

CURRENT LITERATURE

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

SUSSINI, M. La sanidad en Argentina. [Health in Argentina.] Bol. Of. Sanit. Panamericana 18 (1939) 511.

During the year 1937, 118 new cases of leprosy were enumerated in Argentina and 62 deaths recorded, the total number of cases at the end of the year being 3,286. Those living in the federal capital are periodically examined. Chaulmoogra oil derivatives for treatment are prepared at the Institute of Bacteriology and Chemistry. The hospital-colony at Posadas, in Misiones, and the one on the island of Cerrito, have been completed; that at San Francisco del Chañar, in Cordoba, is far advanced; that at General Rodrigues, in Buenos Aires, is under construction. Plans have been prepared for others at Diamante, in Entre Ríos, and at the Barrancas, in Santa Fe.

—H. W. W.

PIÑERO GARCIA, P. P. Endemiografía de la lepra en Rosario. [Epidemiology of leprosy in Rosario (Argentina).] Prensa Méd. Argentina 25 (1938) 2233-2247.

This article, mainly of local interest, to a great extent deals with the history of the disease and its spread during the past decade. Details of a census of lepers made in 1928-29 are given, stating the nationality, age, sex, place of residence and type of disease. The mortality during the decade is presented in a series of graphs.—[From abstract in *Trop. Dis. Bull.* 36 (1939) 532.]

GODOY, E. La lepra en las provincias de Cuyo. [Leprosy in the province of Cuyo.] Cátedra y Clínica (1938) 549.

It is reported that there are 12 cases in the region (Cuyo, Argentina), of which three-fourths are autochthonous. It is impossible to intern them for lack of accommodations.—[From abstract in *Rev. Argentina Dermatosisif.* 23 (1939) 351.]

MORALES MUÑOS, T., BERNAL LONDOÑO, M. AND DE SOUZA-ARAÚJO, H. C. La lepra en Colombia. [Leprosy in Colombia.] Rev. Colombiana Leprol. 1 (1939) 6-35.

This report is of an examination of 959 persons, as follows: isolated lepers, 466; healthy house contacts, 110; and healthy noncontacts, 383. The race, age, place of origin, family history, type of leprosy, duration of the disease and treatment were studied. In addition, the foci of infection of the districts of the Atlantic littoral from which the cases came are classified. Among the patients there were found 9 in whom the disease had existed for from 40 to 54 years.

—M. BERNAL LONDOÑO

BERNAL LONDOÑO, M. AND MALDONADO, D. Analisis bioestadístico de las actas de examen médico de admisión de los enfermos de lepra aislados en Agua de Dios. [Biostatistical analysis of admission records of cases isolated in Agua de Dios leprosarium.] *Rev. Colombiana Leprol.* 1 (1939) 110-139.

This is an extended study of the histories of 4,748 cases with regard to the race, sex, civil status, occupation, family history, type of first symptoms, and many other data. The findings regarding the age curve are important inasmuch as they demonstrate that the peak has been displaced to the right in comparison with the status of the endemicity in 1905, which seems to indicate the beginning of extinction of the disease. The authors reproduce graphically the age curves in Ranikhatanga, where leprosy has been recently introduced, and in Norway where it has become extinct.

—AUTHORS' ABSTRACT

TIVOLLIER, M. La lèpre aux îles Loyalty; le village Hansénien de Chila à Lifou. [Leprosy in the Loyalty Islands; the Chila leper village on Lifou.] *Marseille-méd.* 1 (1938) 159-169.

This archipelago, consisting of three principal islands, Maré, Lifou, and Ouvéa, is situated about 60 miles to the east of New Caledonia. These islands are coralline plateau emerging from a long submarine chain and are peopled by 11,000 natives of the Melanesian race, with some Polynesian elements. The region is of interest to the dermatologist, for besides leprosy in its various forms there are found cases of yaws in children and quite frequent manifestations of syphilis in adults. Leprosy was introduced quite recently, since the contact with Europeans, the earliest cases being observed some 50 years ago; it affected as many as 4.8% of the population. The author discusses the measures that have been applied [reported in detail by Kervingant and Baré in *THE JOURNAL* 7 (1939) 175-200] and particularly the history of the leprosy village of Chila, which was organized in 1927 and in which there are more than 180 cases.—[From abstract in *Ann. Dermat. et Syphil.* 9 (1938) 835.]

FRANTZ, W. Leprosy. [Leprosy.] *Dermat. Ztschr.* 75 (1937) 282-295.

A survey of papers on leprosy published in 1936 and 1937, with a brief review of their contents.

—KLINGMÜLLER

DOULL, J. A. The importance of field studies of leprosy, with especial reference to the risk of household exposure. *American Jour. Hyg.* Section A 29 (1939) 27-33.

This article is a modification of a paper read at Cairo. The value of the wider application of the principles of the life table to the epidemiology of leprosy, and particularly to the measurement of attack rates for those subjected to various degrees of exposure, is emphasized. —M. H. SOULE

LAMPE, P. H. J. Typendifferentiatie van lepralijders, in endemiologische zin. [Types of leprosy, considered epidemiologically.] *Geneesk. Tijdschr. Nederlandsch-Indië* 78 (1938) 890-904.

The chances of infection within and without the family group are discussed. The "solitary leper," the first case in a family, is an example of infection from without the family. In two village areas investigated such infections constituted about 80% of the cases, and an inquiry at the lep-

rosy institute in Batavia gave a figure of 66%. Only rarely were as many as three cases found in one family, which fact may be related to the potency of the source of infection.—[From abstracts.]

HASHIMOTO, T., KOMATSU, H. AND NITTO, S. Fall von familiärer Lepra. [Case of familial leprosy.] Japanese Jour. Dermat. & Urol. 41 (1937) 51 (abstract).

Report of an instance in which a child of 12 years had bacteriologically positive nodular leprosy and the father had had definite leprosy for several years, with neuralgia of the extremities and infiltration of the face with slight hyposthesia. Smears were negative, but the authors believe that the father was the source of infection.—[From abstract.]

OBERDOERFFER, M. Moderne Leprabekämpfung in Ceylon. [Modern anti-leprosy campaign in Ceylon.] Arch. Schiffs- u. Trop.-Hyg. 42 (1938) 550-552.

