

## CURRENT LITERATURE

*It is intended that the current literature of leprosy shall be dealt with fully in this department. It is a function of the Contributing Editors to provide abstracts of all articles published in their territories, but when necessary such material from other sources is used when procurable.*

ARNOLD, H. L., JR. Differential diagnosis in leprosy. *Arch. Dermat. & Syph.* **44** (1941) 911-912.

This brief note is the first of a series of articles on leprosy published by the author and associates from an organization called "The Clinic" in Honolulu, some of which (see later) are of controversial intent and therefore invite some departure from simple objective abstracting. In this one the principal diagnostic criteria of early leprosy are listed, with emphasis on the determination of thermal anesthesia. The absence of that change, it is stated, is so rare in leprosy that it is safe in practice to assume that it does not occur; anesthesia to light touch as with a camel's hair brush, is often absent, and analgesia to pin prick even more so. —H. W. W.

GRASSET, E. and DAVISON, A. R. Antigenic treatment of leprosy by means of a non acid-fast variety of tubercle bacillus (N.A.C.) *So. African J. Med. Sci.* **7** (1942) 236-244.

A report of a trial of an antigen prepared from a nonacid-fast variety of the bovine tubercle bacillus obtained in 1934 by Grasset, which he had found to be of value in the treatment of certain tuberculous infections. For the trial 20 lepromatous and 20 neural cases were selected to represent each type and sub-type of the disease. No benefit resulted in the lepromatous cases, and they are excluded from further consideration. The lesions of the neural cases—for the control of which they used the results of other treatment of 24 other such cases selected at random—included raised red macules, flat red or pink macules, and grey granular macules; patients whose nasal or skin smears were showing or had shown *M. leprae* but whose skins were normal were also included. The N. A. C. was injected bi-weekly [sic] in doses rising from 0.5 to 10 cc., with very slight and passing reactions, but at the end of three months there was no evident change so at the patients' request the routine intradermal injections of iodized hydnocarpus esters were resumed, the N. A. C. being continued as before. Fifteen of the 20 cases had shown leprosy bacilli at some time, yet all of them became negative during the treatment, with the exception of two patients who died (cerebral hemorrhage, pneumonia). Moreover, in 16 cases the skin lesions cleared up. In contrast, the 24 controls showed prolonged absence of the lepra bacilli in only 4, and 4 showed absence of activity, but in the rest the skin lesions persisted. At the time of reporting the 15 improved cases had been clinically and bacteriologically negative for a minimum of 11 months. The combination of N. A. C. and hydnocarpus esters therefore appears to be worthy of further trial in positive neural cases of leprosy. —[From abstract in *Trop. Dis. Bull.* **40** (1943) 546.]

MOISER, B. Potassium iodide as a provocation test in leprosy. Experience of 244 cases at Ngomahuru Leprosy Hospital, Southern Rhodesia. *Lep. Rev.* **13** (1942) 6-7.

This is a report of two years' experience with the potassium iodide provocative test in 244 cases. The drug was given once a week over a period of nine weeks in the following ascending doses: 5, 10, 20, 40, 80, 160, 240, 320 and 320 grains. In 196 cases no reactional effects were observed, this, apparently, constituting success in passing the test; in 25, skin reactions occurred; in 4 there were febrile reactions; and in 19 there were both skin reactions and pyrexia. One patient died suddenly after 40 grains; a postmortem examination was not performed. If reactions occurred the test was repeated after one to three months, and second or third tests were required in 23 cases. Of the total, 135 patients have been discharged and 85 are still under observation but not under treatment, 34 of whom are still bacteriologically positive. Of these 34 positive cases 25 passed the test, hence it is by no means an infallible indication of the arrest of the disease. It should only be used in patients in good physical condition and, in spite of some unreliability, is considered to be of value as a guide to discharge of cases.—[From abstracts in *Trop. Dis. Bull.* **39** (1942) 696, and *Lep. in India* **14** (1942) 139. The editor of the latter periodical comments that the statement that there were no ill effects from the use of this test is not in keeping with the findings of certain workers who have reported unfortunate results, and that his own experience indicates that there is distinct danger of inducing reaction in affected nerves or eyes, causing trophic lesions or impairment of vision, and that reactivation of the quiescent disease is not uncommon.]

MOORE, M. The chorioallantoic membrane of chick embryos and its response to inoculation with some mycobacteria. *Am. J. Path.* **18** (1942) 827-847.

This method of inoculation was employed with the bacilli of human, bovine, and avian tuberculosis, two strains from cold-blooded animals, and rat leprosy bacilli obtained from lesions 8 to 10 months of age. The eggs were incubated for 12 or 13 days before inoculation (10-day embryos having proved less hardy) and thereafter for 5 or 6 days; the membranes were then fixed in Zenker's and sectioned. Most of the embryos exposed to the rat leprosy bacillus died and the others were extremely weakened. As with the other inocula, macroscopic lesions developed. Microscopically the ectoderm was apparently disintegrated and invaded by many monocytes and macrophages or epithelioid cells, the whole being of nodular appearance; there were bacillus-containing giant cells and many polymorphonuclear leucocytes. Of chief importance were large numbers of large phagocytes with eccentric nuclei and somewhat vacuolated cytoplasm loaded with acid-fasts in vacuoles ("globi"), these cells being spoken of as "lepra" or "foam" cells. There was a striking resemblance to the lesions produced by the avian tubercle bacilli, but the nodular reaction was an important feature; with the avian bacillus the phagocyte is an epithelioid cell whereas with the leprosy bacillus it "appears to be a specialized 'lepra' cell." The lesion, it is held, is so characteristic of that of the disease that the path to the further investigation of this infection and human leprosy is cleared of a number of obstacles. [As the characteristic cells appear in the photomicrographs the bacillary masses apparently contained little ground substance. It is not stated whether or not the bacilli are believed to have multiplied.] —H. W. W.

- MARIANO, J. Estudo anatomo-clinico de alguns casos de cancer e lepra. [A study of cases of cancer and leprosy.] *Acta Med. (Rio de Janeiro)* **11** (1943) 121.

There is a fairly widespread notion that there is some antagonism between leprosy and malignant disease, that cancer is a rare complication of leprosy. Evidence is brought to refute this error in a report of five examples, all in lepromatous cases aged from 38 to 51 years, seen within six years among the patients [number not stated] in two colonies in the State of Minas Gerais. In one there was carcinoma of the right lower eyelid extending to the face; another had an ulcerous lesion of the left nostril, regarded as possibly leishmaniasis but shown histologically to be cancer; the third had a carcinomatous lesion very similar to the last; the fourth had an extensive fibrosarcoma of the right leg, death occurring in less than three months after amputation at the upper third of the thigh was performed; the fourth died of adeno-carcinoma of the stomach.

—[Chiefly from abstract in *Trop. Dis. Bull.* **41** (1944) 221.]

- MOM, A. M. Relación entre la acción difusora de la piel lepromatosa y su contenido en bacilos de Hansen. (Comunicación preliminar.) [Relation between the diffusion factor of the lepromatous skin and its bacillary content; preliminary report.] *Rev. argent. de dermatosif.* **27** (1943) 549-558 (summary in English).

The study here reported pertains to the Duran-Reynals spreading factor—from the beef testis and other tissues, including skin—which in 1928 and subsequently that worker and collaborators showed to have interesting effects upon skin infections and reactions. Whether in the present study or a previous one it is difficult to say from the material available, the author found that diffusion of extracts of normal skin was about one-half of that of testicular extract; with an extract of skin of tuberculoid leprosy [presumably lesion, but not so stated in the abstracts] the diffusion was slightly less than that with the normal skin extract; with an extract of skin from lepromatous leprosy diffusion was only equal to that of normal saline. It was suspected that leprosy bacilli present in the extract served to inhibit the spreading factor, and two experiments were carried out to investigate that point. In one experiment rabbits were injected to ascertain the spread of trypan blue in (a) whole lepromin (but made only .04 per cent of leproma instead of the 5 per cent of Mitsuda's method; (b) a purified bacillary suspension (Fernandez' "bacillary lepromin"); and (c) saline control. Diffusion with the whole lepromin was five times as great as with the bacillary suspension, the latter giving no more than, and perhaps less than, the saline control. In the other experiment three specimens of skin from lepromatous patients were used, they having respectively few, moderately numerous, and many bacilli [again without it being stated definitely that the skin specimens themselves had these characteristics], and 5 per cent centrifuged suspensions were made. The diffusability of these extracts varied inversely with the bacillary content, that of the high-content suspension being less than that of the saline control. The acknowledged paradoxical results of these two experiments—the active spreading of the "standard" [but dilute] lepromin and lack of spread of what presumably represented a lepromin [apparently more concentrated; unheated?] are speculated upon but not explained.—[From abstracts in *Trop. Dis. Bull.* **41** (1944) 582 and *Rev. Brasileira Leprol.* **12** (1944) 85.]

RABELLO, E., JR. A lepra incharacterística na experiência do Sanatório Padre Bento. [Incharacteristic form of leprosy as observed at the Sanatorio Padre Bento.] *Rev. brasil. de leprol.* **11** (1943) 115-132.

A polemic article, based mainly on material studied by Souza-Lima and others in Sao Paulo, and apparently in part directed against conclusions of Wade concerning the essential nature of the macular lesions called "simple neural" in the Cairo classification. How really complicated is the group of lesions called "incharacteristic" by the South American workers is shown in a tabulation which gives the findings in 136 Sao Paulo cases clinically of that class; it is divided into three main groups, essentially as follows (Form I being "incharacteristic," Form T being tuberculoid, and Form L being lepromatous):

<i>Histology and Mitsuda</i>	<i>Evolution</i>	<i>Diagnosis</i>
(1) Round-cell infiltration; Mitsuda variable.	(a) Established (incl. regression); (b) progression to T; (c) progression to L.	Form I (undifferentiated); 70 cases, 51.4 per cent.
(2) Epithelioid infiltration (38 cases):		
(a) Early tuberculoid; Mitsuda negative, doubtful or weak (8 cases).	(a) Established (incl. regression); (b) progression to T.	Form I (metatypical); 28 cases, 20.6 per cent.
(b) Do; Mitsuda strongly positive (20 cases).		
(c) Frank tuberculoid; Mitsuda generally strongly positive (10 cases).	=Atypical tuberculoid.	Form T; 10 cases, 7.4 per cent.
(3) Lepra cell infiltration (28 cases):		
(a) Early lepromatous; Mitsuda weakly or strongly positive, doubtful (6 cases).	(a) Established (incl. regression); (b) progression to L.	Form I (metatypical); 19 cases, 14.0 per cent.
(b) Do; Mitsuda negative (13 cases).		
(c) Frank lepromatous; Mitsuda generally negative (9 cases).	=Atypical lepromatous.	Form L; 9 cases, 6.6 per cent.

—H. W. W.

SEIBERT, F. B. and NELSON, J. W. Electrophoresis of serum; serum proteins in tuberculosis and other chronic diseases. *Am. Rev. Tuberc.* **47** (1943) 66-77.

This is a study of the proportions of serum proteins (albumin and alpha, beta and gamma globulins) as determined by planimetric measurements of the curves produced by the Tiselius technique, in tuberculosis of the rabbit and of man and in sarcoidoses and—rather incidentally—in three specimens from advanced leprosy cases obtained from Culion. Without actual hyperproteinemia except of slight degree in some cases, the averages for total proteins in the three human groups are distinctly high, close to the upper limit of range of the controls. Albumin quite consistently de-

creased in all groups, moderately in human tuberculosis and sarcoidosis, markedly in the leprosy cases and the tuberculous rabbits; the globulins were increased, though the averages show actual inversion of the A/G ratio only in the rabbits (1:1.15) and the leprosy cases (1:1.31). With respect to the globulin fractions, in human tuberculosis the increase was in the alpha and gamma elements, these changes—as also the decrease in albumin—being proportional to the stage of the disease; the same fractions were increased, but more markedly, in the leprosy sera. In sarcoidosis there was a conspicuous rise only in the gamma fraction, and in the tuberculous rabbits only the beta element was consistently increased. [Though the number of leprosy specimens examined was small, the findings were so consistent that they may probably be regarded as significant.]—H. W. W.

- 8 SOUZA-ARAÚJO, H. C. O diagnóstico da lepra pelo exame da linfa subcutânea; método Lleras, segundo o Dr. H. C. de Souza-Araújo; o Prof. Salvador Mazza, da Argentina, reclama para si a prioridade do método. [Diagnosis of leprosy by the examination of subcutaneous lymph, the Lleras method according to Dr. H. C. de Souza-Araújo; Mazza claims priority for the method.] *Acta Med.* 11 (1943) 82 (summary in English).

