

CURRENT LITERATURE

To survey adequately the current literature of leprosy is one of the most important objectives of the JOURNAL. The Contributing Editors are expected, so far as possible, to make sufficiently full abstracts of the more important articles to afford a clear understanding of them. Since authors' abstracts are generally to be preferred, readers are invited to submit abstracts of their own articles which have been published elsewhere.

TISSEUL, J. Classification biologique des syndromes de la lèpre. [Biological classification of leprosy.] *Bull. Soc. Path. Exot.* 26 (1933) 10.

For the author the appearance of the symptoms of leprosy is determined by modifications of the tissues. He classes the leprosy syndromes as primary, secondary, tertiary and quaternary. The *primary* period corresponds to the first external manifestations, patches that are little infiltrated, and variously colored but without nodules or papules. The *secondary* syndromes are those in which the infiltration has become accentuated and extends through the entire thickness of the dermis, or in which there are papules or nodules without precise limitations. The *tertiary* ones are clearly characterized by the appearance of well-delimited subcutaneous nodules surrounded by a fibrous capsule; before ulceration these nodules become caseous to aid in their elimination. The *quaternary* phases are characterized by sclerosis of the cutaneous tissues with nervous or trophic sequelae (nervous period).

—M. LEGER (TRANSLATED).

LEGER, M. Que penser d'une classification rigide de la lèpre. [Opinion on the rigid classification of leprosy.] *Bull. Soc. Path. Exot.* 26 (1933) 12.

While agreeing with the opinion of Tissuel that there should be more order in the denominations now in use in the classification of leprosy, the author does not believe that the division of the disease into four periods is in keeping with the facts, and much less does it simplify the subject. For syphilis the classification into three or four periods is being abandoned more and more. In sleeping sickness, to recognize a primary blood period and a second nerve one is much too simple and often erroneous. Similarly, in leprosy there is not always a rigorous succession of lesions to a period that is determined in advance. It is best, and most simple, to specify in an exact and objective manner what is seen in a case that one submits to treatment, in a way to make it understandable to all and to have points for future comparison.

—[AUTHOR'S ABSTRACT, TRANSLATED.]

MONTÉL, R. Les phases de la lèpre. Leur importance dans l'appréciation des résultats du traitement chaulmoogrique. [The phases of leprosy and their importance in the appreciation of the results of treatment.] *Rev. Colon. Méd. et Chirg.* (1933) 1.

The classical divisions of nervous, cutaneous, tubercular, closed and open do not seem to the author to correspond to the clinical reality. By an analogy

to tuberculosis justified by the relations of the germs, they have been modified by applying to leprosy the conceptions of Ranke for tuberculosis, conceptions dominated by the idea of allergy. The first stage is characterized by difficulty in finding the Hansen bacillus in the local lesions. In a second stage there has been great increase in the bacilli, with generalization. The third stage is retrogressive; the intensity of the reactions diminishes and the bacilli become granular and fragmented. It is in the first stage that treatment by the derivatives of chaulmoogra produces marvelous results and permits one to anticipate complete clinical cure. In the second stage the treatment, in the absence of untoward developments, should be directed to produce constant and maximum impregnation of the organism with the drugs, utilizing all avenues of absorption. Montel records the excellent results obtained by him in the municipal polyclinic in Saigon by treatment by mouth with pills of the chaulmoogra soap (Boez-Guilherm), and by the intramuscular injection of the Dausse collobiasis of chaulmoogra. The treatment should be continued without interruption for years.

—M. LEGER (TRANSLATED).

LE FORESTIER, R. Notions médicales actuelles sur la lèpre. [Existing views on leprosy.] *Marseille-Méd.* (1932).

A very careful and well documented exposition of the different ideas that exist with regard to leprosy. The author treats of epidemiology, clinical views, clinical and bacteriologic diagnosis, classification and therapeutics.

—M. LEGER (TRANSLATED).

MOTTAT, J. Les sarcoides de la lèpre. [The sarcoids of leprosy.] *Ann. Derm. et Syph.* 2 (1931) 1180.

The author has previously pointed out that leprosy, referring especially to "tuberculoid leprosy," may simulate many of the tuberculides; and he holds that these lesions may be called "leprosy tuberculides," to be grouped as anatomico-clinical syndromes paralleling those of tuberculosis, syphilis and even other infections. Cases are cited in which lesions suggested tuberculous lupus, lupoid infiltrations of Boeck, lichen scrofulosorum, and granuloma annulare, and it is suggested that leprosy can also produce lesions like the papulo-necrotic tuberculides, the erythema induratum of Bazin, disseminated nodose sarcoids, etc. As an example of the last-named type the author describes a case of a girl of twelve, with leprosy relatives, who had repeated febrile attacks during which such lesions would appear, only to subside in a matter of days. Histologically such lesions showed chiefly round-cell accumulations, mostly perivascular, deep in the skin, but a clear-cut tuberculoid nodule was also found. The larger blood vessels of the dermis were not normal, showing disturbance of all coats. Syphilis was ruled out. The leprosy bacillus was not found either in sections, in smears of biopsied skin, or in aspirated lymph-node juice. Guinea-pigs were inoculated by the method of Paiseau, Valtis and Saenz to elicit evidence of the presence of the tubercle bacillus, with negative results.

—H. W. W.

UCHIDA, M. A statistical observation of leproma of the eyes. *La Lepro* 3 (1932), No. 2. (In Japanese, with author's summary in English.)