This brief paper illustrates by a map the incidence of leprosy in Ceylon. It brings out the high incidence in the southwestern part of the island and a smaller area on the east coast. The highest rates of from 5 to over 10 per 10,000 population were met with around the towns of Colombo and Galle and of the east coast.—[Abstract from *Trop. Dis. Bull.* 36 (1939) 532.]

KLINGMÜLLER, V. Einiges über Aetiologie, Pathologie, und Therapie der Lepra. [Some remarks on the etiology, pathology and therapy of leprosy.] Dermat. Wchnschr. 106 (1938) 584.

This article is a short summary of the subjects mentioned. With respect to transmission, stinging and blood-sucking insects may possibly transmit the disease under certain circumstances, though probably not with their sucking apparatus. Scratching of the itching wheals produced by the irritating secretion of their salivary glands may result in the inoculation of the exciting germs into the skin. These germs can adhere to an insect which previously has dwelt on or sucked from an "open" leprosy person. In the case of flies they may be carried on the feet, or with others, for instance lice, they may be deposited in the feces.

—AUTHORS' ABSTRACT

SOUZA ARAUJO, H. C., BERNAL LONDOÑO, M. AND MEDINA, M. Encuesta epidemiológica sobre los niños considerados sanos en el leprosorio de Agua de Dios. [Epidemiological investigation of children considered healthy in the Agua de Dios leprosarium.] Rev. Colombiana Leprol. 1 (1939) 78-93.

This is a study of 852 children less than 15 years of age, classified by places of origin, race, age and family history. Among them were 170 isolated in the Nazaret and Santa Elena asylums, the others living with the patients in the leprosarium. The results of the examination show that 2.9% of the total were incipient cases, 10.4% suspicious, the rest, or 86.7%, being healthy.

—M. BERNAL LONDOÑO

PARRA, R. F. Lepra y niños. [Leprosy and childhood.] Rev. Colombiana Leprol. 1 (1939) 66-77.

This is a report of the study of children born or living in the de Agua de Dios leprosarium who have become lepers, concerning whom are noted the age at which the first symptoms appeared, the form of the disease and

the family histories. The author calls attention to the great susceptibility of children to infection and the necessity of separating them from their leprous families.

—M. BERNAL LONDOÑO

MIRANDA, R. N. A prova da hemossedimentação no prognóstico da lepra. [The red-cell sedimentation test in prognosis.] *Rev. Med. Paraná* 7 (1938) 133-138.

The red-cell sedimentation test is a nonspecific reaction which shows empirically the intensity of the humoral modifications in disease. The author considers it to be of value in prognosis in leprosy, but counsels caution in the interpretation of the results because these vary under other influences, such as oligemia and intercurrent infections. More thought should be given to the study of the effects of the meteorological phenomena. The sedimentation rate increases experimentally in proportion to increase of temperature, affecting not only individual cases in different seasons but also peoples living in different climates. For this reason the author makes the test in a uniform temperature of 37°C. However, the test cannot replace clinical sense in the prognostic evaluation of cases.—[From abstract in *Rev. Brasileira Leprol.* 6 (1938) 382.]

AOYAMA, N. Leprose Veränderungen der Mamma. [Leprous changes in the mammary gland.] *Trans. 10th Meet. Japanese Lep. Assoc., La Lepro* 9 (1938) suppl. 49 (abstract).

In a histological study of the mammary glands in 9 autopsy cases there were found slight to marked increase of interstitial, connective tissue, infiltration by small round and vacuolated lepra cells, disappearance of a part of the nuclei and other regressive changes, and in 4 cases definite leprous infiltrations in which, however, the interstitial cells contained few or no bacilli.—[From abstract.]

TACHIKAWA, N. Ueber lepröse Nagelbettzundung (Histopathologische Untersuchung). [Leprous inflammation of the nail bed.] *Trans. 10th Meet. Japanese Lep. Assoc., La Lepro* 9 (1938) suppl. 34 (abstract).

In slight and moderately severe cases of nodular leprosy only very slight changes were found in the nail bed, whereas in severe cases there was definite leprous affection in the skin of the region. The nail substance was extraordinarily softened and somewhat broken. Histologically there was lepromatous infiltration in the nail bed, the nail wall, and the epidermis or cutis of the fingertips and the deeper parts of the finger. High grade leprous changes were also found in the veins, arteries, nerves and sweat glands of the terminal phalanges. Only in 5 cases could bacilli be found in the nail substance itself; in all of these cases the pathology was marked. In 3 moderately severe cases of neural leprosy there were atrophy and curving of the nails (onychogryposis), and the nail substance was nevertheless tolerably softened in appearance. In macular leprosy no changes of the nails were observed.—[From abstract.]

GOMEZ PLATA, C. Sedimentacion globular en la lepra. [Erythrocyte sedimentation in leprosy.] *Rev. Colombiana Leprol.* 1 (1939) 94-109.

The author, after noting the importance of frequent use of this test in all cases submitted for antileprosy treatment, and the necessity in a dispensary of following the observations carefully, undertakes a complete study

of the composition of the blood, the phenomenon of coagulation, and the particular technique employed in the erythrocyte sedimentation test, after which he discusses the theories of the sedimentation phenomenon. He concludes that sedimentation is always accelerated in leprosy, its velocity being in direct proportion to the degree, state and form of the disease, and inversely to the organic defenses of the individual and tolerance for treatment; that the rate is highest in the lepromatous form, less marked or not abnormal in the neural form; and that the test is a medium of control in treatment. When sedimentation increases it is necessary to suspend treatment, to change the drugs and therapeutic method, to permit the patient to rest and in general to investigate the cause of the change.

—M. BERNAL LONDOÑO

PLANTILLA, F. C. Leprosy manifestations. II. Differential diagnosis. *Month. Bull. Bur. Health (Manila)* 18 (1938) 77-81.

The author mentions some of the more common skin diseases that present the whitish and reddish patches that may be mistaken for leprosy. In connection with the former, the following skin conditions are mentioned: pityriasis, tinea flava, leucoderma, psoriasis, depigmented tertiary lesions of yaws, consecutive depigmentations and whitish birthmarks. In connection with the reddish patch the following should be considered: ringworm, seborrheic and other dermatites, syphilis, lupus erythematosus, tertiary yaws and erysipelas.