A letter is reproduced in which Mazza claims to have originated the method and published it in 1918 (*La Prensa Med., Argentina*). Souza-Araújo points out, and in support reproduces a photograph published by Mazza, that the latter's procedure—which involves the use of a scalpel—was one for biopsy, and not for obtaining cutaneous lymph as in the method described by Lleras Acosta in 1937 and Souza-Araújo in 1943 [see *THE JOURNAL* 12 (1944) 132]. A photograph showing the latter method is also reproduced, for comparison. [In the title of this note, and elsewhere, the author speaks of the method as one to obtain "subcutaneous" lymph, whereas in the title of his original note and other places he speaks of "cutaneous" lymph. Since the photograph shows drops of fluid on the surface of a compressed fold of skin that is intact except for the needle punctures, and since the fluid must come from along the entire tract of the punctures and not solely from the subcutis, the latter term would seem obviously the correct one.]

—H. W. W.

- 9 ARNOLD, H. L., JR. and TILDEN, I. L. The two kinds of leprosy: lepromatous and tuberculoid. *Proc. Staff Meet., The Clinic, Honolulu* 10 (1944) 91-94.

It has long been recognized that one kind of leprosy has lesions with abundant bacilli and is of bad prognosis, while the other has lesions with few or no demonstrable bacilli and is of much better prognosis; the fundamental difference is due to the patient's resistance or lack of it, evidenced partly by the results of the [lepromin] skin test, partly by the histological changes seen in biopsies, and partly by other considerations. From this point of departure the authors discuss the limitations in the matter of the "first leprologists," who "unhappily had only their eyes to guide them," and the obscurity and confusion that the "pure clinicians, who had had but limited opportunity for histological study," were responsible for in the efforts at classification made in 1931 and 1938. A table compares the standard definitions of certain terms with the special definitions employed



by such workers, to demonstrate how completely the matter had been confused by these efforts—with no recognition of the greater confusion that had existed before that. However, a few workers—"Hansen, Danielssen, Boeck and Jadassohn, to name a few"—approached the problem from the biologic, dermatologic, and histologic standpoints with the result that it was found necessary to create a third, intermediate or indeterminate group, and Jadassohn is said to have named the three groups "lepromatous," "tuberculoid," and "simple inflammatory,"—statements which would doubtless have surprised all of the workers named. The "Latin-American dermatologists' classification" is given in the form of Pardo-Castello's scheme [actually that of Pardo-Castello and Tiant, a decided modification of the Brazilian one]; and this is also objected to because, like the "official" one, it is primarily anatomical rather than histological. The "simple inflammatory" class is regarded as unnecessary, for "most if not all such cases are examples of tuberculoid leprosy in which the tuberculoid (sarcoid-like) histologic changes are simply immature." For this reason and "with a little stretching" with respect to the more or less indeterminate early lesions, the term "neural" of the older clinical leprologists may be replaced by "tuberculoid."

—H. W. W.

GRAU TRIANA, J., DE CASTRO PALOMINO, J. and CONDE MATEO, E. Poliformismo y cultivo evolutivo del bacilo de Hansen. [Pleomorphism in cultures of *Mycobacterium leprae*.] Rev. Leprol. Dermat. y. Sifil. (Marianao, Cuba) 1 (1944) 236-241.

Following up the work recorded in THE JOURNAL, 14 (1946) 158 the authors discuss the varied morphology of the leprosy bacillus reported by those who have attempted to cultivate it, which they regard as largely due to the method of culture. In studying this matter they have employed four media: (a) one for rapid culture [kind not stated in the abstract] with added potato oxidase, (b) a similar one but with ferrous sulphate instead of the oxidase, (c) for slow growth, preservation and subcultivation Petragnani with peptone instead of asparagin, and (d) a synthetic fluid medium [preparation given in detail in the abstract]. The variations in forms are described [without statement as to the source of the organisms], the most interesting being a change on No. 4 to a mostly blue-staining filamentous branching actinomyces-like organism, which reverted to more ordinary forms on return to the other media.

—[Abstract from *Trop. Dis. Bull.* 42 (1945) 213.]

ARNOLD, R. L., JR. The sweat response to intradermally injected mecholyl: preliminary report of its possible use in the diagnosis of leprosy. Proc. Staff Meet., The Clinic, Honolulu, 11 (1945) 75-81.

In the absence of evidence of damage to motor or sensory nerve fibers in suspected cases of leprosy, there remain for investigation the autonomic nerve elements in the skin—vasomotor, pilomotor, and sudomotor. There are no reliable means of eliciting the goose-flesh response and consequently no way to test its loss. The histamine test for the (vasomotor) flare—said to have been recently (1942) ascribed by Lewis to special "nocifensor" efferent fibers in the dorsal roots—the author regarded as unsatisfactory. He has therefore investigated the test for sudomotor damage, using mecholyl instead of pilocarpine. Mecholyl is a trade name for acetyl beta-methyl choline chloride (or bromide), the action of which is essentially

identical with that of acetylcholine. These substances activate the sweat glands, whereas all other sympathetically innervated structures are activated by adrenalin. After trying lower concentrations employed by previous workers he found 1:100 to be the most satisfactory—the amount injected not stated. The sweating response is demonstrated by painting the area with iodine. (Minor's solution of iodine and castor oil in absolute alcohol) before making the injection, and dusting it with starch afterward; sweat droplets give rise to the blue reaction color. In 12 "neural" cases tested there was positive differentiation of the affected areas from neighboring normal areas except in one instance. In 6 control cases with certain dermatological conditions there was no such differentiation except in 2 cases of an obscure macular condition called "achromia parasitica." This test is regarded as worthy of further trial. —H. W. W.

ARNOLD, H. L., JR. and TILDEN, I. L. The classification and nomenclature of leprosy with suggestions for a simplification of both. *Ann. Int. Med.* **23** (1945) 65-73.

This article is essentially an amplification of a preceding one. Several of the type-names used around the end of the last century are cited, without recognition of the efforts of the older workers (notably Danielssen and Boeck, Leloir, and Hansen and Looft) to establish the fact that there are only two essential forms of the disease. The "orthodox clinical classification" is analyzed critically, and in the course of that the concept of "mixed leprosy"—referred to as a "rather remarkable group" which "for some mysterious reason" is sometimes set apart as a third clinical form—is made the subject of caustic comment though it is recognized that it was not given the status of a distinct type. In that connection the surprising assertion is made that since "N" cases are "by definition" those usually showing few or no bacilli, whereas "L" cases are "by definition" those showing many bacilli, it follows that "LN" cases must be in the peculiar position of having, simultaneously, poor and strong immunological response to the causative bacillus. Pointing out as does the "official" classification that both forms of the disease involve both the skin and the peripheral nerves, the analysis ends with the statement that it is by no means rare to see advanced lepromatous leprosy of nerves with minimal skin involvement, or advanced "neural" leprosy of the skin with minimal nerve involvement, therefore some other term than "neural" is urgently needed for that group of cases. The "biologic-dermatologic" classification—here ascribed to Jadassohn, alone—is treated as if distinct from the South American one. As for the latter, Pardo-Castello's version of it would be relatively acceptable if it did not retain the old anatomical (primary) subdivision but had made the primary division on histological grounds. The special meanings attached to the words "neural," "nodule," "macule" and "mixed leprosy" by "clinical leprologists" represent, for them the existence of two diametrically opposed forms of leprosy, but for the nonleprologist physician "this fundamental distinction has been glossed over, almost as if deliberately." These terms, it is asserted, can gradually be dropped in their restricted leprologic sense, to be replaced by standard dermatological nomenclature, if "neural" is replaced by "tuberculoid." From this point of view, it is held, the three types of classification are compatible.—H. W. W.

CERQUEIRA PEREIRA, P. As leprolinas Souza Araujo—seu emprego—resultados em comparação com a reação de Mitsuda. [The leprolins

"Souza-Araujo" and their use; results in comparison with the Mitsuda reaction.] Mem. Inst. Oswaldo Cruz **42** (1945) 217-221.

The author, at the Marituba leprosarium in Pará, received six lots of leprolins at the end of 1943 without instructions for their use, so the observations were not begun until late in May, 1944. Two groups of patients were tested; one of bacteriological negatives (28 cases), the bacilli eliminated 1 or 2 years previously, the other of bacteriological positives (29 cases). The Mitsuda test was made some time after the other tests were completed, in the first group only [presumably on the assumption that the others would all be negative].

Antigen	Negative group		Positive group	
	Positive	Negative	Positive	Negative
Lepromin	22 <sup>a</sup>	5	....	....
Leprolin #1	21	7	17	12
Leprolin #1a	16	12	10	19
Leprolin #3	15	13	2	27
Leprolin #4	25	3	26	3
Leprolin #5	17	11	18	11
Leprolin #5a	15	13	5	24

a—3 cases 1 plus, 16 cases 2 plus, 3 cases 3 plus; data on 1 case lacking.

The author points out that antigen No. 4 is always [*sic*] positive in all cases, and concludes that the reactions in leprosy persons to the two types of antigens are not concordant, there being cases in which the same individual reacts positively to the one and negatively to the other, and vice versa.

—H. W. W.

MARIANO, J. Contribuição para o tratamento da lepra. Ensaios terapêuticos com as "leprolinas Souza-Araujo" números 1 e 5, pelas vias intravenosa e intradérmica. [Contribution to the treatment of leprosy; trials with leprolins Nos. 1 and 5 of Souza-Araujo by the intravenous and intradermal routes.] Mem. Inst. Oswaldo Cruz **42** (1945) 341-363.

A preliminary report of 18 months' experience with two lots of these leprolins, No. 1 (the "Jose" strain, isolated from a patient) and No. 5 (the "Rudan" strain, isolated from the tick *Boophilus microplus*). The former was used in 17 cases, the latter in 13; 25 were lepromatous and 5 tuberculoid. Details of each case are recorded. Injections were given at intervals depending on the tolerance of the patient, every 4 days at the shortest, usually every 8 days. The initial doses were 0.1 cc. intravenously and 1.0 intradermally, increased according to tolerance. Of the 30 cases, 27 show evident improvement in their general condition; 3 stopped treatment, two because of febrile reactions and one without just cause. Bacteriological examination of the 22 lepromatous cases still under treatment at the time of the report showed 4 to be negative, 7 improved and 11 unimproved in this respect. Eight of them (36%) had become reactive to lepromin, indicating allergic defense. The work was being continued.—[From author's summary, in which no distinction is made between the cases given the No. 1 and No. 5, and nothing is said of the results in the tuberculoid cases.]



TILDEN, I. L. Lepromatous leprosy; a reticulo-endothelial disease; histopathological aspects. *Am. J. Clin. Path.* **15** (1945) 165-177.

This study of the histopathology of lepromatous leprosy is based on a study of 32 biopsy specimens of such lesions, 9 of tuberculoid lesions, and autopsy material from 16 cases, supplied by Sloan, of Kalaupapa, and material from 16 cases, mostly tuberculoid, encountered in the author's own practice. Emphasis is laid on the involvement of the reticulo-endothelial system in the broader sense of Maximow, which system of cells derives from the embryonal mesenchyme and is widely distributed throughout the organism in post-natal life, retaining the multiple potentialities of embryonal cells to differentiate in different ways depending upon the type of stimulus. One of the most important lines of development is to the histiocyte; and it is this cell—whether spindle-shaped or round, large or small, in the skin, the liver, or the spleen—that is the *cell* of leprosy. Thus it is that leprosy in general simulates other diseases of the reticulo-endothelial system, mention being made of lymphoblastoma cutis, "a malignant neoplastic reticulo-endothelial disease" (especially from the resemblance here being clinical), histiocytoma cutis (re the histology of the more spindle-cell lepromas), other xanthomata and xanthelasma (re the foamy-cell lepromas), and Gaucher's and Nieman-Pick's lipoid storage disease (re the foamy-cell infiltrations of the spleen and liver). The fact that the testis is involved, though it has no reticulo-endothelial implications, is regarded as perhaps an exception to this general thesis. [The possibility that monocytic infiltration from the blood stream may be involved in the production of the leproma, as many students of tuberculosis believe it is in the lesions of that disease, is not mentioned.] The findings in the lesions of the skin and other organs [not including peripheral nerves] are described and illustrated as well as could be expected from the limited amount of material at the author's disposal. The globi are described as cells distended by bacilli and containing lipoid, with no mention of the matrix ("schleim" of Unna) in which the bacilli lie in true globi. With regard to the tuberculosis of which some of the autopsied cases had died, the author was impressed by the acute and progressive nature of that condition. Comment is also made on the frequency of amyloidosis, it having been found in 9 out of 16 cases, usually quite extensive.

—H. W. W.

TILDEN, I. L. and TANAKA, M. Fite's fuchsin-formaldehyde method for acid-fast bacilli applied to frozen sections. *Clin. Path.* **15** (1945) 95-97.

Fite's method of staining acid-fast bacilli in tissues has been given far too little attention by pathologists. The time of staining at room temperature, it has been found, can be reduced from 24 or 48 hours to 15 minutes, with no difference in the results except that the bacilli are less intensely stained. The most important feature of the technique is the after-treatment by formalin, which renders the bacilli extraordinarily resistant to the subsequent treatment; it is necessary that the section turn blue in the formalin, after which the bacilli remain of that color. The method as applied to frozen sections is given in detail, and photomicrographs show the results obtained with both leprosy and tubercle bacilli.