In 287 cases of nodular leprosy the author found 88 (30 per cent) with episcleritis, among which 48 (17 per cent) had leproma-like elevations. In 20

of these 48 cases both eyes were involved; in the others neither one was affected more frequently than the other. The lepromas were often on the symmetrical part of the limbus of both eyes (25 per cent) and on the temporal and nasal side of one eye (12.5 per cent). In 4 cases there were lepromata symmetrically on both eyes. Most of them (65 per cent) were relatively small, 11 per cent had a granuloma-like appearance, 14 per cent were large but flattened, and 9.5 per cent had disappeared leaving scars in their sites. Lagophthalmos and leproma bulbi were closely related. Lagophthalmos with simple leprous episcleritis was seen in 23 per cent of all cases of the disease, that with leproma in 51 per cent. Such a complication was seen mostly in the cases in which leproma developed in the lower part of the limbus, which condition was produced by external irritation of that part in cases of incomplete closure of the eyes. Lagophthalmos, therefore, can be taken for an important factor in producing leproma bulbi.

—[ABSTRACT OF THE AUTHOR'S SUMMARY.] H. W. W.

LIE, H. P. Hudtuberculose hos leprose. [Skin tuberculosis in lepers.] *Finska Läkare. Hbdl.* 75 (1933) 338.

The author points out the fact that he has seen no report of skin tuberculosis in lepers in the literature, and suggests that this is probably due to failure to recognize such changes as not leprotic. That the skin of lepers is immune to tuberculous infection seems unlikely, for there is certainly no immunity in lepers with regard to tuberculosis in general. *Myco. tuberculosis* frequently affects lepers, and it doubtlessly thrives in leprous nodules; the author recalls that many years ago he cultivated the tubercle bacillus from a leprotic nodule, and this has recently been done for the second time by Ota and Sato.

A case is described of nodular leprosy (C3), with tuberculous changes (scrofuloderma) on the right side of the neck, connected with swollen lymph nodes. From the skin lesion the author cultivated typical tubercle bacilli which produced typical tuberculosis in guinea pigs. The year prior to this Löwenstein, in Vienna, had found acid-fast bacilli which resembled tubercle bacilli in a blood culture from the patient. The patient died of chronic nephritis. At autopsy tuberculous changes were found in a couple of cervical lymph nodes, in which there were very many leprosy bacilli. A bronchial gland was grayish in color, but aside from this no tuberculosis was found. The author maintains that the cervical tuberculosis was a secondary infection of a leprotic gland, and that this in turn infected the skin. It exemplifies the fact that tuberculosis can spread in leprotic glands, and that leprosy cannot, as a general rule, provide immunity against tuberculosis. The author is inclined to believe that skin tuberculosis will be found more often if careful examination for it is made.

—[AUTHOR'S ABSTRACT.]

CHATTERJI, S. N. An unusual case of wrist-drop due to leprosy. *Lep. in India* 5 (1933) 219.

A case is described that showed two anaesthetic macules of a few months' duration, one of them on the dorsum of the left hand. The left radial nerve was thickened and there was paralysis of the extensors, with drop-wrist. Radial palsy is not uncommon in severe nerve cases, but in early cases it is uncommon.

—J. LOWE.

CORRAZINI, J. A. Un cas de lèpre mixte avec lépromes anesthésiques; chancre lepreux. [A case of mixed leprosy with anesthetic lepromas; leprosy chancre.] *l'Algerie Med.* 18 (1932); also *Arch. Méd. Pharm. mil.* 46 (1932) 324.

Describing a case of mixed cutaneous and neural leprosy in a native Moroccan from the region of Marrakech. Smears of the nasal mucus contained the Hansen bacillus. Noteworthy is the persistence of sensory function in the lesions, and the fact that the disease began with a single ulceration which for about five months was the sole lesion.

—EDM. SERGENT.

FABIANI, G. Sur un cas de lèpre autochtone en Algérie. [An autochthonous case in Algeria.] *Arch. Inst. Past. d'Algerie* 10 (1932) 177.

Describing a case of mixed leprosy, with bacilli demonstrated in the nasal mucus and from an inguinal lymph node, in a Kabyl soldier, 20 years of age, from the coastal region of Port Gueydon. The generalized eruption which drew attention to the patient appeared 5 months after he joined the army. There was no other case in the same regiment. An inquiry was made in the Kabyl village where the young soldier had always lived, and 17 persons were examined, 8 members of his family and 9 neighbors. None showed any clinical evidence of leprosy. Microscopic examination of their nasal mucus (50 smears) did not reveal any Hansen bacilli. No case of leprosy had ever been seen in the region.

—EDM. SERGENT.

MUIR, E. The leprolin test. *Lep. in India* 5 (1933) 204.

Muir describes the method of preparing leprolin, performing the test, and reading the results. His methods are similar to those described by Hayashi (*This JOURNAL*, Vol. 1, No. 1) and his findings are in general agreement with those of Hayashi. As a control for human leprolin Muir has used one made of rat leprosy lesions. Rat leprolin gave positive results in practically every case. In neural leprosy the reaction to human leprolin is stronger than that to rat leprolin; in cutaneous leprosy it is much weaker; in non-lepers the two are equal; in young children either or both may be negative. The reaction to human leprolin often comes on more slowly but lasts longer than that to rat leprolin. Injection of the filtrate obtained by passing leprolin through Chamberland filters gave negative results. A leprolin of Kedrowsky's leprosy culture always gave positive results, even in C3 cases. Muir considers this to be evidence against the genuineness of this culture and thinks that this method of testing supposed cultures may be valuable. The relative increase or diminution of reaction to human leprolin appears to be caused by the presence or absence of a specific factor connected with immunity or allergy. A normally positive reaction in an apparently healthy person does not indicate a previous leprosy infection. Muir thinks that the degree of reaction to human leprolin is an indication of the degree of resistance to leprosy infection.