—J. O. NOLASCO

DEGOTTE, J. Diagnostic précoce de la lèpre. Valeur comparée des diverses recherches bactériologiques et cliniques. [Early diagnosis; comparative value of the different clinical and bacteriological examinations.] *Ann. Soc. belge Med. trop.* 18 (1938) 533-537.

The author shows in tabular form the results of clinical and microscopic examinations made on 193 cases with more or less suspicious lesions encountered in the field during a survey in the Belgian Congo. They were classified as Ns1 or 2, or Nt1 or 2, with a few Na. The bacteriological examinations were of smears of material obtained by scarification of macules, the earlobe and the chin. The clinical examination included examination for enlarged nerves and tests for sensation and for sweating, disturbance of which was found more frequently than any other condition, wherefor it is a sign to be considered in such cases. Sweating is much more abundant after pilocarpine injection (0.2 cc. of 1% solution) than after moderate muscular exercise. No confirmatory evidence was obtained in nearly 10% of the patients considered definitely leprosy, and in nearly 25% of the "suspicious" cases. However, absence of such evidence does not prove that a case is not leprosy. The work as done is time-consuming; in practice in survey work the simple external examination will usually permit making a diagnosis.

—H. W. W.

CAMARGO JR., A. T. AND BECHELLI, L. M. Natureza e séde das lesões iniciais da lepra. [Nature and sites of the initial lesions.] *Rev. Brasileira Leprol.* 6 (1938) Spec. No., pp. 35-48.

This matter has been studied in 1,087 cases at the Cocais asylum-colony. First in frequency were disturbances of neural origin (58% of the cases): anesthesia, commonly on the limbs (39%); prodromal patches, formication, hot and cold sensation, chiefly on the extremities (13%); pain

in the nerves or the articulations (6%). Second were cutaneous lesions (27% of the cases), chiefly macules—erythematous (12%), achromic (10%), and pigmented (0.6%); lepromas (4%) were mostly dermal, in a very few cases hypodermal. Lepra reaction was said to be the first symptom in 22 cases (2%). Third were nasal lesions (6%). Finally, trophic lesions (6%); bullae, edema, "madarosis superciliarum," amyotrophy and analgesic panaris, in descending order.—[From author's summary.]

DE SOUZA-CAMPOS, N. Aspectos de localização da lepra tuberculoide. [Localization of tuberculoid leprosy lesions.] *Rev. Brasileira Leprol.* 6 (1938) Spec. No., pp. 71-81.

Tuberculoid leprosy, whether in its usual forms or in the reaction ones, has peculiarities of localization which the author believes are in themselves diagnostic of the condition—excluding lesions that are evidently lepromatous. Macular lesions of the scalp, eyelids, ears, lips, genitalia, palms and soles are always tuberculoid. [Illustrated with numerous excellent photographs.] —[From author's summary.]

DE SOUZA-CAMPOS, N. Evolução rara de dois casos de lepra na infância. (Reacção leprotica tuberculoide suppurativa.) [Unusual course of two cases of leprosy in children; suppurative tuberculoid lepra reaction.] *Rev. Uruguaya Dermat. y Sifil.* 3 (1938) 114.

Two children of patients with nodular leprosy presented suppurative tuberculoid lepra reactions. Their spontaneous cure affords an example of the benignity of certain forms of leprosy in childhood.—[From abstract in *Ann. Dermat. et Syphil.* 10 (1939) 254.]

MORAES, J., JR. Un cas intéressant de réaction tuberculoide. [An interesting case of tuberculoid reaction.] *Arch. Dermat. e Syph. São Paulo* 2 (1938) 26-31.

This is a report of a case of tuberculoid lepra reaction which occurred after a strong emotional experience. There was an eruption of the type of Boeck's sarcoid, with discrete arthralgias and slight elevation of temperature. Acid-fast bacilli were not found in sections. After 16 months of treatment with creosoted chaulmoogra ethyl esters all of the cutaneous lesions had disappeared. [The report is well illustrated.]—[From abstracts.]

COCHRANE, R. G., PAUL RAJ, M. AND ROY, E. Treatment of acute lepra reaction. *Lep. in India* 11 (1939) 74-81.

Lepra reaction is defined as a condition produced by the breaking down of leprotic foci, occurring only in lepromatous leprosy and to be distinguished from the allergic manifestations seen in tuberculoid leprosy, which are referred to as the "reactive states." True lepra reaction occurs in acute, subacute and chronic forms. Diagnosis is important and fever is not diagnostic, since various febrile conditions may be confused with lepra reaction. Three cardinal signs are: (a) fever of a characteristic type, (b) exacerbation of existing lesions or eruption of fresh lesions, and (c) rose spot nodules, or in fair persons evanescent erythematous rashes. The sedimentation test is unreliable in this connection. In treatment of acute reaction, the antimony products when properly used seldom fail to control the temperature; the recommended drugs are potassium antimony tartrate intravenously (0.02 gm. to 0.04 gm.) or foudin (2cc.) every other day.

Fouadin can be given intramuscularly and appears to be as effective as the tartrate. If these drugs do not control the fever, it is claimed, either the condition is not acute lepra reaction or it is complicated by something else.

—AUTHORS' ABSTRACT

HAYASHI, Y. Ueber den sogenannten leprosen Gelenkschmerz. [So-called leprous joint pain.] Trans. 10th Meet., Japanese Lep. Assoc. *La Lepro* 9 (1938) suppl. 30 (abstract).