[Fite's method of staining acid-fast bacilli.—Fite's two articles on the subject have been abstracted in *THE JOURNAL* **8** (1940) 413 and **9** (1941) 264, but that of the second, definitive one (*Jour. Lab. & Clin. Med.* **25** (1940) 743) is an author's abstract which gives no detail. That article is ab-

stracted again here, with mention (parenthetical) of the modifications employed by Tilden and Tanaka. (1) Fixation by 10 per cent formaldehyde in 95 per cent ethyl alcohol preferred, but the method is said to be the most reliable one irrespective of the fixative employed. (Ordinary 10 per cent aqueous formalin mentioned alternatively.) (2) Stain in carbol fuchsin at 60°C overnight to 12-24 hours, or at room temperature 24-48 hours, the longer periods recommended for the leprosy bacillus. (As little as 15 minutes at room temperature; see above.) Staining solution: new fuchsin—magenta III, the trimethylated compound, much better than the simpler compounds of ordinary basic fuchsin—0.5 gm., phenol crystals 5.0 gm., methyl or ethyl alcohol 10 cc., distilled water to make 100 cc. (3) Wash. Place in strong formalin, 5 minutes. The section must turn blue, and the purest formalin is required. Reagent grade, 40 per cent, kept in dark bottles, is usually satisfactory; ordinary commercial formaldehyde may be redistilled through a simple water-cooled glass condenser to give a usable product about 30 per cent but should be freshly prepared. (The reagent grade found regularly is satisfactory.) (4) Wash. Decolorize in 2 per cent HCl in 95 per cent alcohol, 10 minutes. (For the quick-staining method less drastic treatment is necessary, 1 per cent HCl in 70 per cent alcohol.) (5) Wash. Potassium permanganate, 1 per cent, until brown; usually 2-5 minutes. (6) Wash. Oxalic acid, 2 per cent, 1 minute. (Or 30 seconds, until just a trace of brown color remains.) (7) Wash. Hematoxylin—Harris' specified—2-5 minutes. (8) Wash. Van Gieson's stain, 3 minutes. Stain: Acid fuchsin 0.1 gm., picric acid 0.5 gm., distilled water to make 100 cc. (Reducing the acid fuchsin to 0.01 gm. gives a paler background, an excellent contrast to the deep blue-black of the bacilli.) (9) Without washing dehydrate in alcohol, clear in xylol and mount in balsam. (Alcohol 95 per cent, 2 minutes, followed by absolute ethyl or isopropyl 1 minute; clear in xylol and mount in damar.) —H. W. W.

(Note.—Stain Technology searched for reference to new fuchsin or magenta III. (1) (Fite's first article abstracted (14 (1939)) with comment that the source of it was not given. (2) Another abstract (15 (1940) 86) refers to various magentas, including III, new fuchsin; specially prepared. (By whom?) Not encountered in any of the lists of certified dyes.)

AMARO FERNANDEZ, J. M. Contribución al estudio de la lepra en Marruecos. El subfoco Jaldi. [Leprosy in Morocco. A sub-focus in Jaldi.] Med. Colonial. Madrid 8 (1946) 127-45.

In the Gomara area of Spanish Morocco, leprosy is known to be endemic; just to the north of this lies Jaldi, and the author has found that the disease is present there also. The inhabitants are pastoral and agricultural. Ten cases are considered in this paper, 1 female and 9 males; as for age, 1 was in each of the second, third and fourth decades, 3 in the fifth, 2 in the sixth, and 2 were over that age. Various degrees and types were seen; 3 are classed as  $L_1N_2$ , 2 as  $L_2N_1$  and 1 each as  $L_1N_1$ ,  $L_3N_1$ ,  $L_2N_2$ ,  $L_1N_3$  and  $L_3N_3$ . Six have died, 3 after less than three years' illness and 3 others before the tenth year of their disease.

—[Abstract from *Trop. Dis. Bull.* 44 (1947) 823.]

BEAUDIMENT, R., LAVIRON, P. and ARETAS, R. Considérations sur la lèpre, son traitement, sa prophylaxie dans les colonies françaises. [Treatment and prophylaxis of leprosy in French Colonies.] Méd. Trop. Marseilles. 6 (1946) 3-51.

The author records at length his views on the histology, classification, diagnosis, treatment, and prophylaxis of leprosy as seen in French West African Colonies. They closely follow the generally accepted views, but the following points are worth noting. After describing the histological features of the different types of the disease, he suggests the following classification; (1) IT, infiltration tubercular (lepomatous); (2) T, tuberculoid; and (3) NS, non-specific. By the last term he appears to mean lesions which are not diagnostic, although a number of such lesions may be clinically suggestive of early leprosy. Among diagnostic points, he includes the pilocarpine test for loss of sweating power; the histamine test to differentiate between early neural skin lesions and those of syphilis; and late positive lepromin reactions in neural and tuberculoid cases; but the sedimentation test is only of prognostic value. He deals at length with treatment and stresses the importance of neutralizing chaulmoogra oils used for injections. For perforating ulcers without bone necrosis, he advocates division of the sympathetic nerve fibres around the main arteries of the limbs, especially the popliteal; but the operation may have to be repeated. For prophylaxis, he relies on agricultural colonies with ample land to cultivate, to which at first only lepomatous cases should be admitted. In view of the rarity of conjugal infections, married couples can be admitted, with early removal of children born to them. Sterilization is impracticable. —[Abstract from *Trop. Dis. Bull.* 44 (1947) 727.]

CARBONELL, M. and CONTRERAS DUENAS. Exploración objetiva de los trastornos nerviosos iniciales de la lepra. [Objective testing for early nerve disturbances in leprosy.] *Revista "Fontilles"*. Valencia. 5 (1946) 403-6.

In children and in older persons of low intelligence little reliance can be placed on replies to subjective tests regarding loss or change in sensation; hence the greater value of objective tests. The authors stress the use of pilocarpine and of histamine in testing early leprotic lesions in which the bacilli are scarce and cannot be found. They particularly favor Degotte's method of painting the suspected area with tincture of iodine, injecting pilocarpine and dusting with starch powder. In a healthy skin the iodide of starch reaction is very obvious in 4-6 minutes; its absence in diseased areas indicates secretory defect due to nerve lesion. They next compare the action of histamine with that of Priscol, a substance the composition of which is not stated but which acts on the small arteries and arterioles rather than, like histamine, on the capillaries. Drops of this are placed on skin which is apparently healthy and on adjacent parts which are thought to be diseased and the skin is pricked with an ordinary hypodermic needle but *not deep enough to draw blood*. This is important, because not only are the nerve terminals in the skin acted upon, but also the vascular endothelium leading to a direct vasodilator action and a false positive result. Comparing Priscol with histamine, the initial erythema appears sooner, the secondary, reflex, erythema more quickly, and the third phase, the papule due to increased capillary permeability, earlier in the skin under the histamine drop than in that beneath the Priscol. Also the histamine papule is devoid of color and shiny in the centre, whereas that of Priscol is more rounded and erythematous.

—[Abstract from *Trop. Dis. Bull.* 44 (1947) 592.]

- FLOCH, H. and de LAJUDIE, P. Sur la transmission de la lèpre par les arthropodes. [The transmission of leprosy by arthropods.] Institut Pasteur de la Guyane et du Territoire de l'Inini. Publication No. 138. (1946) 3.

The author discusses the varied results of the many attempts to transmit leprosy by means of insects, and the large number of arthropods, harboring acid-fast bacteria, which have been incriminated from time to time. Special reference is made to the Brazilian workers, de Souza-Araujo, de Oliveira Castro and Mariano, whose experiments, especially that of the first-named regarding the isolation of acid-fast bacteria from lepromatous lesions, have been extensively reviewed in this Bulletin [see *Trop. Dis. Bull.* 42 (1945) 1006-1010]. The present authors, working in French Guiana, examined 50 *Aedes aegypti* and 235 *Culex fatigans* captured in leprosy wards and found acid-fast bacilli in 4 of the former and 8 of the latter: they also cultivated acid-fast bacilli on Löwenstein's medium from the crushed bodies of 4 *Triatoma rubrofasciata* which had fed on lepromatous lesions and 96 *C. fatigans* from leprosy wards: the bacilli could not be sub-cultured. A culture of acid-fast bacilli which could be maintained on ordinary media was however obtained from 9 inoculations of *Boophilus microplus* collected from cattle. This strain has been studied and compared with de Souza-Araujo's strains, which it resembles biochemically and in its failure to produce a "tuberculin," but from which it differs in some cultural characteristics. The author considers that the strains studied are related to the majority of the "paratubercle bacilli" isolated up to now, which do not produce tuberculins (although Cabasso [*Bulletin of Hygiene*, 1942, v. 17, 660] demonstrated a tuberculin in an acid-fast saprophyte isolated from a fly.) [It is noteworthy that Moiser [*Trop. Dis. Bull.* 43 (1946) 454; *ibid.*, 44 (1947) 321], who found acid-fast bodies in 69 per cent of cockroaches in a hospital and neighboring kraals, and in the dried droppings of the insects, did not find them in the bodies of other insects, such as fleas, bugs, or ticks. Moiser assumes that the acid-fast organisms found were "Hansen's bacillus"; but in a comment on the first abstract quoted above, it is stated, on the authority of Professor Buxton, that cockroaches eat a great variety of types of food, and that many types of bacilli, including presumably acid-fast organisms, may well be expected to be found as normal inhabitants of these insects. Short of transmission experiments—the difficulties of which are evident—the imposing amount of recorded work accumulating upon acid-fast bacilli in arthropods can hardly be expected to bear very fruitful results in its present form. If ever there was a need for a rigid fulfilment of Koch's postulates, this would appear to be one; but in the absence of suitable experimental animals, the difficulties remain.] —[Abstract from *Trop. Dis. Bull.* 44 (1947) 724.]

- GRASSET, E., MURRAY, J. F. and DAVIS, D. H. S. Vole bacillus: Susceptibility of South African wild rodents to the vole strain of acid-fast bacillus and other acid-fast bacilli; preliminary report. *Rev. Tuberc.* 53 (1946) 427-439.

This microorganism, not virulent for guinea-pigs or rabbits, was found pathogenic in two species of gerbils (*Tatera afra* and *T. brantsii*), the lesions containing an abundance of bacilli as in some cases of leprosy, whereas the whitefooted rat (*Mystromys albicaudatus*) was slightly resistant and the multimammate mouse (*Mastomys coucha*) only slightly less



so. A group of 16 *Tatera* and 7 *Mystromys* was inoculated with a suspension of leprosy bacilli from a lesion, without evidence of infection in any animal up to 327 days. —H. W. W.

FREDERICO GUILLOT, C. and OSWALDO CURCI, A. Embarazo y lepra. Consideraciones acerca de la lepra en los estados fisiologicos femeninos. [Pregnancy and leprosy. A study of leprosy in physiological conditions in women.] *Rev. argent. de dermatosif.* **30** (1946) 313-21.

That males are infected with leprosy in greater numbers than are females is a fact generally acknowledged. Diniz, analyzing 82,821 cases, found 57,008 males and 25,813 females, or 2:2:1, and the authors found among 5,705 Argentine leprosy patients, 3,682 males, 2,023 females, or 1.82:1. In Norway, it is true, female cases predominate, but in that country there are no new cases and the preponderance is ascribed to the greater length of life of the women. Predominance in males is probably due to more opportunities of exposure to and contraction of the infection, and to the intrinsic factor that the greater thyroid activity in women and "the presence of more iodine in the system" protects members of the female sex. In the young, where exposure is the same for boys as for girls, the numbers are closely alike. After these preliminary statements, the authors pass on to consider in more detail leprosy infection in women. Examination of 200 female leprosy patients revealed *vulval lesions* in 13 per cent. Thiroux found Hansen's bacillus in the vaginal secretion in 27.2 per cent of those with the lepromatous form of the disease, "much less in other forms." But it is acknowledged that the acid-fast organisms may be of the "smegma type" and not Hansen's organism. The uterus may itself show lesions and Kobayashi found the bacilli in the ovaries of six patients in an advanced stage of the disease. Infection of the breasts is not uncommon and organisms indistinguishable from *Myco. leprae* may be seen in the milk. As regards *menstruation*, leprosy infection in pre-puberty years may retard the onset, and during puberty may suspend the menses. On the other hand, menstruation may precipitate the leprotic reaction. Next, *fecundity*; the relatively small number of births to leprosy patients is, probably, not due to lowered fecundity but to the fewer opportunities for sexual congress or to precautionary measures taken. As for *pregnancy* itself, the drain on the system lowers resistance to disease and the history of leprosy appearing during or soon after pregnancy or parturition is not infrequent. The leprosy does not appear to affect pregnancy adversely, nor parturition, but the reverse is to be observed; the exhaustion of the latter may lead to exacerbation of the disease, but not in the tuberculoid form. A table is given with brief notes of 11 pregnancies in 6 subjects. Most proceeded normally but one had a tuberculoid reaction on the second day of the puerperium, another had a similar reaction on the fortieth day after parturition; a third had a lepromatous reaction [time not stated] and a fourth had a similar reaction in the fifth week. [An interesting study.] —[Abstract from *Trop. Dis. Bull.* **44** (1947) 591.]