—J. LOWE.

FERNANDEZ, J. M., SCHUJMAN, S. AND MACCHI CAMPOS, R. Las reacciones de Wassermann y Kahn en la lepra. [The Wassermann and Kahn reactions in leprosy.] *Rev. Argentina Dermatosis.* 16 (1932), Special No., p. 561.

The authors tested 106 cases in parallel, finding 17.9 and 15.1 per cent positive with Wassermann and Kahn reactions, respectively. Tabulating the findings according to stage of the disease:

Wassermann	C1	8.9;	C2	17.9;	C3	36.0 per cent
Kahn	C1	11.1;	C2	12.8;	C3	37.3 per cent

They concluded that with both tests the number of positive reactions increases with advancement of the disease, that antileprosy treatment does not modify a positive reaction, and that all positive cases should be investigated carefully for syphilis.

[In discussion PUENTE stated that in the initial forms of leprosy a positive Wassermann, and especially a positive Kahn, indicated syphilis, but not later. Of 10 autopsies in cases with positive reactions only 2 had shown definite syphilitic lesions. Arsenical treatment in the absence of syphilis may cause lepra reactions. BALINA stated that syphilis was present in most of his positive cases, and that when there is doubt the Kringler-Hirschfeld reaction should be used as it is positive only in syphilis.] —H. W. W.

TODD, K. W. A substitute for the Wassermann test for up-country work, with observations on halarsol in yaws. *Jour. Trop. Med. and Hyg.* 36 (1933) 233.

With the Meinicke turbidity reaction as described the author tested 31 cases of leprosy, along with many cases of yaws and syphilis. Of the 19 lepers believed to be free from yaws only one gave a definite positive reaction, though only 9 were clearly negative, 7 being "doubtful." On the other hand, of 12 with signs and/or history of yaws 10 gave positive reactions. It is concluded that the value of this reaction in the diagnosis of yaws and syphilis is little if at all invalidated by the presence of leprosy. —H. W. W.

VAUDREMER, A., SEZARY, A. ET BRUN, C. Cultures de germes provenant de lépromes et de rates lépreuses filtrées. [Cultures obtained from filtered lepromas and leprous spleens.] *Comp. Rend. Soc. Biol.* 59 (1932) 624.

By culturing fragments of cutaneous leprosy and of leprous spleens successively in a filtered extract of *Aspergillus fumigatus* in Martin's bouillon, simple potato bouillon, and glycerinated potato bouillon, the authors have obtained (a) pseudo-meningococcic forms that take the Gram stain, (b) cyanophilic bacilli that were short and granular or were long, curved and granular, and finally (c) acid-fast forms. This evolution took about two years. Fragments of lepromas triturated in the aspergillus fluid and filtered through a Chamberland L3 bougie gave no growth for nine months, but after that time pseudo-meningococcic forms appeared in the potato bouillon. These, also, finally became acid-resistant forms. The authors think that the germs which developed in the cultures are forms of the Hansen bacillus, and that this bacillus like many others contains filterable elements. —M. LEGER (translated).

LÉPINE, P., MARKIANOS, J. AND PAPAYOANNOU. Sur l'hémoculture du bacille de Hansen par la méthode de Löwenstein. [Blood culture by Löwenstein's method.] *Compt. Rend. Soc. Biol.* 112 (1933) 845.

Attempts have been made to cultivate the leprosy bacillus under the conditions indicated by Ota and Sato, but contrary to the results of the Japanese workers it was never obtained by the method of Löwenstein. These studies were made on the bloods of twenty cases with strong Rubino reactions, and at the time of febrile attacks. The presence of the bacillus in the blood was con-

firmed by the thick-drop examination in most of the cases. The authors have been equally unsuccessful in many attempts to cultivate the organism from a leproma suspension in which the bacilli were particularly numerous. They think that the Japanese have not eliminated positively the possibility that their cultures were para-tubercle bacilli.

—M. LEGER (TRANSLATED).

SOUZA-ARAUJO, H. C. DE. [Unsuccessful attempts at cultivation by Löwenstein's method.] *Brasil-Med.* 47 (1933) 131.

The author having failed to cultivate the leprosy bacillus by Shiga's method, and impressed by the results reported by Ota and Sato from bloods cultured by Löwenstein's method, attempted over several months to obtain cultures in that way. He cultured 26 samples of blood from 17 active cases, some of them taken during febrile reactions (i.e., "with bacillemia"). The technic is given in detail. The results from about 400 tubes were negative. An observation of interest is that the author very seldom found acid-fast bacilli in the centrifuged blood sediments, whereas with the methods of Rivas and Crow he had frequently found such bacilli (in unpublished experiments). To control the effects of the technic, cultures of supposed *Myco. leprae* were treated with 15 per cent sulphuric acid for one-half hour or less to see whether they would survive. The strains of Kedrowsky, Brinkerhoff I, and Rat I (McCoy) were not injured, while the Currie, Deycke, Ota and Sato, and Lister Institute 18 strains did not grow after this treatment.