The joint pains that are frequently complained of, especially in the nodular form of leprosy, often appear simultaneously with, or prodromal to, eruptions of erythema nodosum leprosum [lepra reaction], and are quite different from the disturbances due to tuberculous, rheumatic or suppurative arthritis. The author holds that the so-called joint pain in leprosy does not depend upon changes of the articular cavity itself and does not affect the whole joint. In the knee the trouble is located principally anteriorly on the patella, in the ankle at the malleolus med. and lat.; in the elbow at the olecranal part; and in the wrist joint it is confined to the proc. styloideus radii and ulnae. In these parts a localized slight reddening and swelling is visible at times, while the articulation as a whole is not swollen. That the articular cavity is free from changes is shown by the roentgenologic examination, as also by section. The explanation of this condition lies in the fact that the leprous infiltration begins only in the periosteum of the affected part and then spreads to the surfaces of the bones; at autopsy in nodular cases the author has frequently found leprous infiltrations in these locations. In such places there occurs an acute inflammation similar to the erythema nodosum leprosum, this condition producing marked sensation. In the presentation he demonstrated the patella and the tibia of a patient who had suffered marked pains in the patella and in the malleolus lat. of the ankle joint and the anterior surface of the tibia. Distinct leprous infiltrations are found in the histological sections of the periosteum and of the surfaces of the bones, and in one such focus is a small sporadic center of leucocytic infiltration.—[From abstract].

BECHELLI, L. M. Estudo clínico da lepra do couro cabeludo. [Clinical study of leprosy of the scalp.] *Rev. Brasileira Leprol.* 6 (1938) Spec. No., pp. 83-100.

Detailed notes are given of 14 cases of scalp involvement with alopecia seen at the Cocais asylum-colony. There were erythema and infiltration, macules and (in one case only) lepromatous nodules. Of sensory disturbances, that of temperature discrimination was more common than of pain and touch. Alopecia is most frequent in the temple region; hair is generally left in front of the ear and over the temporal artery. The question is raised whether the leprotic lesions first appear in bald areas or themselves determine the baldness. Bacilli are found most easily in the bald areas but may also invade the hairy areas. [Illustrated with six case photographs and two photomicrographs.]—[From author's summary.]

TAJIRI, T. Lepra des Ohrs. (I. Mitteilung.) [Leprosy of the ears.] Trans. 10th Meet., Japanese Lep. Assoc. *La Lepro* 9 (1938) suppl. 47-48 (abstract).

The auditory capacity in lepers in general is more or less reduced, progressively distinctly with advancement of the nodular type. Higher tones are heard somewhat more poorly than lower ones. With reference to bone

conduction, no changes were detectable. Weber unchanged, Rinne in general positive. External ear: infiltration generally more distinct in the lobe than elsewhere; when of high degree it affected the perichondrium and cartilage cells and gave rise to absorption of cartilage and change of form. External auditory canal: distinct infiltrations seen, not however amounting to nodule formation; the infiltration extended around the cerumen glands, but no bacilli were to be seen in the body of glands or in their ducts; when the perichondrium was much infiltrated bacilli were found in the cartilage, which showed a tendency to atrophy; bacilli were seen in the nerves and in the external sheath of hair roots, without having caused much regressive change; in the bony portion of the canal not the slightest changes were detected. Tympanic membrane: on its inner side there were almost no leprotic changes, but they were present on the external side. Middle ear: hardly changed. Internal ear: cochlea and auditory nerve free from changes. Eustachian tube: no changes of the epithelium of the mucous membrane of the part leading to the mouth, but distinct changes in the tunica propria; foamy tissue was distinctly visible in the intermediate substance and surrounding the mucous glands, and a very few bacilli were found in the body of the glands; in the interstices of the muscle tissue of the lower part were found quite high grade leprotic infiltrations, with bacilli in the perichondrium and at times also in cartilage cells; the penetration of bacilli into the nerves, vessels and their surroundings was also relatively distinct. In the upper part, approximately 1 cm. away, there was very little infiltration, but it was distinct in the interstitial tissue and around the mucous glands and blood vessels. In the mucus within the eustachian tube many bacilli were present.—[From abstract.]

MENDONÇA DE BARROS, J. Aspectos clínicos do comprometimento da íris na lepra. [Clinical aspects of involvement of the iris in leprosy.] *Rev. Brasileira Leprol.* 6 (1938) Spec. No., pp. 3-12.

The author describes in detail the lesions of the iris as seen in 137 out of 800 cases observed at the Sanatorio Padre Bento (São Paulo) over periods of from 1 to 6 years. The conditions are classified as follows: (1) diffuse iritis, subdivided into (a) acute or superacute and (b) subacute or chronic (reaction conditions); and (2) miliary or nodular iritis. The acute diffuse condition is characterized by sudden onset, marked pain, photophobia, lachrymation and blepharospasm, seldom affecting both eyes. There is usually generalized hyperemia, corneal bedewing, and often the aqueous is filled with fibrin, as seen in gonococcal iritis. There is an extraordinary tendency to the formation of synechia, which is combatted with difficulty; response to atropine is often weak. In the subacute or chronic condition, on the other hand, there are relatively few inflammatory symptoms and little tendency to form synechia. Here, too, there are corneal bedewing, ciliary injection, "tindall" of the aqueous, but little or no pain; because of lack of complaint the condition may be found only in routine examinations. The exudate tends to accumulate in the filtration angle or as a ring behind the limbus, often having a nodular form that may be confused with the miliary condition; these nodulations become organized, distort the iris, modify the form of the pupil, and transform the angle, which becomes round or obtuse. The miliary or nodular condition is characterized by pearl-like granules on the iris, small, round, often located near the sphincter, best

observed with the help of the slit lamp and sometimes seen only with it; indirect illumination shows them very clearly. They are perfectly tolerated and persist for years with no sign of inflammation except when the acute or subacute condition is superimposed. [This paper is illustrated by eleven extraordinarily fine drawings in color.]—[From author's summary.]

MENDONÇA DE BARROS, J. Mais alguns aspectos do comprometimento ocular na lepra. [Further aspects of ocular involvement.] *Rev. Brasileira Leprol.* 6 (1938) Spec. No., pp. 13-18.

This communication, complementary to one made in the previous year [see *THE JOURNAL* 7 (1939) 585] is a pictorial one, with reproductions of twelve stereograms taken with a special camera designed for photographing the anterior part of the eye. There are also three excellent drawings in color and one color photograph, the descriptions of which are duplicated in English.

—H. W. W.

MENDONÇA DE BARROS, J. Paralelismo entre lesões oculares e cutaneas na lepra. [Parallelism between ocular and cutaneous lesions in leprosy.] *Rev. Brasileira Leprol.* 6 (1938) Spec. No., pp. 19-24.