GARCIA MIRANDA, A. Valor de la prueba de la lepromina. [Value of lepromin test.] *Rev. Leprol. Dermat. y Sifil. Mariano, Cuba.* **3** (1946) 120-25.

Several forms of antigen have been used for the intradermal test for leprosy: Mitsuda-Hayashi's lepromin prepared from lepromata and containing Hansen's bacilli and tissue debris; bacillary lepromin, a suspension

of bacilli only; soluble purified lepromin extracted from the bacilli; a suspension of the antigen in oil; and 2-4-dinitro-chloro-benzene. The results of tests by Mitsuda and the Mantoux reactions were: In leprosy subjects, discordant. In nonleprosy subjects, the Mitsuda reaction was positive in 78 per cent, as high as that observed in countries where leprosy is endemic and the two reactions were found to coincide. In patients with cutaneous tuberculosis the Mitsuda and the Mantoux tests gave the same results. Lastly, 123 children negative to both tests were vaccinated with BCG. In a month the Mantoux reaction was positive in all but one, the Mitsuda was positive in 87 (70.7 per cent), weakly positive in 26 (21.1), negative in 10 only (8.1 per cent). Again, in a person believed to be free from leprosy, infection with *Myco. tuberculosis* may provoke sensitization to leprosy antigen. The author sums up his conclusions by saying that the lepromin test is of great prognostic value and is a gauge of the body's defense; it has much value prophylactically, a negative result signifying absence of powers of resistance; the Mitsuda reaction is an allergic one and if positive in nonlepers it is due to sensitization by *Myco. tuberculosis*. Intradermal injection with whole lepromin will bring about resistance to the leprosy bacillus, i. e. it is of prophylactic use; the reaction to lepromin is of assistance in diagnosis of leprosy lesions from those which may be confused with them; dinitrochloro-benzene acts equally as well as bacillary lepromin as an antigen; the Mantoux and Mitsuda reactions differ in a leprosy patient, but in nonlepers they are coincident in 87 per cent.

—[Abstract from *Trop. Dis. Bull.* 44 (1946) 431.]

MAFFRAND, R. Lepra ocular. [Ocular leprosy.] *Día Médico.* 18 (1946) 1058.

This brief paper speaks of leprosy affections of the eye in somewhat general terms, not going into detail nor giving any figures of prevalence of the ocular complications of leprosy. In the tuberculoid form the globe itself does not suffer. Cases which are recorded as leprosy iritis and iridocyclitis, the author states, are not truly leprosy but tuberculous, syphilitic, or due to sepsis. The lepromatous form does, however, affect the globe and that frequently, particularly the anterior parts, with infiltration of the cornea, especially the upper layers, and later the iris and the ciliary body. The conjunctiva, in spite of the fact that the secretion may contain many leprosy bacilli, is not usually itself involved. The sclerotic is affected in a manner similar to the cornea. Little is said concerning treatment, merely that there is no specific treatment of much avail and that the "results are problematical." Surgical measures may be tried "according to the special circumstances of each case."

—[Abstract from *Trop. Dis. Bull.* 44 (1947) 213.]

MOISER, B. Leprosy: a New Outlook. *East Africa Med. J.* 23 (1946) 295-300.

The author thinks that if the name of Hansen's disease is substituted for leprosy "you have got rid of the dread of the disease." He can find no evidence that either compulsory or voluntary segregation has ever reduced leprosy, but he advocates the latter. He states that the disease is a rural, family, and home disease, but he thinks it "a complete fallacy to say that long continued, close, intimate contact is necessary for the transmission from the diseased to the healthy," and he knows of no "facts that have ever been brought forward to prove this." He has therefore sought for a

new outlook and thinks he has found it through the observations recorded in his previous paper that cockroaches, both in leprosy hospitals and after feeding the insects on leprosy patients (but also in those found in villages with no cases of leprosy) may show in the intestinal canal oval acid-fast staining bodies which he assumes to be a stage of a pleomorphic lepra bacillus, and which may be found in the droppings of cockroaches up to at least sixteen months. He states that these insects bite man "voraciously," so he suggests that they transmit leprosy to mankind. Contrary to the findings of many earlier workers, he has not found acid-fast organisms in other insects, such as fleas, bed bugs, or ticks. He advocates further research on these lines with the aid of a mobile laboratory. Definite proof of his hypothesis can only be obtained by experiments of man, the validity of which he is doubtful about.

—[Abstract from *Trop. Dis. Bull.* 44 (1947) 321.]

MOISER, B. Transmission of Hansen's Disease (Leprosy). *Acta med. Scandinav.* 126 (1946) 347-50.

This is a further paper in support of the author's hypothesis that infection is transmitted by the bites of cockroaches. It commences with the following emphatic statements, which will be accepted by few experienced leprologists. The exact manner of transmission "is still quite unknown." [For several instances in which the patient developed the first signs of leprosy at the site of a wound made during operation on an infective patient, or by other direct inoculation of the infection, see *Leprosy* (Rogers & Muir) 3rd Ed., pp. 89-91.] "There is no proof whatever" that the disease is transmitted by infection or contagion. "Over 60 per cent of my native patients had definitely never been in contact with the disease." [How did they know they had never approached an unrecognized case?] The author's long experience gives him "confidence in distinguishing *M. leprae* from other acid-fast bacilli, so that the bacilli found in the roaches in a Hansen Hospital can be positively claimed as *M. leprae*." It is on microscopical examination alone that he bases this conclusion. He goes on to repeat that roaches ingest the bacillus of Hansen in great numbers when fed on leprosy nodules and the organism can be found in their gut in large numbers up to the 19th day, and remain unchanged in the dried droppings of the roach for at any rate sixteen months. The most notable feature in roach-slides is the presence of groups of acid-fast oval bodies, which are illustrated by a colored plate, together with a few free bacilli and an acid-fast mycelial branch. The only new point in this note is that Professor Reenstierna, of Sweden, at once recognized these oval bodies as greatly resembling the "maternal fungus," which he had discovered in 1912 in a culture from blood taken from a Swedish leprosy patient, and which, in 1939, he had detected in direct films of blood taken from the arm-vein of another Swedish leprosy patient (in which he also found Hansen's bacillus), and which he also found in leprosy nasal smears, etc. The author also repeats that he has reported similar bacilli in roaches caught in native huts, several miles from the leprosy hospital, in which no case of Hansen's disease has ever been known to occur. [The statement that Reenstierna discovered the "maternal fungus" in a culture from the blood of a leprosy patient seems to prove that it is very different from the true lepra bacillus, over seventy years' innumerable attempts to culture

which have all proved negative. Confirmation or otherwise of Moiser's ingenious hypothesis will be awaited with interest.]

—[Abstract from *Trop. Dis. Bull.* 44 (1947) 725.]

MONTEL, R. and GIROUD, P. Affinités tinctoriales du bacille de Stefansky. (Méthode de Macchiavello.) [Staining reactions of Stefansky's bacillus.] *Bull. Soc. path. exot.* 39 (1946) 248-50.

The following is a translation of the authors' summary. In smears and frozen sections of rat lepromata, it was possible to distinguish two different morphological forms of Stefansky's bacillus, when the preparations were stained by Macchiavello's method without previous fixation; in one form, the organisms were unstained, refractile and in very large numbers; the other were much smaller, stained a ruby-red color, were slender and very scanty. These observations confirm those already made by one of us regarding Hansen's bacillus (*Mycobacterium leprae*) in the blood of leprosy patients. See *Trop. Dis. Bull.* 43 (1946) 1152.

—[Abstract from *Trop. Dis. Bull.* 44 (1947) 322.]

MUIR, E. Diasone in the treatment of leprosy. *Leprosy Rev.* 17 (1946) 87-95.

This is a paper on the treatment of 12 cases of leprosy in England, 10 of which were in a fairly advanced lepromatous stage; the other two were intermediate ones and strongly positive bacteriologically. The usual dose is one gram a day as twice that dose produces anemia. It is administered in capsules, each containing  $\frac{1}{3}$  gram, one of which was given on alternate days three times a week, increased in cases showing no contraindications by one capsule each day until a maximum of six capsules are given on each of three days in a week. If any anemia occurs with hemoglobin below 75 per cent, iron, with liver or yeast, is also given. After each three weeks of full dosage a week's rest from drug is given. If a reaction occurs the drug must be stopped until it has completely subsided. Tolerance is soon acquired and the dosage may then be pushed up to twelve grams a week for three weeks in each month. Short notes are recorded of the 12 cases, with the following results. A noteworthy effect was improvement in the condition of the eyes in 4 cases in which complete blindness might have been expected to result. In 7 cases, prolonged chaulmoogra treatment for years had not prevented deterioration in the condition, but after a few weeks' treatment with diasone all had made steady improvement. The cessation of febrile reactions and new crops of nodules was especially noteworthy, but it is too soon to say what the ultimate results will be, and it cannot yet be said whether the drug can be prepared in large quantities at a cost which would allow of its general use in very large numbers of leprosy patients.

—[Abstract from *Trop. Dis. Bull.* 44 (1947) 327.]

RADNA, R. Sur l'évolution de certains cas de lepre neuromaculeuse. [On the evolution of neuromacular leprosy.] *Ann. Soc. belge de méd. trop.* 26 (1946) 89-93.

About one-half of the neuromacular cases seen in the Belgian Congo are of the sort with few macules. The author, interested in the question of spontaneous clearing-up of cases of this type, [See Cochrane, *THE JOURNAL* 2 (1934) 385], took advantage of an opportunity to reexamine certain groups of cases (55 of NS1 form and 34 of Nt1 form) which he



had seen five or six years previously. He found that the large part of those re-examined had remained stationary or had improved almost spontaneously (abortive cases), a fact looked upon as of importance in the epidemiology of the disease. The general condition of the patients, their living conditions, and the quality of their nourishment seem to be of great importance with respect to the later development of such cases. They eliminate practically no bacilli, and their lesions are very responsive to local specific treatment; hence they should not be subjected to isolation but should be treated in rural dispensaries—they should also be given the possibility of living well-regulated lives and of procuring good food. The rapid success obtained from specific local and general treatment gives evidence to the native population of the effectiveness of the antileprosy "arsenal" and should have a favorable influence on the progress of the anti-leprosy campaign. —H. W. W.

Row, R. Isolation of *Mycobacterium leprae* in culture. *Indian Physician* 5 (1946) 75-81.

After admitting repeated failures over a period of 35 years, the author mentions the current interest in antibiotic principles of living organisms and his own interest in the opposite phenomenon, symbiosis. Having adopted certain hypothetical conditions with respect to the selection of a suitable symbiont—that it should not overwhelm the culture or radically change its constitution, and should be readily distinguished and, when desired, eliminated—he chose the parasite *Leishmania tropica* for trial. After 10 days at 20°C. the flagellates had grown well and there was marked proliferation, in close association with the *Leishmania* rosettes, of the originally thin suspension of leprosy bacilli, they being fatter and longer than when inoculated; and in another week the former in smears were obscured by the latter. In transplants made onto hemoglobinized serum agar (at 20°C.) with a view to continuation of the symbiotic growth, there developed a translucent film consisting mainly of *Leishmania* but with numerous fine yellow colonies of acid-fast bacilli. In transplants made on glycerinated potato (at 37°C.) in the hope of getting a pure culture of the bacillus, there developed an abundant dull but not dry, canary yellow growth composed of acid-fast coccoid bodies. This form persisted in subcultures but returned to the bacillary one on growing them again in symbiosis, though in general the coccoid form predominated. Four other isolations of similar character have been accomplished from other cases, and a similar one was also obtained from an inoculation of material from rat leprosy lesions. —H. W. W.

TISSEUIL, J. De la confusion actuelle dans la classification des formes de la lèpre. Caractères principaux et secondaires. Lèpre cutanée et lèpre tuberculoïde. [Confusion in the classification of leprosy. Principal and secondary characters. Cutaneous and tuberculoid leprosy.] *Bull. Soc. path. exot.* 39 (1946) 430-40.

The first half of this paper discusses the opinions of earlier writers, from Danielssen onwards, on the classification of leprosy into nerve and cutaneous forms and the author points out that Jadassohn in 1891 first correctly described the characters of the tuberculoid variety. He goes on to criticize the inclusion of this form as a sub-division of the nerve type in recent classifications, and gives the following as its essential characters: A central zone of healing with lighter color of the skin; an intermediate,

yellowish, more or less infiltrated zone, with thickening more and more marked from the centre to the periphery; an outer ring of infiltration under the healthy skin, which is red or reddish-yellow, papular or regularly infiltrated. The patches increase at the periphery by slow extension from the diseased to the healthy tissue. No nerve symptom is peculiar to this variety of lesion and any nerve symptoms which may be present are of a subordinate nature. Loss of sensation ceases abruptly at the border of tuberculoid patches, which tend to be symmetrical. Classing them under nerve leprosy is therefore confusing. Only cutaneous lesions properly so-called may be classified as cutaneous and as tuberculoid leprosy; these two forms are clearly differentiated by their characters and their evolution.