—H. W. W.

MANALANG, C. Significance of pathologic findings in biopsy materials from lepers. II. *Mo. Bull. Phil. Health Serv.* 12 March (1932) 77.

Histologic studies, correlated with results of search for *Myco. leprae*, in 93 cases of a wide variety (including the earliest cases in children, advanced cases studied postmortem, relapsed cases, and others), have led the author to formulate a pathogenetic cycle: (1) *Myco. leprae* has a microscopically invisible ultravirus stage (corresponding to the ultravirus of Fontes in tuberculosis) which is responsible for the so-called early lesion, pathologically characterized by a perivascular infiltration, and for lepride (tuberculoid) formation till the appearance of giant cells. (2) Depending on the ability of the individual's tissue to form fibrous tissue in the lepride, acid-fast granules (corresponding to the coccoids of Ravetlat-Pla in tuberculosis) begin to appear. (3) As fibrosis advances isolated acid-fast diphtheroids often appear, followed by solid staining bacilli. These attract macrophages (Virchow's cells), which fill the spaces between the branched fibrous connective tissue cells, giving rise to the typical *Myco. leprae* laden leproma. (4) Changes seen before, during and after an apparent drug cure are approximately a reversion of these processes. (5) Relapse in a paroled case is apparently only a repetition of these processes. The author believes that *Myco. leprae* is only one of the stages in the developmental cycle of the causative organism of leprosy, and that for epidemiological purposes the bacteriologically positive case may be considered a case of leprosy, and the negative incipient case a leprosy virus carrier.

—J. O. NOLASCO.

LIMA, L. S. Tratamiento anti-leprotico no Sanatorio "Padre Bento." [Anti-leprosy treatment at the Padre Bento sanatorium.] *Ann. Paul. de Med. e Cir.* 26 (1933) 107.

This is the second section of an article devoted to the intradermal infiltration or "plancha" method. Its Philippine origin is recognized, the detailed method published by Muir is given, general considerations are discussed briefly, and the author's scheme of charting treatments is illustrated. —H. W. W.

DUBOIS, A., AND URY, J. Note sur de le traitement de la lèpre par les sels d'or. [Treatment of leprosy with gold salts.] *Ann. Soc. Belge Méd. Trop.* 13 (1933).

A short account of experiments with eight cases of cutaneous leprosy treated in Pawa with several preparations of gold salts, especially solganal and solganal B. The doses were usually moderate, not exceeding 20 or 25 cgm., and the treatment usually consisted of one series of 30 weekly injections (4 to 5 gm. in all). Not a single satisfactory result was obtained.

—[AUTHORS' ABSTRACT.]

FERÓN, J. Le cuivre et le traitement de la lèpre. [Copper in the treatment of leprosy.] *Rev. Méd. Française* (1932) 501.

The author, who is the physician of the leprosarium at Harrar, in Ethiopia, records two well-studied cases treated with copper. The metal in the form of "granions" (cuprion, or double cyanide of copper and potassium), seems worthy of a place in the therapeutics of leprosy. Employed at the beginning its efficacy is certain. Later, employed together with chaulmoogra, it seems to increase the healing effect on the wounds. The intravenous route is the most certain and direct. The author has also tried psiothanol (bismuth and arsenic), zinc-sulfarsenol, crisalbine and granions of gold.

—M. LEGER (TRANSLATED).

WILDISH, G. H. AND STOUTE, D. G. The combined treatment of leprosy. *Jour. Med. Assoc. South Africa* 5 (1931) 21.

Four active maculo-anesthetic cases submitted to treatment with tartar emetic intravenously, alternated with potassium iodide by mouth. This began with 10 grains of the iodide 3 times a day, stopping when leprotic reaction appeared. In 3 of the cases this occurred violently in 3 days; they were then put on tartar emetic intravenously, 2 injections a week, beginning with 0.25 grain and gradually increasing to whatever dose they could comfortably stand. In these cases when 1 grain was reached the edges of the macules were drying, flattening and desquamating. After 10 injections the macules were less distinct, pains were improved, and the general condition was better. Treatment was stopped for two weeks. The other patient, clinically peculiar, with indolent keloidlike macules, took 120 grains of the iodide daily before reacting. Reaction came on suddenly and severely, and he lost condition rapidly, but after 13 grains of tartar emetic he had regained his condition and the macules had become thinner.

Many volunteers soon applied, and 150 were accepted indiscriminately and treated during 12 months. Reactions were produced with iodide—sometimes even with single doses of 2 grains—and controlled with antimony. Reactions were: (1) flare-up of the lesions; (2) leprotic fever; (3) the iodide reactions; (4) sudden loss of physical condition. They were frequently controlled by as few

as three 0.5-grain injections of tartar emetic, given every second day. The swelling and redness of the lesions and the bodily discomforts subsided with subsidence of the reaction, and the skin lesions improved. Ulcerations are especially benefited. No case complained of any ill effect whatever. A large number of positive nasal smears became negative. —H. W. W.

FIDANZA, E. P., SCHUJMAN, S. AND FERNANDEZ, J. M. El tratamiento de la lepra por el yoduro de potasio asociado a los derivados del aceite de chaulmoogra. [Treatment by potassium iodide and chaulmoogra derivatives.] *Rev. Argentina Dermatosis*. 16 (1932) Special No., p. 568.