This paper discusses the ocular affections which are so important in lepromatous cases and almost totally absent in tuberculoid ones. The frequency of such involvement varies greatly according to different authors, which differences are ascribed not only to regional variations of the forms of the disease but also to the means employed in examining the eye. The author thinks that the slit-lamp is absolutely necessary for the early diagnosis of these lesions. At certain phases of the corneal lesion the morphological picture is very similar to that of lesions of the skin. In some cases nodule formation predominates; others show infiltration without nodules, and yet others present a combined aspect (infiltrations and nodules). [Some of the corneal lesions are well illustrated by photographs taken with the corneal microscope.]—[From author's summary.]

MENDONÇA DE BARROS, J. Algumas aquisições terapeuticas em oftalmologia. [Therapeutic measures in ophthalmology.] *Rev. Brasileira Leprol.* 6 (1938) Spec. No., pp. 25-29.

Here are summarized the therapeutic measures now employed by the author, directed not so much at the specific lesions as at certain complications, especially those of ocular lepra reaction. Vitamin A aids in regeneration of epithelium in cases with corneal erosions, and is protective when there is lagophthalmos and keratitis due to it. Vitamin C exerts an anti-allergic action in acute diffuse iritis. Atofanil and cytotropina are used in affections of the anterior segment. Introduction of the patient's own blood, unchanged, into the anterior chamber, after withdrawal of the aqueous, has been used when there are leprotic nodules there, as v. Schieck used it for tuberculous nodules of the iris. Mydricain (Flynn) is efficient against posterior synechiae, which always develop strongly after acute reaction iritis.—[From author's summary.]

MENDONÇA DE BARROS, J. Organização do serviço de olhos do Sanatorio "Padre Bento". [Organization of the ophthalmological service.] *Rev. Brasileira Leprol.* 6 (1938) Spec. No., pp. 31-33.

The organization of the ophthalmic department at the Sanatorio Padre Bento is described. Since 1932 the author has examined with the slit-lamp

and corneal microscope more than 1,200 patients. His observations are being published as the fourth monograph from this institution, to be sent to those who are interested in the subject.—[From author's summary.]

PRADO, P. B. Contribuição para o tratamento dos surtos agudos de irite leprotica. [Treatment of the acute phases of leprotic iritis.] Rev. Brasileira Leprol. 5 (1937) Spec. No. pp. 239-245.

This report deals with a group of cases of acute, diffuse leprotic iritis which previously had been given the usual local treatment, protein shock therapy, autohemotherapy and chaulmoogra injections, with little or no effect. They were then given intravenous injections of a hypertonic (30%) glucose solution, every second day, with an average of 10 doses. Of the 15 cases so treated, 8 were cured and 3 improved; in 4 the condition was not influenced.—[From abstract in *Arch. Schiffs- u. Trop.-Hyg.* 43 (1939) 285.]

VIALLEFONT AND FUENTES. La lépre en ophtalmologie. [Leprosy in ophthalmology.] *Ann. d'Ocul.* 175 (1938) 380-390.

Leprosy lesions of the skin about the eye and in the lids are often followed by entropion or ectropion. Occasionally an isolated nodule may resemble a chalazion. Facial paralysis and oculomotor palsies are common. Infections of the lacrimal sac probably play a part in the conjunctival and corneal affections. Conjunctival infections with the leprosy bacillus are not known, but conjunctival reactions are seen over scleral nodules. Among ocular lesions, keratitis is one of the most common and usually resembles tuberculous parenchymatous disease, going on to complete scar formation. Small interstitial lepromas of the cornea are sometimes seen and secondary corneal involvement may follow lagophthalmos or destruction of the sensory nerves. Iritis, cylitis, and iridocyclitis are very common, probably being the chief causes of blindness in leprosy. Treatment consists of the usual local procedures and general measures such as chaulmoogra oil, methylene blue, and chaulmoogra-cholesterol. Ocular surgery is not particularly contraindicated in leprosy.—[From abstract in *American Jour. Ophthalm.* 21 (1938) 1309.]

UCHIDA, M. Ergebnisse der Untersuchung lepröser Augen mit der Durchtrennungsmethode des Äquatorteils. [Results of the examination of leprosy eyes by the method of equatorial section.] *Trans. 10th Meet., Japanese Lep. Assoc. La Lepro* 9 (1938) 46-47 (abstract).

Eyes removed at autopsy and fixed in formalin were sectioned equatorially and magnified with a loupe under oblique light. Of the bulbs of 57 cases of nodular leprosy so examined, the external eye in many cases showed leprosy infiltration of the cornea and posterior synechia with the iris. This technique is valuable for the examination of the internal eye. Particularly are the leprosy changes on the posterior surface of the ciliary body, and its lipid changes, distinctly recognizable in this way, even macroscopically. Leprosy bacilli, however, are not readily detected in this way; they are easily perceived in the usual thin section. This method of investigation shows that leprosy changes of the fundus are rare. The ante-mortem ophthalmoscopic examination reveals such lesions only when the pathologic changes are very advanced. Whether or not there are changes in the fundus when tuberculosis, nephritis or septicemia occur, there has

heretofore been only subjective evidence. By means of the author's method such conditions have been demonstrated, at least quantitatively.—[From translation of abstract.]

FUCHS, A. Ueber Leprabacillen in klinisch normal aussehenden Augen. [Leprosy bacilli in clinically apparently normal eyes.] *Klin. Monatsbl. f. Augenheilk.* **98** (1937) 728-734.

