepromatous cases, particularly those in which lepra reaction is seen, these reactions are often positive in the absence of spirochetal infection.—[From abstract in *Lep. in India* **10** (1938) 65.]

YANO, M. Nochmals über die Takadasche Reaktion bei Lepraseren, mit besonderer Berücksichtigung des Koagulations-bandes und der Q.R.Z. auf dieselbe. [Further regarding the Takada reaction with leprous sera, with special consideration of the coagulation band and QRZ.] La Lepro **8** (1937) 809-817 (Japanese; German abst. p. 83).

Previously the author, with Asano, reported $67.53 \pm 3.78\%$ positive findings with the Takada reaction in 154 cases of leprosy. The inquiry has been extended with another 107 cases, and with other reactions. The Takada reaction was positive; in neural leprosy (39 cases) $67.44 \pm 7.41\%$, in macular (45 cases) $88.88 \pm 4.69\%$, and in nodular (22 cases) $95.45 \pm 4.44\%$; average, $82.24 \pm 3.65\%$ positive. The coagulation band (Weltmann's reaction) of the leprous serum and the water content in the skin (QRZ—wheal test) were also investigated. The band (KB) was lengthened in $50.00 \pm 7.90\%$ of neural cases, $62.22 \pm 7.23\%$ of macular cases, and $86.36 \pm 7.32\%$ of nodular cases; average $62.62 \pm 4.69\%$. The wheal test (QRZ) showed shortening [of absorption time] in $47.37 \pm 5.88\%$ of neural, $64.10 \pm 5.65\%$ of macular, and $78.57 \pm 6.09\%$ of nodular cases; average $62.50 \pm 5.71\%$. From these find-

ings it may be stated that in leprosy there is a definite relation between these three reactions. The positivity of the Takada reaction, the lengthening of the coagulation band, and the shortening of the QRZ were all highest in nodular leprosy, next in macular, and least in neural.—[From a translation of author's summary.]

RUGE, H. AND MAASS, E. Zur Frage der Rubino-Reaktion. [The question of the Rubino reaction.] Festschr. Bernhard Nocht. Hamburg, J. J. Augustin, 1937, pp. 535-537.

The Rubino reaction was applied to 2,016 inactivated and 183 active nonleprous sera (1,361 of them from cases of various diseases) and in only 4 instances (0.19%) was it definitely positive. It seemed to be immaterial whether active or inactive serum was used. Regarding the specificity of the test for leprosy, the authors can say nothing because of the small number (8) of sera tested. —H. W. W.

FARACO, J. Bacillos de Hansen e cortes de parafina. Methodo complementar para a pesquiza de bacillos de Hansen em cortes de material incluido em parafina. [Staining of the leprosy bacillus in paraffin sections.] Rev. Brasileiro Leprol. **6** (1938) 177-180.

The author observed that clearing tissues through xylol into paraffin removes the fatty compounds from many of the bacilli, rendering them nonacid-fast, and consequently the results of Ziehl-Neelsen staining are not quantitative. The method that has given the best results depends upon a greasing of the sections before staining, as soon as the paraffin is removed. The method: (1) Deparaffinize with xylol. (2) Substitute the xylol with several drops of olive oil or other grease, as Singer oil, heavy engine oil, etc. (3) Heat the sections covered with oil, moderately and intermittently. (4) Renew the oil and heat two or three times. (5) Cool and remove the oil with smooth blotting or filter paper until the section becomes opaque. (6) Stain with carbol-fuchsin, warming. (7) Wash in running water and with dilute or pure liquid soap remove the stain retained by the excess oil. (8) Rinse in water and 70% alcohol. (9) Rinse in water and treat with 25% sulfuric. (10) Wash in water and counterstain with dilute Loeffler's methylene blue or methyl blue. (11) Dry with filter paper. (12) Dehydrate in 95% alcohol, absolute alcohol, absolute alcohol-xylol āā, pure xylol and mount in neutral Canada balsam.—[From author's summary.]