The authors report the results obtained in 100 cases during 3 years. They were led to employ potassium iodide by a report of Olp, who held that it caused destruction of the lepra cells and discharge of the bacilli which, acting as an antigen, caused defensive reactions that produced in 6 weeks as much benefit as other treatments in a year. Their results proving unsatisfactory, the authors combined the iodide treatment with injections of chaulmoogra derivatives. Iodide was not given to advanced cases, and some others could not stand it; in all only 37 were so treated. All but 2 received chaulmestrol (ethyl esters), while 46 received alepol (sodium salts). Detailed tables showing the results are given. Some improvement was seen in 90 per cent of the cases, 46 being either "much improved" (32) or "apparently cured" (14). Of the latter none was advanced at the outset, 85 per cent of them received the iodide, all tolerated the treatment well and none had lepra reaction. Of the former 40 per cent were advanced, only 25 per cent of them received iodide, 78 per cent tolerated the treatment well, but 31 per cent had lepra reaction. Though the authors are now using a new treatment, that described is being continued in these cases.

[In discussion MAY told of giving the iodide intravenously to 3 patients, one of whom became so intoxicated that he collapsed and almost died. PUENTE had used it intravenously without satisfactory benefit. After trying various leprosy treatment methods he had concluded that the Mercado-Heiser preparation is the best. CARRERA had found the sodium iodide better tolerated (intravenously) than potassium iodide, while giving equal benefit.] —H. W. W.

LARA, C. B. AND SAMSON, J. G. Role of iodine in iodized oil derivatives used as antileprotic drugs. Trial of plain and iodized olive oil ethyl esters. *Jour. Philippine Islands Med. Assoc.* 12 (1932) 485.*

In a previous attempt to (a) demonstrate special action of *Hydnocarpus wightiana* ethyl esters in treating leprotic lesions by local infiltration, and to (b) test the rôle of the added iodine by using iodized olive oil ethyl esters as a control, one of the authors (C.B.L.) had found, contrary to expectations, that the control lesion underwent marked diminution. Because the control drug used gave much more marked local inflammatory reactions than did the same esters (olive oil) without iodine, he thinks that the greater irritation was attributable to the iodine. The authors have made observations on two groups of patients (21 in each group) over a period of six months, comparing the effect of iodized (0.5 per cent) olive oil ethyl esters and the same substance uniodized. Improvement

* This article was reprinted in condensed form in this JOURNAL, 2 (1934) 81.

occurred in the test group which, they believe, was due to the iodine. The results obtained with this preparation compare favorably with those obtained with the iodized chaulmoogra derivatives.

—J. O. NOLASCO.

LARA, C. B. AND LAGROSA, M. Observations bearing on the question of whether or not the chaulmoogra group drugs have any special action in leprosy. Changes in leprotic skin lesions following intradermal injections of various oily preparations. *Jour. Philippine Islands Med. Assoc.* 12 (1932) 599.*

The authors, testing the irritation caused by ethyl stearate, ethyl oleate, olive oil ethyl esters, and iodized (0.5 per cent) wightiana ethyl esters on intradermal injection, found that it decreased in the order named. To evaluate the therapeutic effects on intradermal injection they selected 12 patients with symmetrical active leprotic lesions. On one side four were given ethyl stearate, four ethyl oleate, and four olive oil ethyl esters. On the opposite side all were given the iodized wightiana ethyl esters into corresponding lesions. Similar lesions were left untreated as controls. All patients received, besides, routine treatment with iodized wightiana esters. After 10 months all the lesions treated with the wightiana esters showed from slight to marked improvement, those treated with the olive oil esters also showed some (but less) improvement in the majority of cases, while those treated with stearate and oleate showed little more improvement than the control untreated lesions. It is indicated that the local inflammatory processes produced by injections of the chaulmoogra preparations are not a necessary, or even an important, factor in the improvement observed with the use of these drugs.

—J. O. NOLASCO.

EMERSON, G. A., ANDERSON, H. H. AND LEAKE, C. D. Effect of chaulmoogric acid derivatives on lipolytic-activity in vitro. *Proc. Soc. Exper. Biol. & Med.* 31 (1933) 272.

Since chaulmoogric acid derivatives were found ineffective in activating tissue lipase in vivo, attempts were made to confirm reports that in vitro activation occurs. These uniformly failed. It was shown that the apparent activation noted by other observers is not real, but an artefact due to a disturbance of equilibria brought about by the introduction of a salt of a weak acid into an enzyme reaction system containing large amounts of free glycerol. It is felt that any beneficial action of the chaulmoogrates in leprosy therapy cannot be attributed to their influence on the fat-splitting ferment.

—[AUTHORS' ABSTRACT.]

EMERSON, G. A., ANDERSON, H. H. AND LEAKE, C. D. Lipolytic activity of rat lepromata during treatment with various antileprotics. *Proc. Soc. Exper. Biol. & Med.* 31 (1933) 18.

On examination of the lipolytic activity of 60 untreated and 36 treated rat lepromata, by Loevenhart's method, it was found that the former averaged 0.16 ± 0.03 per cent hydrolysis of ethyl butyrate while the latter averaged 0.15 ± 0.04 per cent. There was thus no tendency during chaulmoogra treatment for the lipolytic activity of lepromatous subcutaneous tissue to approach the value of 0.83 ± 0.07 per cent found previously for normal subcutaneous tissue of rats with "early stage" leprosy (this JOURNAL, 1 (1933) 390). The absence of any

* This article is reprinted in condensed form in this issue.—EDITOR.

antileprosy factor in leproma bries was demonstrated, and an explanation was advanced that dilution of normal tissue with enormous numbers of *Mycobacterium leprae* accounted for the low values found, since cultured lepra bacilli exhibit very low lipolytic powers.