—[Abstract from *Trop. Dis. Bull.* 44 (1947) 726.]

TISSEUIL, J. Essai d'interprétation de la réaction de Mitsuda. [Interpretation of the Mitsuda reaction.] *Bull. Acad. de méd.* 130 (1946) 499-502.

This is a brief discussion of the nature of the Mitsuda reaction. The author points out that in cutaneous leprosy the reaction is negative, because all the tissues, even those apparently healthy, contain the lepra bacilli, and it is specific because other acid-fast bacilli, including those of Stefansky, give positive reactions. Moreover, in lepromatous cases the reaction becomes positive in the case of cures with disappearance of the lepra bacilli from the tissues, and it again becomes negative in the case of relapses of the infection. The true nature of the reaction in this class of cases remains to be determined. On the other hand, in tuberculoid leprosy the reaction is positive both in the healthy and in the involved skin, although very few bacilli are present in the thickened patches; but it is not specific, because reactions are also produced by para tuberculous bacilli, such as those of Kedrowski and of Clegg, as well as by Stefansky's bacillus. In this form, it is therefore difficult to speak of allergy because different bacilli give reactions. In healthy persons reactions are obtained in some cases.

—[Abstract from *Trop. Dis. Bull.* 44 (1947) 325.]

WHARTON, L. H. Promin therapy. *Leprosy Rev.* 17 (1946) 96-8.

The author reports on the treatment with promin for one year of 7 C<sub>3</sub> lepromatous cases of leprosy in the British Guiana leprosy hospital, all young adults who were rapidly going downhill under chaulmoogra treatment. They were all complicated with chronic ulcers of the legs, nodules on the hands and face and edema, and two patients were nearly blind. Two grams of promin were injected intravenously daily for six-day periods followed by one day's rest, and the dose gradually increased by 1 gram weekly to a maximum of 5 grams. After six weeks' treatment one week of rest was allowed. At the end of a month general improvement was seen; after three months, ulcers were healing and edema subsiding, the eye conditions appeared to be arrested; and in six months, chronic ulcers had healed and nodules were flattening. During the second six months, improvement continued, but in 7 cases lepra bacilli had decreased in the nodules, but not in the nose.

—[Abstract from *Trop. Dis. Bull.* 44 (1947) 326.]

AUSTIN, C. J. Control of Leprosy. [Correspondence.] *Brit. Med. J.* Apr. 12 (1947) 506-7.

In this letter Austin quotes the following statement in a leading article in the *British Medical Journal* of November 2nd, 1946, p. 655: "It soon became evident that compulsory isolation had become worse than useless." He goes on to defend the use of compulsory segregation in Fiji and quotes from an account of the work there [see *Trop. Dis. Bull.*, 1945, v. 42, 736] to show good results with 25 per cent of admissions discharged as "arrested." He states that in dealing with the disease in 40 scattered islands, the voluntary system would not enable the earlier cases to be found and treated. He therefore protests "against the assumption that because a policy has been found impossible or inadvisable in certain areas it is thereby necessarily to be condemned everywhere." In a short letter in the *British Medical Journal* of April 26th, Rogers mentions that the leading article in question dealt mainly with his paper in the same journal of June 1st, 1946, p. 825. He recalls that what he has condemned "as worse than useless" is the indiscriminate compulsory isolation of *all types of leprosy*, including a large proportion of uninfected neural cases, with consequent hiding of most patients until their disease has become too advanced to be amenable to treatment and they have infected members of their households—a plan now nearly universally modified. He quotes from a memorandum of 1925 his view that: "No hard-and-fast rules can be laid down to cover every area," and he agrees that Fiji, with only 2,775 cases in 1936 [see *Leprosy*, 3rd Edit., p. 14] is a very exceptional case where good work is being done. [A table of estimated leprosy cases in the British Empire shows that out of a total of 1,733,482 no less than 1,722,900 (over 99 per cent) are in Asia and Africa, where no one would now suggest the possibility or advisability of attempting the old wholesale segregation plan. See *Leprosy*, 3rd Edit., p. 48.]

—[Abstract from *Trop. Dis. Bull.* 44 (1947) 728.]

BARMAN, J. M. Absorción de los esteres etilicos y bencilicos del aceite de chaulmoogra administrado por via duodenal. [Absorption of chaulmoogra derivatives administered directly into the duodenum.] *Rev. argent. de dermatosis*. 31 (1947) 103-7.

The dosage of chaulmoogra oil administered intramuscularly is limited because of "local intolerance"; *per os*, it causes gastric irritation and this route has, therefore, been practically abandoned. Since digestion and absorption of fatty substances take place in the intestine, the author has given the drug by duodenal tube, to by-pass the stomach. He estimated the fecal fat, total, neutral fats and fatty acids, before giving the drug and in the two motions after the administration. Of 11 patients so treated, nine showed a small increase in the fatty acids eliminated, in 2 only was there a marked increase in excreted fat, indicating in the former that the preparations used, the ethylic and benzylic esters, had been absorbed. He next carried out experiments on dogs. They were kept without food for 18-24 hours; then the thoracic duct was opened under anesthesia and 20-30 cc. of chaulmoogra preparation were passed by catheter into the duodenum. The times when the lymph began to be turbid, when it became quite milky, and when it cleared again were noted; also the degree of lipemia in the dogs and, it is stated, in the human subjects. Two of the dogs died under the operation, one probably from the anesthetic and one from injection of creosoted chaulmoogra by mistake. In the others, the lymph was milky in an hour or so and usually clear again in 3-5

hours. The results may be summed up by saying that the high fat-content of the lymph and increase in the blood fat showed that absorption from the intestines had been satisfactory. Examination of the liver and lungs showed fatty deposits there, indicating that absorption from the duodenum takes place, in part at least, by the blood-stream. [Doubtless others will try this method. The present paper lacks important information; thus, no mention is made of the dosage used in the human patients, nor of the type or stage of the disease; again, after stating that estimation of the lipemia would be made in the human cases during the period of absorption, this matter is not again referred to; finally, the number of cases is very small.]  
—[Abstract from *Trop. Dis. Bull.* **44** (1947) 908.]

FITE, G. L., CAMBRE, P. J., and TURNER, M. H. Procedure for demonstrating Lepra Bacilli in Paraffin Sections. *Arch. Path.* **43** (1947) 624-5.

The lesser "acid-fastness" of *Myco. leprae*, compared with *Myco. tuberculosis*, makes it difficult to stain appropriately in paraffin sections. Faraco (*Rev. Brasileira Leprologia*, **6** (1938) 177) showed that such material could be stained by oiling the sections and staining them with carbol fuchsin while they were in that state, but the present authors have found this method cumbersome, though effective. They have obtained satisfactory results, irrespective of techniques of fixation and embedding, with the following method, which, it is also stated, should do well with tubercle bacilli: 1. Remove paraffin with two changes (1 to 2 minutes each) of a mixture of 1 part of oil (cottonseed, peanut, or olive) in 2 parts of xylene. 2. Drain, wipe off excess oil, blot to opacity. 3. If mercury crystals are present, remove them with strong iodine solution (2 minutes), followed by hyposulphite or thiosulphate solution. Wash in tap water. 4. Stain cold for 15 to 30 minutes in any standard (but not concentrated) carbol fuchsin. Wash. 5. Decolorize with 1 per cent concentrated HCl in 70 per cent alcohol to a faint pink color. One to 2 minutes will be required. Wash. 6. Counterstain with Loeffler's alkaline methylene blue for 30 seconds. Wash in tap water. 7. Blot, stand until dried out and mount in a synthetic mounting medium. The oil hastens acid-fast staining and more regular staining results without the use of heat. The residual oil left in the sections after blotting prevents shrinkage and injury of the preparation: almost any oil will serve, though volatile oils are less useful. If a larger proportion of oil is added to the xylene, decolorization becomes more difficult. The method "succeeds admirably with tissues indifferently fixed or embedded years previously where other procedures fail miserably."

—[Abstract from *Trop. Dis. Bull.* **44** (1947) 1008.]

CHALA H., IGNACIO and LLERAS RESTREPO, F. Ensayos con leprominas filtrada y bacilar desintegrada. (Reacción precoz.) (Nota preliminar.) [Tests with lepromin preparations.] *Rev. Facul. de Med. Bogota.* **15** (1947) 442-64.

After preliminary remarks on the Mitsuda lepromin reaction, the authors describe three lepromin preparations used by them in these tests. They emphasize that the intradermal lepromin test is *not* a diagnostic measure, but is useful in classifying the type of disease, and in determining its severity, evolution, and prognosis. In the present series of experiments three preparations were used: Whole lepromin, filtered lepromin, and bacillary disintegrate lepromin. 1. *Whole lepromin* (lepromina integral)



prepared from lepromata rich in bacilli, in patients who had had no treatment. The tissue is boiled in physiological saline for one hour, then cut into small pieces, dried *in vacuo* and ground to powder in a mortar. Saline is then added in proportion of 10 cc. to 0.4 cgm. of the powder and the mixture again ground up, allowed to settle and the supernatant fluid decanted; this process is repeated "several times." To the final product 0.5 cgm. phenol (or merthiolate) is added to every 100 cc. and put up in ampoules of 1-5 cc. and sterilized at 120°C. for 45 minutes. 2. *Filtered lepromin*.—The leproma after being bottled and cut up is triturated to a paste and filtered and the filtrate concentrated to one-tenth at 58°C., so that 1 cc. equals 1 gram of the leproma. It is then put up in ampoules and sterilized. 3. *Bacillary lepromin*.—The leproma is triturated and chloroform added (25 cc. to each gram of tissue); the chloroform is separated, the whole evaporated in a waterbath, the residue is suspended in ether, centrifuged to throw down the bacteria; the ether is decanted, the process repeated and the deposit (extracted bacilli) triturated and suspended in phenol saline and sterilized after putting in ampoules as before. With each, 0.1 cc. is injected intradermally into the scapular area. The early reaction is noted after 48 hours and is regarded as positive if there is an erythema more than 4 mm. in diameter with an infiltrated centre. The late, or delayed, reaction is noted in four weeks and in a strongly positive case presents a papule or nodule of 5 mm. or more, perhaps with central necrosis or ulceration. The results in different types of leprosy are noted, and the author makes the following conclusions: 1. The early reaction to "filtrate" and "bacillary disintegrate" antigens has the same significance as the Mitsuda reaction, whether positive or negative, and without the undesirable effects of the latter test: the early reaction with whole lepromin sometimes had the same value as the Mitsuda. 2. The disintegrate antigen is more active, and produces more intensive early reactions than the filtrate. 3. The early reaction with filtrate and bacillary antigens is of practical importance in clinical selection of cases. 4. Strongly positive results are obtained with early reactions to both of these antigens and with late reactions to whole lepromin in typical tuberculoid leprosy: simple macular or anesthetic neural types give negative or slightly positive results. 5. Focal reactions in cutaneous lesions were sometimes met in tuberculoid cases, especially with the bacillary antigen. 6. The use of bacillary disintegrate antigen is recommended for routine work. Percentages are given in support of the results, and the reactions are also illustrated by photographs: but the totals on which the percentage figures are calculated are not given.

—[Abstract from *Trop. Dis. Bull.* 44 (1947) 823.]

---

The following abstracts of articles not previously appearing in THE JOURNAL were taken from Rev. brasil. de leprol.

CHALA, I. J. and LLERAS RESTREPO, T. Tratamiento biologico en la lepra. Suero terapia antileprosa. [Biological treatment of leprosy; serum therapy.] Rev. Colombiana Leprol. (Bogota) 3 (1941) 357.

In a historical review of the serum therapy of leprosy, Juan de Dios, Carrasquilla Lema, and Olaya Laverde, who began their activities in 1895, are cited as the forerunners of serum therapy in leprosy in Colombia. The authors have employed sera prepared at the Lleras Institute by means of repeated subcutaneous and intravenous injections of sheep and goats with

filtrates from cultures of acid-fast bacilli of various origins, isolated from leprosy tissues or other materials, and also in some cases by inoculations of triturated lepromas rich in Hansen bacilli. Normal sera of animals of the same species were used as therapeutic controls. The tolerance on the part of the patients was considered good, with benign reactions. In the first cases treated [numbers and types not stated in the abstract] 81 per cent improved, 15 per cent remained stationary, and 4 per cent progressed.

—[From abstract in *Rev. brasil. de leprol.* 10 (1942) 117.]

FERNANDEZ, J. M. M. and CASTRO, N. O. Estandarizacian de la leprolina. [Standardization of lepromin.] *Rev. argent. de dermatosif.* 25 (1941) 435.