BURNET, ET. Inoculation positive de la lèpre humaine au hamster. [Positive inoculation of human leprosy in the hamster.] Compt. rend. Acad. Sci. **207** (1938) 690.

——— Inoculation positive de la lèpre humain au hamster; inoculation négative a divers autres rongeurs. [Positive inoculation of human leprosy in the hamster; negative results with various other rodents.] Arch. Inst. Pasteur Tunis **27** (1938) 327.

A hamster from Palestine (*Cricetus auratus*), not splenectomized, was inoculated under the skin with a very small fragment of a leproma. Sacrificed on the 220th day, it presented a subcutaneous lesion with the structure of an organized leproma, and beginning generalization in the lymph nodes, liver, kidneys and spleen; in the spleen were a small number of cells containing bacilli. Never had the author observed similar

changes in numerous other experiments. Was the lesion of the nature of a transplantation? A positive transplant with generalization is a positive inoculation. Nevertheless, it was not an inoculation of the pure bacillus—i.e., of bacilli without the tissue of origin. The animal was purposely sacrificed earlier than is desirable for such experiments. The results clarify and confirm those which Adler announced by a letter to the *Lancet* [**2** (1937) 714-715] and later demonstrated to the Cairo congress in March, 1938 [See THE JOURNAL **6** (1938) 467]. —AUTHOR'S ABSTRACT

NAKAJYO, S. AND SUZUKI, R. Ueber die Züchtung von Tuberkelbazillen aus den Auswürfen von Leprösen. [Cultivation of tubercle bacilli from the sputum of lepers.] Tohoku Jour. Exper. Med. **31** (1937) 431-436.

The authors report on the examination of the sputum of 100 cases of leprosy for tubercle bacilli. In 30 cases positive results were obtained. From a number of sputa containing acid-fast bacilli none could be grown. In positive cases a longer time was required for the growth of tubercle bacilli than in the purely tuberculous cases.—[Abstract from *Trop. Dis. Bull.* **35** (1938) 294.]

BURNET, E. Examen de quelques réactions d'immunité et d'allergie dans la lèpre murine. [Examination of reactions of immunity and of allergy in rat leprosy.] Arch. Inst. Pasteur Tunis **27** (1938) 360-367.

In his experiments with rat leprosy the author has not obtained any effect which can be related to the Koch phenomenon. Spaced reinoculations produced abscesses at the points of previous inoculations, but not constantly. Reinoculations at short intervals produced lepromas of increasing size, analogous with the Arthus phenomenon in the rabbit. Reinoculation into the peritoneal cavity did not give rise to any effect analogous with the phenomenon of Pfeiffer. In short, in these experiments there was observed neither immunity nor allergy; the author refrains from drawing conclusions, from these facts, with regard to human leprosy. In experimental rat leprosy a very extensive infection of the skin and subcutaneous tissue seems to protect the internal organs. The distinct differences between the experimental infections with the Stefansky bacillus in the rat and the mouse are pointed out. —AUTHOR'S ABSTRACT

MARCHOUX, E. AND CHORINE, V. Cinq bacilles de Stefansky suffisent pour infecter le rat blanc. [Five Stefansky bacilli suffice to infect the white rat.] Ann. Inst. Pasteur **61** (1938) 296.

Dilutions were made of a suspension of Stefansky bacilli that contained 750 millions per cc. of well-isolated bacilli, freed from tissue debris. Inoculation of 500 bacilli produced in 8 months, of 50 bacilli in 9 months, and of 5 bacilli in 10 months, changes identical with those obtained in 4 to 5 months with the strong doses which the authors ordinarily employ. This organism seems to be of the same order of virulence as the tubercle bacillus. —ET. BURNET

PRUDHOMME, R. O. Conservation du bacille de la lèpre du rat dans un milieu où pousse le bacille de la fléole. [Conservation of the bacillus of rat leprosy in a medium with the hay bacillus.] Bull. Soc Path. exot. **31** (1938) 815-818.