The author examined the eyeballs of three patients who had died of leprosy. One case came from Honolulu and two from Surabaya. In contrast with certain Japanese investigators, he came to the following conclusions. Even eyes that on clinical examination appear externally to be normal often show specific foci of inflammation; these occur especially in the sclera, from where the bacilli advance between the lamellae of the periphery of the cornea. Comparatively often the interior parts of the eyes are affected, which however show less inflammatory manifestations in proportion to the numbers of bacilli. The favorite seat of the lepra cells in the interior parts seems to be the periphery of the ciliary body and the neighborhood of the circulus iridis major. The supposition is rejected that the great number of bacilli in the interior parts derived from the conjunctiva, affecting the subconjunctival tissue, the episclerotic and the ciliary body. In the case of the foci in the episclerotic, inflammatory manifestations are clearly visible, whereas in the interior the tissue hardly reacts with inflammation. On the contrary, the bacilli reach the ciliary body through the blood, as in the case of tuberculosis. In the same way the episcleritis is caused by blood-stream dissemination, and only in exceptional cases passes on. After numerous examinations of living lepers the author was able to determine clinically that the episclerotic is affected earliest and most frequently, long before anything can be seen on the lids. This suggests that the infection arises in the episclerotic itself, not from the lacrymal fluids or the lids. That bacilli come from the nose through the nasolacrimal duct into the conjunctival sac is regarded by the author as out of the question in the majority of cases; rather the reverse takes place. —KLINGMÜLLER

SOUZA-CAMPOS, N. AND ALAYON, F. Lepra e sífilis. [Leprosy and syphilis.] *Rev. Brasileira Leprol.* **6** (1938) Spec. No., pp. 101-115.

There are presented [with case photographs and photomicrographs] cases with lesions of tertiary syphilis that simulated different forms of leprosy. Certain tubero-circinate syphilids were similar to tuberculoid lesions. Histologically no essential difference was found between these lesions and the tuberculoid granuloma. The diagnosis of leprosy is only possible when there are lesions of the nerve branches.—[From authors' summary.]

GRÜTZ, O. Lepra maculo-anaesthetica. [Case of maculo-anesthetic leprosy.] *Zentralbl. f. Hautkrkh.* **56** (1937) 229.

Case of a 30-year old woman, employed from 1924-28 in a factory in Brazil. After an injury in 1928 on the right elbow, there developed a slowly enlarging anesthetic red patch. After child-birth in 1934 there was swelling above the left eye. In 1936 there was on the right elbow a slightly bluish infiltration, the size of the palm, and above the left eye one 3 cm. in diameter. In the former were distinct sensory disturbances; numerous bacilli obtained on incision; nose and throat negative.—KLINGMÜLLER

DUSAN, LOMBARD, R. AND TIVOLLIER. Maladie de Hansen, forme nerveuse avec léprides érythémato-circinées. [Leprosy; neural form with erythematous-circinate leprids.] *Marseille-méd.* 2 (1938) 382-384.

An Indo-Chinese who left Tonkin at the age of 12 developed the first general signs of leprosy 9 years later. In spite of treatment with methylene blue the disease progressed during the next three years to the neural form with muscular atrophies, extensive areas of anesthesia, and enlarged nerves. In the course of treatment with iodized hyrganol there occurred a marked eruption of erythematous-circinate leprids. The lesions and the nasal mucus were negative for bacilli.—[From abstract in *Ann. Dermat. et Syphil.* 10 (1939) 515.]

ROGER, H., BOUDOURESQUES, J. AND LOMBARD, R. Maladie de Hansen achromique révélée par une paralysie cubitale attribuée à un traumatisme. [Achromic leprosy revealed by cubital paralysis attributed to traumatism.] *Marseille-méd.* 2 (1938) 393-396.

A report of a case in a Somali, aged 20, who came for consultation on account of a cubital paralysis, with contracture and atrophies, attributed to traumatism. There were found achromic patches with sensory disturbances and thickening of the cubital nerve. The authors emphasize the existence of an exaggeration of the reflexes of the lower extremities which indicated affection of the cord.—[From abstract in *Ann. Dermat. et Syphil.* 10 (1939) 516.]

FIDANZA, E. P. Naevus epitheliomatoso quístico de la cara (adenoma simétrico de la cara, tipo Balzer-Menetrier) dos veces confundido con lepra. [Cystic epitheliomatous naevus of the face (symmetrical adenoma, Balzer-Menetrier type) twice confused with leprosy.] *Rev. Argentina Dermatosis.* 22 (1938) 547-555.

The author reports a case the histological picture of which coincides with that of Brookes' cystic epitheliomatous adenoma, previously described by Balzer and Menetrier under the name of sebaceous adenoma, and which Pasini, in 1920, proposed be called cystic epitheliomatous naevus of the face. The interest in this case is not the disease itself but the fact that the extensive changes that it caused [illustrated photographically] led on two occasions to a diagnosis of leprosy.—[From abstract in *Vida Nueva* 43 (1939) 259.]

VIGNE, P., VIGNOLI, BONNET, C. AND TIVOLLIER. Maladie de Hansen; cicatrization rapide d'ulcérations trophiques par l'huile de chaulmoogra nitrée. [Leprosy; rapid healing of trophic ulcerations with nitrated chaulmoogra oil.] *Marseille-méd.* 2 (1938) 385-388.

Report of a case of advanced lepromatous leprosy, with trophic ulcers and in bad general condition, in which there was rapid improvement of the ulcers and cicatrization following intramuscular administration of nitrated chaulmoogra. By treating the molecule of the oil with nitric acid, it is claimed, the fatty body itself is modified without destruction, while many heterogenous bodies are eliminated. The acidity of the crude oil, 15 to 20% as oleic acid, is lowered to 1% in the extracts thus obtained, which are easily injectable after solution in an excipient fat. The solution can be sterilized at 120°C. without difficulty. This product will be experiment-

ed with more fully in a leprosarium in New Caledonia.—[From abstract in *Ann. Dermat. et Syphil.* 10 (1939) 515.]

DELANOE, M. E. Huile d'olive eucalyptolée, médicament adjuvant contre la lèpre. (La décoction des feuilles fraîches d'eucalyptus dans l'huile d'olives.) [Olive oil and eucalyptus (a decoction of fresh eucalyptus leaves in olive oil) as an adjuvant medicament.] *Maroc-méd.* 18 (1938) 412-413.

To prepare this medicament fresh leaves (about 50 per liter of olive oil) are washed, dried, mixed with the oil and heated over a low flame to boiling. This preparation is applied to dressings, instilled into the nose, and given by mouth in doses of a coffee-spoonful twice a day. It does not have any direct effect upon leprosy, but it favors the cicatrization of wounds and is therefore recommended as an adjuvant. In this connection mention is made of the natural biological effects of the vitamins contained in such oils, A and D especially.—[From abstract in *Bruzelles méd.* (1939), March 26.]