The authors, who regard the lepromin test as one of the most useful in leprosy with respect to prognosis, describe a method of separating the bacilli from the tissue element of the suspension to produce a "bacillary lepromin." The aqueous suspension of boiled and triturated leproma is brought to 1.050 sp. gr. by the addition of sodium chloride and centrifuged; most of the bacilli remain suspended while the tissue sediment goes down. The supernatant is then reduced to 0.950 sp. gr. with alcohol [100° alcohol specified, but hardly necessary] and centrifuged to throw down the bacilli. The sediment is dried *in vacuo*, ground to a powder, weighed, and made into a 1 per cent suspension of which 1:10, 1:100 and 1:1000 dilutions are made. Reactions to such suspensions are very similar to those to ordinary whole ("integral") lepromin, the results with the 1:100 and 1:1000 solutions showing a direct relationship with the degree of dilution. This bacillary antigen has the advantage of standardization over the ordinary crude ones. [Not stated in the abstract is the concentration to be used for routine testing.]

—[From abstract in *Rev. brasil. de leprol.* 9 (1941) 448.]

LOIOLA PEREIRA, O. Ensaio do tratamento da lepra com o soro preparado pelo Prof. Reenstierna, da Universidade de Upsala, Suécia. [Trials in the treatment of leprosy with Reenstierna's serum.] *Africa Med.* (Lisbon) 7 (1941) 247.

A detailed report of the trial of Reenstierna's serum in 10 cases in the Goa leprosarium, Portuguese India. After 5 months, 3 showed improvement while 6 [this totals 9] were stationary or worse.

—[From abstract in *Rev. brasil. de leprol.* 10 (1942) 114.]

MARIANO, J. Estudo comparativo entre o resultado do exame bacterioscópico de suco ganglionar na lepra e o test de Mitsuda. [Comparative study between the result of bacterioscopic examination by gland puncture and the Mitsuda test in leprosy.] *Arq. Mineiros Leprol.* (Bello Horizonte) 1 (1941) 297.

Gland puncture, the author holds, is of much value in diagnosis, and being simple it should be made routine. It was performed in 17 cases, with positive results. The Mitsuda reaction was negative in all of them. [No indication is given, in the abstract, that these were cases in which the ordinary examination of the skin was negative, and the fact that all cases were lepromin negative suggests that they may have been lepromatous.]

—[From abstract in *Rev. brasil. de leprol.* 9 (1941) 446.]

O'BYRNE, A. Ideas sobre el posible uso de la pancreatina en la bacteriología del bacilo de Hansen. [The possible use of pancreatin in the study of the Hansen bacillus.] *Rev. Fac. Med. Bogota* 8 (1941) 574.

When pancreatin was applied to suspensions of the acid-fast Hansen bacilli, without centrifuging, they became acid-sensitive after periods of time that varied with the concentration of the enzyme.

—[From abstract in *Rev. brasil. de leprol.* 9 (1941) 315.]

PESCE, H. Apuntes para la geografia de la lepra en la Sierra del Peru. [Notes on the geography of leprosy in the Sierra of Peru.] *Actualidad Med. Peruana* 7 (1941) 8.

The Chief of the Antileprosy Service of Apurimac presents observations on the incidence of leprosy in the Sierra of Peru, stressing little-considered factors of geography in the epidemiology of the disease. The geographic, ecologic, and other conditions in Apurimac are considered in detail, and it is pointed out that practically identical conditions exist in other parts of the Sierra.

—[From abstract in *Rev. brasil. de leprol.* 11 (1943) 100, which lists the topics discussed but does not indicate what was said about them.]

SANTIAGO, P. E. A lepra em Santa Catarina. [Leprosy in Santa Catarina.] *Rev. Combate Lep.* (Rio de Janeiro) 6 (1941) 4.

Leprosy in the State of Santa Catarina is believed to be declining. Since the beginning of survey work, in 1938, only 393 cases and 18 suspects have been found, an incidence of 0.34 per thousand.

—[From abstract in *Rev. brasil. de leprol.* 9 (1941) 441.]

SOARES MACHADO, L. Distribuição geografica de lepra no Rio Grande do Sul em 1939. Distribuição por Municipios e por Zonas do Estado. [Geographical distribution of leprosy in Rio Grande do Sul in 1939; by municipalities and by zones of the State.] *Arq. Rio Grandenses de Med.* (Porto Alegre) 20 (1941) 111.

Of the 86 municipalities of Rio Grande do Sul, 45 have cases of leprosy, totaling 350 patients. The incidence is not uniform, but the disease is found in the center and in the four principal points of the State. Notwithstanding finding leprosy in the majority of the municipalities in the Encosta la Serra zone, a region of active immigration, it is in the municipalities which front on the Argentine border (Misiones) and on the State of Santa Catarina (middle or northeastern plateau) where the incidence is highest.

—[From abstract in *Rev. brasil. de leprol.* 10 (1942) 113.]

CHALA, J. I. Sulfuro de antimonio coloidal en la lepra. [Sulphur of colloidal antimony in leprosy.] *Rev. Fac. Med.* (Bogota) 11 (1942) 1.

A report of treatment of a few cases (nephritis) at the "Instituto Lleras," with isotonic colloidal antimony (Stibical) containing 0.002 mgm. of metallic antimony per cc. This medicament was given intramuscularly and subcutaneously in doses of 2 cc. three times a week, in series of 12 or 14 injections and an interval of two or three weeks between each series, the total number of injections given to each patient varying from 65 to 90. Tolerance was perfect, and the results were promising. In one case, tuberculoid, the macular lesions had disappeared after less than 5 months and the improvement had been maintained a year later. Another case was treated for 8 months, after which time the lesions had cleared up. A third showed marked improvement after 7 months. In all, apparently, the evident disease had been of short duration.

—[From abstracts.]

- MANTILLA, A. J. La prueba de la histamina para el diagnostico precoz de la lepra. [The histamine test for the early diagnosis of leprosy.] Hansen, Cali (Colombia) (1942) No. 14, p. 29.

The test, properly carried out, is held to demonstrate alterations of sensibility even before the appearance of clinically appreciable disturbances of sensation. It is highly useful in the differential diagnosis of localized areas of dyschromia, especially among children of leprous parents, and in the early diagnosis of leprosy generally.

—[From abstract in *Rev. brasil. de leprol.* 11 (1943) 168.]

- MARIANO, J. Preparação das substancias alergenicass de chaulmoogra. (Seu emprego nos individuos portadores do mal de Hansen.) [Preparation of allergenic substances of chaulmoogra; their uses in cases of leprosy.] Arq. Mineiros Leprol. (Belo Horizonte) 2 (1942) 5.

With the purpose of controlling the reaction provoked by chaulmoogra and its tolerance in patients, the author undertook to prepare an allergenic substance capable of better guiding the use of this medicament. Seeds of *Taractogenus kurzii* and *Oncoba echinata* were used. The dried seeds were ground, covered with sulphuric ether, and refrigerated, the solvent being changed twice in 24 hours. The defatted powder was dried at 37° and extracted in Coca's solution. (Solution No. 1: sodium chloride 50, monobasic potassium phosphate 3.63, dibasic sodium phosphate 14.31, distilled water 1,000. Solution No. 2: phenol 4 per cent. For use, 1 part of each and 8 parts of distilled water.) In continuation—and this is all that is said of the matter in the abstract—he presents the results of the use of the allergen, considering it satisfactory.

—[From abstract in *Rev. brasil. de leprol.* 10 (1942) 361.]

- MARIANO, J. Alergeno chaulmoogrico no uso diario da terapeutica da lepra. [Chaulmoogra allergen for daily use in the treatment of leprosy.] Arq. Mineiros Leprol. (Belo Horizonte) 4 (1944) 19.

Pursuing his experiments [see preceding item] regarding the use of the chaulmoogra allergen as a preservative element with respect to the cutaneous complications of intradermal infiltrations, the author asserts that leprologists should exercise care in starting the treatment of patients to avoid reactions or at least serious intoxication. His control is based on the use of his chaulmoogra allergen, which indicates the cases that are allergic to chaulmoogra. This allergen, he holds, should be always used before starting any chaulmoogra treatment. The technique adopted in his experiments is given, with descriptions of 10 cases observed, accompanied by numerous photographs.

—[From abstract in *Rev. brasil. de leprol.* 12 (1944) 297.]

- MUNEZ RIVAS, G. Algunas observaciones relacionadas con las pulgas y la transmision de la lepra. [Observations on the rôle of fleas in the transmission of leprosy.] Rev. Fac. Med. (Bogota) 10 (1942) (?).

The author has attempted to clarify the rôle of the flea as a vector of leprosy. One reason why it is regarded as important is that it is so cosmopolitan. He finds that when fleas bite leprosy patients they may extract bacilli and retain them in the digestive tract for 76 hours. Of flea larvae with the dejecta of adult insects that have fed on patients, 20 per cent had alcohol-fast bacilli. All larvae given food heavily infected with leprosy bacilli had bacilli. Of larvae captured in infested places, 75 per

cent had abundant acid-fast bacilli morphologically identical to that of leprosy. Normal larvae placed in contact with dirt removed from the bedrooms of bacteriologically positive cases showed, in 62 per cent of instances, abundant acid-fast germs at the end of 4 days. Contaminated larvae in pre-nymphal stage rarely gave origin to infected nymphs, though there may be found acid-sensitive forms ("suspect germs"). From the statistics of Colombia it seems that foci of leprosy occur in regions where incidence of fleas is high. From his bacteriological findings the author believes that this insect is responsible for the transmission of leprosy.

—[From abstract in *Rev. brasil. de leprol.* 10 (1942) 474.]

SILVEIRA, L. M. Correção plastica das deformidades do lóbulo da orelha na lepra. [Plastic correction of the deformities of the ear lobe.] *Arq. Cir. Clin. Exp.* (Sao Paulo) 6 (1942) 485.

The author, who is a surgeon of the Asilo-Colônia Pirapitingui, presented at the 1st Latin-American Congress of Plastic Surgery several reports on such surgery in leprosy. In the present article he points out that plastic correction of the deformities produced by leprosy is justified, despite the fact that the seriousness of the disease may make such repairs seem useless. Many patients are discharged (400 in the Sao Paulo service), and many of them bear stigmatizing deformities. Many have requested corrective intervention, not for esthetic reasons but because otherwise they would be conspicuous and repulsive in healthy society. Even within the leprosaria—and in the State of Sao Paulo there are five large cities of leprosy patients with more or less active social and commercial activities—there are those of absolutely normal appearance, and strange as it may seem the existence of deformities causes more concern than the disease itself. Hence even inmates who are without hope of early discharge frequently request corrective intervention. With respect to the ear, the contour of the hypertrophied lobule may be normal in spite of great increase of volume. But when nodules appear, as frequently happens, the periphery may be highly irregular. Simple hypertrophy is easily repaired by resection of a wedge of tissue from the lobule, made by a V-shaped incision with posterior opening, closed by interrupted silk sutures. The posterior location of the external extremity of the scar is favorable for an esthetic result, even when there is some retraction of the border; if the scar is in the inferior border of the lobule the retraction, however slight, is conspicuous, producing a bilobate outline. When the hypertrophy is produced by the proliferation of irregularly disposed nodules, the technique mentioned cannot always be used. Each case has its own solution, causing no difficulties for the surgeon accustomed to plastic intervention. In whatever way possible the scar should be placed so that retraction, which in many cases is very evident, does not give injury to the esthetic of the restored lobule. The work is illustrated with 12 photographs.

—[From abstract in *Rev. brasil. de leprol.* 10 (1942) 471.]

SILVEIRA, L. O problema das inclusões nas deformidades nasais de origem leprótica. [The problem of correction of nasal deformities of leprosy origin.] *Arq. Cir. Clin. Exp.* (Sao Paulo) 6 (1942) 532.

The varied nasal deformities of leprosy constitute an interesting problem in plastic surgery, and one of importance when it is considered how many clinically cured patients are so affected. In those with old deformities the skin of the nose is retracted, its elasticity lessened, which



often makes it difficult to obtain good esthetic results after corrective inclusions. For this reason it is frequently necessary to implant comparatively small pieces to serve a dilating function, later to be replaced by larger ones which make the desired correction. While there are cases with good tolerance to ivory, that material is as a rule far from ideal; there were so many failures due to early or late elimination that its use was abandoned. Suspecting that there might be a specific intolerance referable to leprosy, despite the fact that this intervention was applied only in bacteriologically negative cases without progressive lesions, biopsies were made of the mucosa and submucosa of 18 patients of the kind that would be selected for this intervention. In 17 of them no lesion was found to which such failures could be attributed; in only one were there found active specific changes with vacuolated Virchow cells. Experimenting with other substances, cartilage was well tolerated but presented the usual difficulties of absorption. The best results have been obtained with a synthetic resin, called "paladon" (*metil-metacrilica*), which is homogenous, of low specific gravity, odorless and tasteless, and with a minimum expansion coefficient which makes it practically insensitive to changes of temperature. It has been used in several cases with as yet satisfactory results; at least in the six months of experience it has been well tolerated in cases that had promptly reacted unfavorably to ivory. Photographs show different types of deformities and the results obtained in them. Special mention is made of certain ones that have comparatively thin pieces in the nasal wings, which result in a satisfactory shape and considerable improvement of respiration.