The author seeded a pellicle of hay bacilli on Souton's liquid medium at pH 6.5, and added 3 drops of a suspension of rat leprosy bacilli made by treating a leproma with antiformin and washing the suspension four times, with centrifuging. Afterwards, material was removed from the cultures at intervals and inoculated into rats, serial passages being made. It was established that in these mixed cultures the Stefansky bacillus remains alive and virulent up to 7 months at 37°C., and for 30 days and more at room temperature. —Et. Burnet

Sato, M. Rattenlepra. II. Teil: Uebertragung auf Tiere. [Rat leprosy. II. Transfer to other animals.] Japanese Jour. Derm. & Urol. **42** (1937) 149-163 (abstract section).

Though designated an "Autorreferat," this paper is apparently a full length, and certainly a fully-illustrated, translation of the original article. The condition in white rats is described in detail, this section ending with the statement that the author's experiments have shown that the causative organism of rat leprosy is not identical with either that of human leprosy or with other, free-living acid-fasts. The infection can be produced in the mouse, though it is less severe than in rats, and it can regularly be transferred from mouse to mouse. Guinea-pigs, rabbits and squirrels are strongly immune. In fowls, however, the author obtained more or less definite nodule-formation. Most interesting, he found that under the circumstances of his experiments the organism was rather strongly pathogenic for monkeys, producing a generalized infection. Several pictures of the lesions are reproduced. —H. W. W.

Sato, Y. Rattenlepra. III. Teil: Histologische Untersuchungen. [Rat leprosy. III. Histological investigations.] Japanese Jour. Derm. & Urol. **42** (1937) 329-332 (abstract section).

This article, being a summary of the original article, is a condensed mass of observations on the histological changes found in the skin and deeper tissues and organs in experimental rat leprosy, and is hardly susceptible of further summarization. Of particular interest are the findings with experimental vital staining, done with a view to elucidating the histogenesis of the lepra cell. Certain rats a month after being inoculated subcutaneously with rat leprosy, were given single injections of 1% trypan blue in close proximity to the leprous infiltrations; in other rats inoculated 6 to 8 months previously injection were given intraperitoneally. It is concluded that after subcutaneous injection of pigments the lepra cells in the skin store them in a well-defined manner, the pigment granules appearing principally at the periphery of the cells. The astonishing storing capacity of lepra cells that are crowded with bacilli corresponds exactly to the already well known property of the histiocytes. But after intraperitoneal injection of pigment solutions the results are different: the lepra cells in the skin lepromas do not store pigment granules or store only a few of them; on the other hand the histiocytes in the neighborhood of the lepromas store more or less numerous bacilli and granules, so there is an inverse variation between the numbers of pigment granules and of bacilli in the same cell. It is concluded from this investigation that the lepra cells are closely related to the histiocytes, and are most probably of histiocytic nature. —H. W. W.

GOMES, J. M. Estudos sobre a lepra murina. Instilacao ocular infectante. [Infection with rat leprosy by ocular installation.] Rev. Brasileiro Leprol. **6** (1938) 21-25.

A suspension of rat leproma was filtered through paper and then through a Seitz filter; the bacilli were resuspended, centrifuged and made up in a suspension containing on the average 1 bacillus in each microscopical field. (*a*) With five mice one drop of the filtrate was placed on the conjunctiva, and (*b*) five other mice received similarly one drop of the bacillary emulsion (control). The mice were killed from the 5th to the 10th days. Acid-fast bacteria were observed on the 6th, 7th, and 9th days in the mice treated with the filtrate. The author concludes that there is an inframicrobic phase of the Stefanski bacillus, which would explain the appearance of acid-fast bacilli in the first period of the infection, but he does not maintain that they may be the direct cause of rat leprosy.—[From author's summary.]