—[AUTHORS' ABSTRACT.]

LARA, C. B. The paroling and follow-up of quiescent cases of leprosy, and associated problems. *Jour. Philippine Islands Med. Assoc.* 12 (1932) 476.

In view of the large number of cases that have been paroled from segregation, totalling 2,266 from 1922 to 1930, the author discusses the problem of parole and follow-up of quiescent cases of leprosy in the Philippines, citing the tendency to relapse observed among paroled cases in Hawaii, the United States and the Philippines. He points out that, aside from the observed relation between the incidence of relapse and the strictness of the pre-parole requirements, and the marked persistence of the bacilli or other forms of lepra "erreger" in the deeper organs, there is a lack of much-needed information regarding the causes and prevention of relapse.

—J. O. NOLASCO.

LARA, C. B. Observations on readmitted cases, with special reference to predisposing causes of relapse in leprosy. I. Factors already operating prior to parole. *Jour. Philippine Islands Med. Assoc.* 12 (1932) 537.

— — — II. Factors operating subsequent to parole. *Jour. Philippine Islands Med. Assoc.* 12 (1932) 552.

With the object of determining some of the causes of relapse the author analyzed the cases of the 214 paroled inmates who had been readmitted to the Culion Leper Colony to December 31, 1931, of whom 98 were readmitted as quiescent and 116 as relapsed.

I. With regard to factors operative before parole, he finds that the tendency to relapse: (a) was slightly greater among females than among males, (b) was apparently not influenced by the clinical type of the disease at the time of admission, (c) was greater among those who had had the disease for more than five years than among those with less duration, (d) was less among those that had been treated for four years or less than among those treated longer, (e) was less among those who had been quiescent a year or more before parole than among those paroled sooner, and (f) had no apparent relation to the incidence of lepra reaction before parole. No definite evidence was found of effective or lasting acquired immunity in leprosy.

II. Considering the factors operating subsequent to parole, the author found that antileprosy treatment after release from segregation seemed to have no definite influence on relapse incidence, rather more of the relapsed cases having been treated than not. However, observation of the readmitted quiescent (not relapsed) cases after their readmission indicated strongly the value of continued treatment as a means of decreasing the incidence of relapse. Sexual excess especially in women when pregnancy resulted, the period of adolescence (12 to 16 years), hard manual work, deficient food and general poverty, are in the order mentioned more or less directly associated with relapse. Tuberculosis is more or less a potent cause, while mental depression had no influence.

—J. O. NOLASCO.

FIDANZA, E. P. SCHUJMAN, S. AND FERNANDEZ, J. M. Profilaxis de la lepra. Nuestra ficha de convivente. [Prophylaxis of leprosy; our data on contacts.] *Rev. Argentina Dermatosif* 16 (1932).Special No., p. 585.

Recognizing the importance of discovering early cases among persons living with lepers, and considering the views ascribed to Rogers and Muir that 80 per cent of cases arise from such contact and that by watching them the incidence of new cases should be reduced by 96 per cent in 10 years, the authors instituted a system of periodic examination of contacts of the cases which they encountered in their leprosy clinic in Rosario. Details of the procedure and of the cases discovered are given. Among 200 persons thus examined 10 new cases were found (5 per cent), most of them incipient. Among the 27 married mates there were 4 cases, 15 per cent. The conclusions to be drawn from their observations are reserved for a later publication.

[In discussion FIOL, of the National Department of Hygiene, stated that they had found 8 early cases in about 200 persons examined in this way. BALINA, of Buenos Aires, stated that it is his practice, through the patients themselves, to invite the relatives to be examined, and that he has found unsuspected cases among those examined. —H. W. W.]

SOETOMO AND SOETOPO. Lutte rationelle contre la lèpre. [A rational method of combating leprosy.] *Tijdschr. f. Geneesk., v. Nederlandsche-Indie*. October (1933) 1299.

The authors discuss the proper functions of private initiative and of the Government in antileprosy work, going into the need for research, epidemiological investigations, and efforts to exterminate the origin of the infection. In connection with the last they consider at length the relative susceptibilities of adults and children and, concluding that the latter are not only the more susceptible but may play a relatively important part in transmission, they suggest a new plan of control. This, briefly, is to discontinue segregating advanced cases among adults (or where it is not done to give up thought of doing so), and to endeavor to eliminate contact of the diseased children with healthy children by caring for them in infirmaries. —H. W. W.]

ANDERSON, W. H. P. The work and influence of Mission leprosy institutions. *Chinese Med. Jour.* 47 (1933) 290.

Mission work among lepers has influenced the steps being taken to bring about control of the disease. The leprosy conference held at Shanghai in October, 1932, arose out of such work. Originally undertaken as a simple duty to destitute sufferers, this work has grown to enormous proportions. Mission homes and hospitals are today providing substantially the means of bringing medical treatment to an increasing number of treatable persons in practically all leprosy countries. With progress in the medical treatment the sphere of usefulness of these institutions has further increased through out-patient treatment at dispensaries, treatment centers, and at a number of general hospitals.