—[From abstract in *Rev. brasil. de leprol.* 10 (1942) 470.]

SILVEIRA, L. Enxerto libre na reparação das alopecias superciliares. [Free graft in the repair of superciliary alopecia.] *Arq. Cir. Clin. Exper.* (Sao Paulo) 6 (1942) 689.

With good photographic illustrations the author presents the results of his experiences with the use of free grafts in repairing superciliary alopecia, a common condition which so brands those affected that its surgical correction is of importance to paroled patients. The method used, which has given good result, is free grafting with hairy scalp removed from the occipital region. The graft is cut in approximately the form of the eyebrow and transplanted to a bed prepared by resecting a strip of skin of the size and shape of the piece to be transplanted. In cutting the graft it is necessary to bear in mind the direction of the hair to avoid the conspicuous effect of growth in the direction opposite to the normal. In dealing with a free graft it is necessary to remove all of its cellular tissue in order to permit penetration of the new-formed capillaries. This is a delicate intervention because of the danger of cutting the roots of the hair follicles, which may result in a thin eyebrow. Details are given of the technique of the operation, the method of immobilization, and other pertinent matters. —[From abstract in *Rev. brasil. de leprol.* 10 (1942) 469.]

SPANGERBERG, J. J. Inauguración del Sanatorio Colonia en General Rodríguez para enfermos de lepra. [Opening of the Sanatorio Colony at General Rodriguez for lepers.] *Bol. Sanit.* (Buenos Aires) 6 (1942) 59.

The new Sanatorio Colonia at General Rodriguez, located in Buenos Aires province (sometimes referred to as the Buenos Aires leprosarium),

was inaugurated on November 22, 1941. The area is 265 hectares [654 acres]; there are 53 buildings arranged in three distinct zones, one for the patients, one "clean," and one intermediate. The accommodations are for 600 patients and a staff of 150.

—[From abstract in *Rev. brasil. de leurol.* 11 (1943) 171.]

ALBARRACIN, L. Algunas consideraciones sobre la medicacion antileprosa por el aceite de hydnocarpus y sus esteres etilicos. [Some consideration on antileprosy treatment with hydnocarpus oil and its ethyl ester derivatives.] *Bol. Ins. Nac. Hig. Samper Martinez* (Bogota) 1943, No. 10, p. 9.

Chaulmoogra (Hydnocarpus) oil and its derivatives are regarded as the best medicaments for the treatment of leprosy, success depending on the perseverance of the patient, the skill of the physician, and the purity of the preparation used. The article is a good general account of the treatment, with brief descriptions of the oil and its extraction, the possibilities of adulteration, the preparation and purification of the esters, the dosage, and other considerations. It is a sort of review article, interestingly written, but presents no new facts.

—[From abstracts.]

BACARINI, I. Injeção de ester e de oleo de chaulmoogra: (a) por via intradérmica, (b) por via intra-arterial. [Injection of chaulmoogra esters intradermally and intravenously.] *Arq. Mineiros Leprol.* (Belo Horizonte) 3 (1943) 65.

The author, giving detailed descriptions of the technique of preparation of the drug and of the application of the injections, concludes from the results presented that chaulmoogra oil and its derivatives are the best medicaments so far available for the treatment of leprosy.

—[From abstract in *Rev. brasil. de leprol.* 11 (1943) 250.]

BORRELL NAVARRO, E. La lepra en la infancia. [Leprosy in childhood.] *Bol. de la Liga Antilep. Cuba* (Havana) 8 (1943) 13.

While reflecting the usual opinion that leprosy is not "hereditary" but that children are highly susceptible to infection, the author expresses the opinion [a surprising one in view of observations in several other countries during the past decade] that in children the disease is always of serious character.—From abstract in *Rev. brasil de leprol.* 12 (1944) 294.]

BORRELL NAVARRO, E. Agentes transmissores de la enfermedad de la lepra. [Transmitting agents of the disease of leprosy.] *Bol. de la Liga Antilep. Cuba* (Havana) 8 (1943) 24.

The author comments upon a newspaper report on the transmission of leprosy by means of blood-sucking insects, holding that they cannot be considered transmitting agents of this disease. The finding of acid-fast bacilli in the stomach contents of fleas is not enough to establish the rest of the process, i. e., the incubation of the infecting virus and its evolutive cycle.

—[From abstract in *Rev. brasil. de leprol.* 12 (1944) 295.]

BRAGA, E. and ROCHA, C. Epidemiologia de lepra no estado de Pernambuco. [Epidemiology of leprosy in the State of Pernambuco.] *Rev. Comb. Lep.* (Rio de Janeiro) 2 (1943) 5.

Reporting the results of a census carried out between 1938 and 1940, in which 1,100 cases have been found. The state, with a population of 2,690,000 inhabitants, may be divided into three zones with widely varying

indices of incidence, the highest being in the region of Recife, the capital. The proportion of contagious cases is 59 per cent, regarded as of "medium severity." —[From abstract in *Rev. brasil. de leprol.* 12 (1944) 84.]

CONVIT, J. La vitamina "E"; las atrofas musculares de la mano por neuritis leprosa y el tratamiento de estas lesiones por el a tocoferol. [Vitamin E; muscular atrophies of the hand due to leprosy neuritis and the treatment of these lesions with tocopherol.] *Rev. San. y Asist. Social* (Caracas) 8 (1943) 641.

Discussing vitamin E, and leprosy neuritis and its consequences with respect to muscular atrophies of the hand, the author describes the method of treatment used, which gave promising results.

—[From abstract in *Rev. brasil. de leprol.* 12 (1944) 81.]

CONVIT, J. and CHAVEZ, L. Lesiones leprosas del cuero cabelludo. [Lesions of the scalp.] *Rev. San. y Asist. Social* (Caracas) 8 (1943) 649-653.

In the abstract available it is stated that the authors had observed 28 cases in the Cabo Blanco leprosarium and at the dispensary in Caracas, following which are reproduced two tables that show 5 cases to have been seen in 828 patients examined (0.6 per cent); 4 were found among 680 lepromatous cases (0.58 per cent), and 1 among 148 neural cases (0.67 per cent); all were in males.

—[From abstract in *Rev. brasil. de leprol.* 12 (1944) 82.]

EICHBAUM, F. W. Reactivity of leprosy sera with lecithin. Incidence of lecithin reaction in Wassermann positive and negative sera of leprosy and control cases. *Rev. brasil. de biol.* 3 (1943) 225-230.

Do. Properties of anti-lecithin in leprosy sera. *Ibid.* 231-236.

(1) Complement fixation and flocculation tests with egg lecithin applied to 229 sera of leprosy patients gave 141 positives (61 per cent), more frequently in lepromatous and mixed cases (72 per cent) than in the maculo-anesthetic (37 per cent). Concordance with the Wassermann reaction occurred in 80 per cent and with the WKK reaction in 72 per cent. Sera that were negative with lecithin but positive with the WKK antigen were generally strongly so with the latter. Of 335 control sera, including 151 that were Wassermann-positive and many from patients with tuberculosis and other affections, only 4 per cent were positive to the lecithin reaction; of the Wassermann-positive sera 8 per cent were positive.

(2) The reactivity of leprosy sera to lecithin is ascribed to a specific antibody and not a vague lability of the serum. The reactivity is destroyed by denaturing the globulins with heat at 65-70°C. for 15 minutes. The flocculation is stronger at 1°C. than at 37°C., contrary to the findings with syphilitic sera. The antibody can be eluted from the precipitate by treatment with 10% NaCl at 56°C. for ½ hour. The formation of this antibody may be related to the action of haptogenic phosphatids liberated from the diseased tissues, or to an antigenic structure common to the lipoids present in eggs, mammalian tissues, the leprosy bacillus, other bacteria, fungi, etc. This ubiquity of lipid substances would seem to explain the well known "polyfixation" of leprosy sera.

—[From abstract in *Rev. brasil. de leprol.* 13 (1945) 57.]

FIOL, H. Tratamiento de la lepra en el Sanatorio Colonia "Buenos Aires." [Treatment at the Buenos Aires leprosarium.] *Bol. Sanit.* (Buenos Aires) 7 (1943) 201.

The basis of treatment in this institution is chaulmoogra oil and its derivatives, though many other adjuvant drugs and measures are employed, these including carbon-dioxide snow, galvanocautery, trichloroacetic acid applications, and surgical extirpations and repairs. The results obtained in 369 patients dealt with between 1941 and 1943 are: paroled 5 (1.3 per cent), improved 205 (55 per cent), stationary 93 (25 per cent), worse 29 (8 per cent) and dead 37 (10 per cent).

—[From abstract in *Rev. brasil. de leprol.* **12** (1944) 304.]

LINHARES, H. Contribuição ao estudo da patologia da lepra murina. [Pathology of murine leprosy.] *Mem. Inst. Oswaldo Cruz* **37** (1943) 543.

Following the usual review of the literature, the author describes the findings in 41 spontaneously infected rats (apparently caught wild in Rio de Janeiro) as follows: 39 per cent had alopecia, especially dorsal; 78 per cent had subcutaneous infiltrations, not a few with nodules of some size and with ulcerations; a few showed involvement of the spleen, liver, or lungs. In these and experimentally infected rats histological examination showed lesions in these organs, the lymph nodes, bone marrow and kidney; the testes were rarely affected. It is concluded that the disease is primarily one of the reticulo-endothelial system.

—[From abstract in *Rev. brasil. de leprol.* **11** (1943) 101.]

PESCE, H. and SERRA, O. Contribuição a tecnica da eletroforese de pilocarpina. [Contribution to the technique of electrophoresis of pilocarpine.] *Bel. Ser. Nac. Lepra* (Rio de Janeiro) **2** (1943) 7.

This article has to do with the sweat test provoked by pilocarpine for demonstrating the anhidrosis of leprosy. It is concluded that electrophoresis of pilocarpine by the method of Jeanselme and Girandau is useful, practical, and efficient. For popularization it is necessary that the technique be established precisely with respect to the various factors involved; and that described is offered, pending possible improvements, as suitable for the purpose.

—[From abstract in *Rev. brasil. de leprol.* **12** (1944) 299.]

VAUTRAI, R. F. La lepra em Tovar (Estado Aragua). [Leprosy in Tovar, Aragua State.] *Rev. San. y Asist. Social* (Caracas) **8** (1943) 681.

From the data available the nature of this community is uncertain, but it is spoken of as a "colony" founded about 100 years ago—about 40 years before the first death from leprosy was registered from there, in the decade 1880-1890. The area is described as about 35 sq. km., divided into seven zones; the population at the last census was 821, living in 136 dwellings; their cultural status is low, few are literate, they are promiscuous, their sanitation is deplorable—they never bathe, it is said—and they live under crowded conditions though the buildings are well-constructed. That the community is not an ordinary rural one is indicated by the fact that there is a resident physician with a pharmacy, dispensary and laboratory, and infant mortality is low. The origin of leprosy in this focus is not well determined, but it is regarded as highly probable that the colonists were infected in Venezuela [whatever that may signify]. The present leprosy index is high and the disease of high activity and contagiousity, ascribed to a racial factor, promiscuity and intimacy between the infected and others, and debilitating conditions such as verminoses, rickets, avitaminosis, deficient alimentation, unhygienic habits, the climate, "etc."

The number of definite cases is 32 (i. e., 39 per 1,000), with 9 others suspected. Lepromatous cases are said to predominate (but apparently there were only 14 of them against 13 tuberculoid). The distribution in the different zones of the colony is irregular. More males are affected than females, but there is a greater predominance of lepromatous cases among the latter; more cases among adults than among children, with no lepromatous one in any person under the age of 15 years, though the disease exists in the 0-4 years group; a higher incidence among married than among single people, and a household tendency. Consideration is given the problems of contact and control.

—[From abstract in *Rev. brasil. de leprol.* **12** (1944) 83.]

CUERVO, J. M. V., SUAREZ, J. E. A., de CASTRO PALOMINO, J., TRIANA, J. G., and JORDAN, O. R. Sobre las alteraciones oseas en la lepra. [Bone changes in leprosy.] *Rev. Leprol. Dermat. y Sifil. Marianao (Cuba)* **1** (1944) 148.

Following the statement that the number of observations made is too small to permit definite conclusions, it is said [apparently influenced by the findings of Faget and Mayoral] that the majority of the bone lesions in leprosy are of neurotrophic type and not specific, and that the bone lesions of the lepromatous variety are due to the direct action of the leprosy bacillus on the osseous tissue. In a case of tuberculoid leprosy there were found osteoporotic lesions in the ulnar, radius, bones of the wrist and right hand, a condition which should be studied to differentiate it from Boeck's sarcoid.

—[From abstract in *Rev brasil. de leprol.* **12** (1944) 401.]