CHEVALIER, A. Utilisation du "*Plubago zeylanica*" pour le traitement de la lèpre. [Utilization of *Plubago zeylanica* in leprosy treatment.] *Revue Botan. appliquée*, No. 200, 1938, p. 269.

The plant mentioned, and its variety *rosea*, occurs extensively in all of tropical Africa, and is used by many of the native peoples for the treatment of leprosy. The results observed seem interesting.—[From abstract in *Bull. Inst. Pasteur* 37 (1939) 470.]

GRIMES, M. Le traitement de la lèpre par l'hydrocotyle. (Note préliminaire). [Treatment of leprosy by hydrocotyle.] *Bull. Soc. Path. exot.* 32 (1939) 692-693.

The remedy used by the author derives from *Hydrocotyle asiatica*, an umbelliferous plant which occurs abundantly in Madagascar. He has employed a macerate in alcohol, then the fluid extract (technique of the Codex), then the residue; administration was by mouth. He will describe later the active substance, which he has isolated. The effects were especially remarkable on the ocular lesions, so long as they had not involved the posterior chamber. They were also remarkable on the lepromas, which discharged and left a pale cicatrix, less definite and slow on the neural lesions. However, the treatment is not without dangers, especially that of agranulocytosis. —ET. BURNET

BOENJAMIN, R. De lepratherapie in de kliniek in het bijzonder de omnadininjecties bij lepreareactie. [Therapy of leprosy in clinical practice and omnadin injections for lepra reaction.] *Geneesk. Tijdschr. Nederlandsch-Indië* 78 (1938) 1311-1322; also *Med. Berichten* 2 (1938) Extra No. 8, September, pp. 118-129.

Of two iodized ethyl ester preparations of chaulmoogra oil tried out by the author at the Plantoengen settlement, preference is given to the so-called Philippine preparation over that known as "4828-aJ." In adults during the first month 1 cc. was administered once weekly, during the second month 1.5 cc., and during the third month 2 cc. After an interval of a month the same dosage series was repeated. The results are considered to be satisfactory. When lepra reaction occurred it was treated by

5 to 10 injections of omnadin in 2 cc. doses—daily for strong patients and twice weekly for the weak ones. This treatment was well tolerated, without serious local reactions. Favorable results were obtained in 10 of the 12 cases so treated. Fever came down by lysis, appetite returned, pain in the joints subsided and lepromata become quiescent again.—[From abstracts. This paper was presented at the Cairo conference, without author's summary; see *THE JOURNAL* 6 (1938) 459.]

GATTI, C. AND JIMENEZ GAONA, R. Cebion bei der Lepra-Behandlung. [Cebion in the treatment of leprosy.] *Arch. Schiffs- u. Trop.-Hyg.* 43 (1939) 32-33.

This drug was used in the treatment of two cases, one with macules and adenopathy in septicemic periods, the other with macules and several ulcers. There was important and rapid improvement both of the ulcers and in the general condition of the patients. The authors believe that this medication should not be overlooked in the treatment of leprosy, though its real value can be determined only by further experiments.—[From the author's summary.]

UGARRIZA, R. G. Cebion bei der Behandlung von lepröser Septicaemie. [Cebion in the treatment of leprosy septicemia.] *Arch. Schiffs- u. Trop.-Hyg.* 43 (1939) 33-34.

The author reports the use of this substance (vitamin C) in a case which under chaulmoogra treatment had every three months a febrile "septicemic" condition which did not respond to any medication. There were marked chills and splenomegaly, but typhoid, paratyphoid and malaria were ruled out. Cebion was given by intravenous injection with very favorable results; by mouth it was less effective.—[From abstracts.]

LAGOUDAKY, S. La lèpre et le cadior. [Cadior in leprosy.] *Bull. Leprosierie Neshu El Bahari [Behera]* 8 (1939) 1322 and 1329.

The first of these two notes states that a child "cured by cadior" continues without relapse; weekly intramuscular injections have been continued, together with administration of alepol. Data of two other cases under treatment are given in the second note. The drug, prepared by a M. Maigre, of Paris, is described as a compound of gold with a cadmium-iodine group, with hexamethylenetetramine as a mordant; calcium and strontium are added to counteract toxic effects, the former to lessen the focal reactions and the latter to protect the kidneys. This preparation is spoken of as very effective in tuberculosis. —H. W. W.

MALAIHOLIO, J. F. Beknopt verslag van de behandeling van leprozen met het antilepraserum van Prof. Reenstierna te Semarang. [Treatment of lepers at Semarang with the antileprosy serum of Reenstierna.] *Geneesk. Tijdschr. Nederlandsch-Indië* 79 (1939) 601-618.

The effect of the antileprosy serum of Reenstierna on practically all of the specific lesions of leprosy has been tested. There was a favorable effect on the general condition of some of the patients, and to a greater or less extent on many of the symptoms. The most outstanding change was the immediate improvement of the nasal lesions of almost all of the patients. To a lesser degree the same was true with regard to the leprotic ulcers and the anesthesias and pareses. There was practically no influence on the lepromas, in-

filtrations, anesthetic macules or trophic ulcers. Of interest was the fact that the color of the skin of two of the patients became normal, and the senses of taste and smell of one improved. Brief case-histories are given of the 13 patients, who were checked practically daily for two months.—[From the author's summary.]

BOENJAMIN, R. Toepassing van Reenstierna's antilepraserum bij enkele leprozen te Batavia. [Trial of Reenstierna's antileprosy serum in Batavia.] *Geneesk. Tijdschr. Nederlandsch-Indië* 79 (1939) 1346-1370.

From May to July, 1938, seven fairly advanced cases, including three with lepra reaction, were treated with Reenstierna's antileprosy serum, by his method—one or more series of three injections (10 cc. three times a week, intragluteally) with an interval of about a month between series. Three patients developed urticaria with joint pains, and one had an acute anaphylactic attack after the second series in spite of a preliminary desensitizing injection of 0.5 cc.; two reacted with fever and headache; only one showed no secondary effects. Of the lepra reaction cases, one lost all trace of the reaction (but suddenly developed a psychosis), the other two improved temporarily but relapsed, and in one of them there developed lung symptoms, possibly tuberculous; in that case there was slight improvement in sensitivity and in the motor power of his fingers. Of the remaining four, one showed improvement of nasal lesions; one of the sensory disturbances in macules, which became flatter and less active in appearance; one very slight sensory improvement; the fourth grew worse, infiltrative lesions increasing. No definite conclusions are attempted. It is noted that in one and the same patient there was improvement in some respects but progression in others, and that the connection between improvements observed and the treatment was not always convincing.