The work of the Missions is affording valuable information in many ways and is securing the confidence of the public and influencing the health policies of many countries. Coöperation with governments has often made possible additional hospital buildings and personnel. The policy of voluntary segregation

adhered to by Missions has been of special importance in securing public coöperation in measures against the disease. All the phases of the work have never been needed more than they are today.

—[FROM ABSTRACT IN *Jour. Trop. Med. & Hyg.* 36 (1933) 214.]

WU LIEN-TEH. The present status of the leprosy question in China. *Chinese Med. Jour.* 47 (1933) 294.

In China, as elsewhere, leprosy has been known since ancient times, and it is supposed that about one-third of the estimated three million lepers in the world are located in that country. In order of severity, the provinces chiefly affected are: Kwangtung and Fukien, Yunnan, Kwangsi, Kweichow, Anhwei, Hupeh, Kiangsi, Kiangsu, Chekiang, Shantung, Szechuen, Shensu, Shansi, Kansu, and Manchuria. The remaining provinces are more or less free from the disease. There is still in China a widespread belief in the gross infectivity of leprosy, and in many places leper institutions are not permitted within the cities. There are only twelve known leprosaria and one dispensary in the country. The majority of these institutions are private concerns, and the necessary money for their upkeep is mainly derived from voluntary sources; municipal or government help, if any, is limited. In 1926, the Chinese Mission to Lepers was established at Shanghai and since that date has done much good work. Unfortunately, the National Government, owing to more urgent needs in health administration, has not as yet been in a position to assist materially this work.

—[FROM ABSTRACT IN *Jour. Trop. Med. & Hyg.* 36 (1933) 215.]

MAXWELL, J. L. Leprosy in China. *Chinese Med. Jour.* 47 (1933) 227.

The problem in China is immense. The estimate of approximately one million lepers is worthless; it is not known whether there are half a million or five million. Any attempt at an actual survey encounters difficulties that are almost insurmountable. There is a great dearth of modern trained personnel. Only recently has any organized attack on the disease been contemplated. The population numbers some two hundred million, at least half of which is in rural districts, where leprosy is found. The difficulty of detailed survey in so vast an area is obvious. The majority of scientific physicians are in the larger cities, and the country people are too poor to acquire the services of qualified men. The financial outlay required to conduct a survey would be too great for the Government to face at present.

Information as to distribution and incidence could be obtained by coöperation on the part of hospitals, etc. The author proposes to prepare outline maps of the different provinces where leprosy is encountered and distribute them with a view to ascertaining the places where the disease is found. In this way it is hoped to obtain a more or less accurate idea of the general distribution of the disease in China, to determine where the most extensive work is needed. The coöperation of every person in a position to acquire such information is urged.

—[FROM ABSTRACT IN *Jour. Trop. Med. & Hyg.* 36 (1933) 210.]

(BELGIAN CONGO) [Leprosy, in the Annual Report on Public Health in the Belgian Congo for 1931.] Dr. Mouchet. Bruxelles.

From this report it appears that a total of 2,542 lepers were treated in the Government hospitals during 1931. Of these, 525 were treated in the dispensaries of the FOREAMI (Fonds Reine Elizabeth pour l'Assistance Médicale aux Indigènes

du Congo Belge). The results of the different treatments used are irregular. The known cases as reported by the various entities or individuals concerned may be listed as follows:

Kwango-Kassai Sleeping Sickness Mission	694
Mission doctors, Equateur Province	277
Private physicians, Equateur Province	128
Rural dispensaries, Eastern Province	5,371
Rural dispensaries and leper villages of the Croix-Rouge du Congo ...	2,338
Lomami Company	119
B. M. S. (Mission), Yakusu	30
Travelling medical service, Katanga	819

The total of these figures, 9,876, is considerably larger than that recorded in 1930 namely, 7,398. The Government is endeavoring to establish isolation villages and to finance the institutions that will control them. —A. DUBOIS.

(FOREAMI). The Annual Report for 1931 of the Fonds Reine Elizabeth pour l'Assistance Médicale aux Indigènes du Congo Belge (FOREAMI). Bruxelles (1932) pp. 142.

This report, written by Dr. Dupuy, contains several points of interest concerning leprosy. One is that the natives themselves practice a certain isolation of leprosy. Another point that is important with regard to prophylaxis is that the parents and children do not use the same hut at night. Attention is particularly called to the diagnostic method proposed by Dr. Gabba. Burning of affected parts by exposure to solar rays collected through a lens is not felt by lepers. —A. DUBOIS.

(CROIX-ROUGE DU CONGO). Le Centre Anti-Lépreux de Pawa en 1932. [The Pawa antileprosy center of the Congo Red Cross in 1932.] *Ann. Soc. Belge de Méd. Trop.* (1933).

This antileprosy entity now centralizes three agricultural leper villages, one at Pawa, another at Egoba, 11 kilometers distant, and a third at Bengwe, 18 kilometers distant. Each village has its dispensary and sanitary attendants. The European agent of the Congo Red Cross oversees the villages and holds a consultation each week for treatment. A total of 3,622 microscopic examinations have been made for the Hansen bacillus and for intercurrent infections. The case-statistics of the three villages are given in the following table. The report contains interesting propositions concerning prophylaxis, and the program carried out.

Village	Cases	Left	Died	Remaining
Pawa	318	12	14	393
Egoba	150	13	7	130
Bengwe	209	1	12	196

—A. DUBOIS.