FARINAS GUEVARA, P., GARCIA MIRANDA, and FERNANDEZ BOQUERO. Consideraciones sobre 213 casos de lepra y sus conviventes. [Study of 213 cases and their contacts.] *Rev. Leprol. Dermat. y Sifil. Marianao (Cuba)* **1** (1944) 18.

In the "central dispensary of PLECS" (location not stated in the abstract) 213 cases of leprosy have been dealt with in the four-year period 1940 to 1943; and 514 contacts have been examined, of whom 45 were found affected. The type distribution is: lepromatous 121, "inspecific" 44, and tuberculoid 48. In these three groups positive serological reactions for syphilis were obtained in 53 per cent, 11 per cent, and 4 per cent, respectively.

—[From abstract in *Rev. brasil. de leprol.* **12** (1944) 305.]

FERNANDEZ, J. M. M. and SERIAL, A. Lepromino-reaccion. (Conveniencia de emplear un antígeno estandarizado.) [Lepromin reaction; the convenience of using a standardized antigen.] *Rev. argent. de dermatosif.* **28** (1944) 325.

Three different types of lepromins are recognized, the original, leproma-tissue "integral" one, the "bacillary" one, a suspension of bacilli separated from the leproma tissue, and the soluble proteins of the bacilli. Pointing out the advantages of a standardized antigen, the authors recall various efforts that have been made to that end, with special reference to work of Fernandez and Olmos in Argentina and of Dharmendra in India, who obtained purified bacillary powders. For practical use Dharmendra's method of preparation is recommended, for it is not complicated and the product contains bacilli in quantity similar to that of the integral lepromin; in use it provokes both the early and late reactions. The authors usually



use it in 1:2,000 concentration. An appendix gives the technical details of the preparation of the antigens.

—[From abstract in *Rev. brasil. de leprol.* **12** (1944) 407.]

GARCIA DE AZEVEDO, J. Pterigio na lepra ocular. [Pterygium in ocular leprosy.] *Arq. Mineiros Leprol.* (Belo Horizonte) **4** (1944) 85.

Of the patients at the Santa Fé leprosarium, 9.1 per cent have pterygium, whereas two reports from a large general ophthalmological institution give the frequency as 4.1 and 4.8 per cent. It would appear that in ocular leprosy there are factors which favor the development of this condition.

—[From abstract in *Rev. brasil. de leprol.* **12** (1944) 298.]

HERMONT, H. Relatório dos trabalhos do censo de leprosos do município de Mato-Grosso (Estado de Mato-Grosso). [Report on a leprosy survey in the municipality of Mato Grosso.] *Bol. Serv. Nac. Lep.* (Rio de Janeiro) **3** (1944) 72.

[Of the many reports of leprosy surveys in particular localities in Brazil, this one is of interest because the area concerned is especially isolated and difficult of access, and seldom mentioned.] In carrying out an order to examine the situation in the municipality of Mato Grosso, which has an area of 82,548 sq. km. and a population of 3,315, the author travelled 900 kilometers—90 on horseback, 24 by launch, 8 by *batelão*, and 23 on foot. He recorded 13 positive cases and 76 contacts.

—[From abstract in *Rev. brasil. de leprol.* **13** (1945) 124.]

IBARRA, R. Censo de lepra. [Leprosy census.] *Trans. la. Conf. Cubana de Leprol.*, Santa Clara, 1944.

At the First Cuban Leprosy Conference, held in Santa Clara in 1944, the author presented information that he had collected on the number of cases in the country. It being impossible to examine the entire population (given as 4,778,628), he had solicited the cooperation of the medical profession and had obtained records of 2,010 cases. Of these 1,348 were whites, 278 Negroes, 315 mestizos, 24 "yellow," and 45 not stated; Cubans 1,562, foreigners 152, not specified 296; males 1,205, females 751, not stated 54. It appears that leprosy is especially frequent in the region of Santiago de Cuba.

—[From abstract in *Rev. brasil. de leprol.* **12** (1944) 402.]

IBARRA PEREZ, R. and GONZALEZ PRENDES, M. Incidencia de la lepra segun la edad. [Incidence of leprosy according to age.] *Rev. Leprol. Dermat. y Sifil.* (Marianao, Cuba) **1** (1944) 5.

A study of the age at the time of onset in 611 cases in the San Lazaro Hospital (Rincón, Havana) leads to agreement with the general view that, while the disease may appear at any time of life, it is most common in

puberty and adolescence. The data, shown to conform in a general way with those from various other countries, are as follows:

Age	Cases	%	Age	Cases	%
1-5	11	1.8	41-45	27	4.4
6-10	52	8.5	46-50	30	4.9
11-15	100	16.4	51-55	19	3.2
16-20	110	18.2	56-60	12	2.0
21-25	86	14.1	61-65	6	1.0
26-30	63	10.3	66-70	2	0.3
31-35	47	7.7	Over 70	2	0.3
36-40	44	7.3			

—[From abstract in *Rev. brasil. de leprol.* **12** (1944) 295.]

MARIANO, J. Uma nova medicaçao empregada com proveito no tratamento dos surtos de nevrite leprosa. [A new drug used with profit in the treatment of leprous neuritis.] *Arq. Mineiros Leprol.* (Belo Horizonte) **4** (1944) 81.

Though neuritis is one of the most alarming intercurrent conditions of leprosy, a satisfactory method of treating it has not yet been arrived at. The author has employed "Neurital," a medication based on hydrocoumaric acids. In 24 cases in which it was used by the intramuscular, intravenous, and intradermal routes it gave very promising results. Its action varies with the individual and the kind and intensity of the pain, without provoking any local or general reaction.

—[From abstract in *Rev. brasil. de leprol.* **12** (1944) 297.]

MOM, A. M. Leprominoreaccion. Estudio comparativo de diferentes antigenos derivados de lepromas y criterio para su lectura.) [The lepromin reaction; a comparative study of the different antigens derived from lepromas and criteria for reading the reactions.] *Rev. argent. de dermatosis.* **28** (1944) 334.

The bacillus-suspension type of lepromin should be used, for theoretical and practical reasons, and for its preparation preference is given the technique of Dharmendra. At the same time, work should be continued with antigens of the bacillary proteins and nucleoproteins, in the hope of hitting upon the specific antigenic fraction. Features of the technique of the lepromin reaction, including the reading of it, are discussed.

—[From abstract in *Rev. brasil. de leprol.* **12** (1944) 408.]

NEGRONI, P. and MOM, A. M. Estudio de ciertas propiedades antigenicas de los extratos de piel normal, tuberculoide y lepromatosa. [A study of certain antigenic properties of extracts from normal, tuberculoid, and lepromatous skin.] *Rev. argent. de dermatosis.* **28** (1944) 265.

A detailed report of experiments on the spreading of trypan blue in the skin of rabbits as influenced by the "antigenic properties" of three types of skin extracts, normal (N), tuberculoid (T) and lepromatous (L), and correlative observations. Diffusion of the dye is reduced from 34.32 per cent to 55.80 per cent by the N skin, and from 18.43 per cent to 49.13 per cent by the T skin; the L extract caused no modification of diffusion. Flocculation reactions with the extracts and the sera of rabbits treated with them were negative. Complement fixation reactions were more strongly positive and more frequent with the sera of rabbits treated with the T extract than were those of rabbits treated with the L extract. The

sera of rabbits treated with the N extract did not fix complement with any of the extracts. The sera of tuberculoid leprosy patients fix complement strongly with the T extract, less frequently with the L extract. The sera of lepromatous patients are only exceptionally reactive. It is concluded that in the skin of lepers there exist two antigenic factors, a normal one (N) which is responsible for diffusion, and one which is peculiar to the leprosy lesion and which gives rise to complement-fixing antibodies, demonstrated most frequently and with greatest intensity by use of extracts of lesions of tuberculoid leprosy.

—[From abstract in *Rev. brasil. de leprol.* **12** (1944) 404.]

RODRIGUES VIEIRA, L. Reparos sobre a histologia da lepra. [Remarks on the histology of leprosy.] *Arq. Mineiros Leprol.* (Belo Horizonte) **4** (1944) 91.

Analysing the actual situation with respect to studies of the histopathology of leprosy, the author refers to the following points concerning which—he holds—opinions are not yet “well adjusted”: (a) the American classification in the light of histopathology; (b) the true position of the epithelial cell; (c) the Virchow cell; (d) the concept of the sarcoid form (subtype); (e) the pathogenesis of alopecia. The author stresses the necessity of further studies [without, so far as indicated in the abstract, offering any contribution of his own] to clarify the relationships between the tuberculoid and lepromatous forms of leprosy; on the differential diagnosis between tuberculoid leprosy and other morbid entities; on the basic features of the leprotic inflammation, with special reference to its microchemistry; and on the problems of the immunity phenomena of this disease.

—[From abstract in *Rev. brasil. de leprol.* **12** (1944) 298.]

GONZALEZ URENA, J. Alopecia leprosa en México. [Leprous alopecia in Mexico.] *Rev. Leprol. Dermat. y Sifil.* (Marianao, Cuba) **2** (1945) 73.

Because alopecia is seldom mentioned as a feature of leprosy and is generally considered to be rare, the author reports his observations on 18 cases (16 males and 2 females) found among the 380 patients (i. e., 4.7 per cent) in the Asylum “Dr. Pedro Lopez.” All presented advanced, diffuse infiltrative leprosy, but at the sites of alopecia the skin seemed normal, without macules, nodules, ulcers, or even dilated veins. By histological and other examinations the condition was differentiated from seborrheic alopecia; the finding of leprosy bacilli and of sensory disturbance established the condition as leprotic. The Mitsuda reaction was negative in 16 cases and positive in 1; one not known. The condition had appeared in from 6 months to 11 years after the onset of the disease.

—[From abstract in *Rev. brasil. de leprol.* **13** (1945) 225.]

PEREZ, R. I. and PRENDES, M. A. G. Sintomas iniciales de la lepra. [Initial symptoms of leprosy.] *Rev. Leprol. Dermat. y Sifil.* (Marianao, Cuba) **2** (1945) 108.

The authors refer to the long period of incubation which as a rule precedes the first manifestations of leprosy, and report observations in 760 cases with regard to the most frequent symptoms recorded at the beginning of the disease, the usual routes of penetration responsible for the disease, and the average time of the incubation. The most frequent lesions among new patients of leprosy are erythematous, achromic and

"obscure" macules, and areas of anesthesia. The most frequent route of penetration seems to be the skin at points of solution of continuity, however insignificant these may seem. The long period of incubation and the very indefinite onset of the disease makes it impossible in very many cases to determine the initial lesion with accuracy. All contacts and persons with suspicious symptoms should be followed up systematically, with laboratory and clinical examinations.

—[From abstract in *Rev. brasil. de leprol.* 13 (1945) 226.]

PRENDES, M. A. G. Enfermos de lepra asilados en "San Luis de Jagua." [Leprosy patients segregated in the "San Luis de Jagua" sanatorium.] *Rev. Leprol. Dermat. y Sifil.* (Marianao, Cuba) 2 (1945) 121.

A report the principal interest of which—so far as can be told from the abstract—is that 123 patients, all of them lepromatous, have been admitted to the new national leprosarium, "San Luis de Jagua," since September 1944. These are studied in detail.

—[From abstract in *Rev. brasil. de leprol.* 13 (1946) 226.]

SAMPAIO, J. M. Alguns aspectos histológicos da infecção leprosa. [Some histological aspects of leprosy infection.] *Arq. Inst. Biol. do Exército* (Rio de Janeiro) 6 (1945) 75.

After speaking of the difficulties of diagnosis of frustrate forms, which are of importance to the army, the author points out that the presence of acid-fast bacilli is not an absolute guaranty that one is dealing with a case of leprosy. Histological examination, it is held, suffices for a basis of diagnosis, classification of cases, and especially identification of the tuberculoid forms. It is evident that the reticulo-endothelial system participates in the constitution of the granuloma. The Virchow cells are of this nature. Timofejewsky demonstrated with tissue cultures that the macrophages often phagocytize the bacilli; and he gained the impression that they are not harmed since, despite the presence of bacilli in them, they continued to divide. As a rule the lepromatous and tuberculoid forms are perfectly distinct histologically. However, there are cases of inspecific infiltrations, in which it is impossible to say what form will ensue. The tuberculoid form should be recognized as an autonomous one, a view justified by the clinical features, the immunobiological reactions and the structure of the lesions.

—[From abstract in *Rev. brasil. de leprol.* 13 (1945) 221.]

VERSIANI CALDEIRA, O. and CERQUEIRA, E. A. Sôro coagulação de Weltmann na lepra. [The Weltmann serum coagulation test in leprosy.] *Arq. Mineiros Leprol.* (Belo Horizonte) 5 (1945) 61.

From a study of this reaction (at the Faculty of Medicine of the University of Minas Gerais) it was concluded that leprosy determines changes of the serum with a predominant incidence of shift of the coagulation curve to the right. This change, on the whole, is less marked in tuberculoid than in lepromatous cases, but the reaction does not serve to diagnose the clinical forms of the disease.

—[From abstract in *Rev. brasil. de leprol.* 13 (1945) 222.]