DE MAZIÈRES, M. La lèpre dans les Doukkala-sud à travers la médecine arabe et la tradition oral. [Leprosy in the South Doukkala in Arabic medicine and tradition.] *Bull. de l'Inst. d'Hyg. du Maroc.* (1932) No. 1.

This article relates the rôle of legends about leprosy in Morocco and particularly in the neighboring South Doukkala and gives the history of the disease where, before the Protectorate, there existed three leprosaria. In this region, which has 126,000 inhabitants, the last official census gives a proportion of nearly one per thousand (0.912 per 1,000). —EDM. SERGENT.

PAUSSON, A. Les grandes épidémies de Bordeaux. Lèpre, peste, grippe, choléra. [The great epidemics of Bordeaux; leprosy, etc.] *Jour. Méd. de Bordeaux* (1933) 635.

This lecture, given in Athens, recounts briefly the story of the bringing of leprosy to France by the crusaders, the establishment of leprosaria from which even the religious attendants might not go out except in the garb and with the clackers of the afflicted, and the almost complete disappearance of the disease from France, which is ascribed to the severe measures taken in the Middle Ages.

—H. W. W.

SOUZA-ARAUJO, H. C. DE. Contribuicao á epidemiologia e prophylaxia de lepra no Norte do Brasil. [Contribution to the epidemiology and prophylaxis of leprosy in Northern Brazil.] *Mem. Inst. Oswaldo Cruz* 27 (1933) 165.

The author was designated to make a survey of the problem of leprosy in the northern States of Brazil, in order to outline a general plan of control. The present publication is the monographic report of this survey; it covers 170 pages and cannot easily be summarized. The description of the existing institutions for lepers will be matter of an article to appear in the JOURNAL. The following table shows the situation as regards incidence:

Northern Brazil		Numbers of Cases		
State	Population	Recorded	Isolated	Estimated
Acre Territory ..	100,000	234	55	700
Amazonas	400,000	1,436	310	3,000
Pará	1,000,000	3,612	850	4,000
Maranhao	950,000	848	100	1,500
Piauhv	600,000	50	27	200
Ceará	1,300,000	524	208	1,000
Rio G. Norte	550,000	181	96	150
Parahyba	1,200,000	121	—	200
Pernambuco	3,065,000	427	203	1,350
Alagoas	1,000,000	23	—	100
Sergipe	490,000	8	—	100
Bahia	3,500,000	80	42	300
Espirito Santo ...	500,000	390	10	800
Totals	14,655,000	7,964	1,903	13,400

For each State the author suggests different measures of control, and in the second conclusion of the report he says:

"The extent of the leprosy problem demands a national campaign of prophylaxis, directed and maintained by the Union. Within five years one well-executed and uninterrupted campaign will dominate the problem, with a general expense of 50,000 contos (about \$5,000,000) for the entire country."

Another conclusion suggests that the Government should prepare experts to assume charge of the work as full-time employees. The author insists on the necessity that leprosy clinics be opened in every capital; also that survey commissions should make a census of the lepers in the interior of the country and carry on epidemiological studies in some active, widespread focus.

—[FROM AUTHOR'S ABSTRACT.]

(NIGERIA). Report on the Medical and Health Department, 1931. Lagos, 1932.

In Nigeria four leprosaria are being maintained by the Government, 20 by Native Administrations, and seven by missions. Three large new ones are under construction:—(1) At Osiomo, in Benin Province, a camp for 500 lepers with ample farm land is being built from a fund granted by the Colonial Development Fund. (2) At Uzuakoli a camp for 500 lepers is being built by the Owerri Province Native Administration and will be supervised by a doctor engaged by the Primitive Methodist Mission. At Victoria a camp for 50 lepers, with ample farm land, is being built by the Native Administration assisted by a grant from the Government.

Lepers are being treated in these farm colonies successfully, but as segregation is entirely voluntary the number of inmates varies from time to time. The average populations of 22 settlements listed in the report were: 20 persons or less, 6 settlements; 30 to 50, 5; 70 to 80, 4; about 150, 2; about 225, 2; the other three had 327, 400 and 950.

At all hospitals in the country a certain number of lepers are treated as out-patients. Some 2,000 to 3,000 are so treated, but the results of such intermittent and non-regulated treatment are naturally disappointing. —H. W. W. HOFFMANN, W. H. Fortschritte der Leprabehandlung. (Progress of leprosy treatment). *Jahrb. Miss. ärztl. Inst. Würzburg* 9 (1932) 39.

All who go out to tropical countries for medical work should have some general idea about leprosy. They will encounter many prejudices which they may help to dissipate, especially that about the incurability of the disease, a view which is no longer correct. They should be instructed with regard to our modern methods of treatment, especially with chaulmoogra oil and its derivatives. These produce practical cures, because the bacilli disappear and the cases are no longer infective. Certain other medicaments effectively aid the chaulmoogra treatment. The result depends essentially on early diagnosis and early treatment, which are fundamental for the eradication of leprosy. Just as in tuberculosis, it is essential for the result of any treatment to keep the patient under the most favorable conditions.

Though many cases are characteristic, there are always some in which the clinical diagnosis may be very difficult. It is desirable to have new serological or other methods by which cases can be discovered in an early stage, independently of their clinical aspect. With progress of knowledge it is to be expected that through hygienic and prophylactic measures leprosy will disappear from the infected areas, as it once disappeared from Europe.

—[AUTHOR'S ABSTRACT.]