—H. W. W.

GOLOVINE, S. Essai d'un traitement biologique de la lèpre. [Trial of a biological treatment of leprosy.] *Mond méd.* (1938) 939-940.

The author produced pustules in leprosy macules by intradermal injection of a drop of xylol, for the purpose of obtaining material for bacteriological examination. The method was not successful for finding bacilli, but it was noticed that as the pustule was resorbed the macule changed, becoming faint or disappearing entirely; all the other macules present changed similarly. This regression continued for 15 to 20 days. Ten macular cases were then treated experimentally, an injection of 0.1 cc. of xylol being given into the lesions every 15 days. After 6 injections there was complete disappearance of all lesions in one case, disappearance of some and lessening of the others in four, less marked improvement in three and only slight in two. He suggests further investigation of this method, alone or in combination with other treatments.

—H. W. W.

CHOWHAN, J. S. AND CHOPRA, R. N. Cobra venom in nerve leprosy. *Indian Med. Gaz.* 73 (1938) 720-725.

The authors discuss their experiments in connection with the therapeutic uses of cobra venom, particularly in neural leprosy. This material has already found a place in the treatment of neuritis; Macht showed that it has marked analgesic effect when injected intramuscularly, and the action on the cerebral pain center is not unlike that of morphine, though slower to appear and more lasting in effect. White found that in aseptic tissue spaces it does

not cause the production of granulation tissue: it rather destroys or prevents the growth of such tissue. The possibility that it may have a similar action inside a leprous nodule is considered. Chopra, Das and Mukherjee showed that in dilutions of 1:60,000 to 1:80,000 this venom stimulates the growth of tissue culture cells, but higher concentrations (e.g., 1:20,000) caused rapid destruction of the growing cells. On the basis of present observations it cannot be said whether the venom has any effect on the leprosy bacillus or not (the question of the affinity of the venom for fatty tissue and the presence of fat in the bacilli is discussed), but it does cause reduction in the size of nodules and macules, and the authors suggest that it may supplant chaulmoogra oil. With regard to the treatment of nerve pain, out of 32 cases 14 showed marked relief, 16 partial relief, and two none.—[From abstract in *Urol. & Cutan. Rev.* 43 (1939) 496.]

VEIGA DE CARVALHO, S. Contribuicao para o estudo da cirurgia de nervo cubital na lepra. [Surgery of the cubital nerve.] *Rev. Brasileira Leprol.* 6 (1938) 431-441.

Report of results of surgery of the cubital nerves in 21 cases. Though because of the small number involved no definitive conclusions are reached, the author considers such intervention indispensable in nerve abscess; his results have been very encouraging especially with regard to lessening of pain and interrupting the development of trophic lesions.—[From abstract in *An. Brasileira Dermat. e Sifilog.* 14 (1939) 154.]

IKEGAKI, I. Ueber den Gehalt des Carotins und des A-Vitamins im Blutserum der Leprakranken. [The amount of carotin and vitamin A in the blood serum of lepers.] *Zeitschr. f. Vitaminforsch.* 6 (1937) 206-209.

Investigations of the amount of carotin and vitamin A in the blood serum of 70 outpatients suffering from leprosy, including 8 neural, 28 macular, 29 nodular and 5 mixed cases. In all of them there was a decrease of these substances. In cases of neural and nodular leprosy the amount of vitamin A is reduced, but in macular leprosy it is almost normal. Carotin is reduced in all three forms. Significant relations between these conditions and the stage of the disease do not exist. —KLINGMÜLLER

BASU, N. K. Further studies on leprosy and vitamin B₂ (G) deficiency. *Ztschr. f. Vitaminforsch.* 7 (1938) 297-298.

The author concludes from experiments on white mice that animal protein containing vitamin B₂ is superior as a diet to vegetable proteins.—[Abstract from *Trop. Dis. Bull.* 36 (1939) 246.]

GROT, H. Estudio sobre fosfatasa calcio y fósforo inorgánico en el suero de los leprosos. [Studies on calcium phosphatase and inorganic phosphorus in the blood of lepers.] Tesis de Grado. Bogotá, 1939.

The author discusses the distribution and characteristics of phosphatase and its role in human physiology, and the usual methods of measuring the phosphatase activity. With regard to its variations, it is high in infancy, in which, according to the technique of Bodansky, the normal unit of phosphatase in the blood is from 5 to 12 U, and it is more elevated in pregnancy. In pathological conditions the phosphatase activity shows an increase in cases of Paget's disease, rickets, and others. In 117 lepers it was found slightly increased in one-third of the cases. —M. BERNAL LONDOÑO

COLE, H. I. AND CARDOSO, H. T. Alepric, aleprylic, aleprestic and aleprolic acids, new homologs of chaulmoogric acid. *Jour. American Chem. Soc.* **61** (1939) 2349.

Four optically active fatty acids hitherto unknown have been discovered in and isolated from *Hydnocarpus wightiana* oil. They have been named by the authors alepric, aleprylic, aleprestic and aleprolic acids. The characteristics of these new acids and their ethyl esters are given and their relationship to their previously known homologs, hydnocarpic and chaulmoogric acids, is shown.

—AUTHORS' ABSTRACT

COLE, H. I. AND CARDOSO, H. T. Analysis of chaulmoogra oils. III. *Hydnocarpus wightiana* oil. *Jour. American Chem. Soc.* **61** (1939) 2351.

H. wightiana oil from southern India was analyzed by the method described in the first article of this series. This is the first quantitative analysis that has been made of this important medicinal oil. Six constituents not previously reported as present have been found, four of which are new homologs of chaulmoogric acid. The analysis shows that the total fatty acids of the oil contain 48.7% hydnocarpic acid, 27.0% chaulmoogric acid, 12.2% gorlic acid, 6.5% oleic acid, 1.8% palmitic acid and 3.4% lower homologs of chaulmoogric acid.

—AUTHORS' ABSTRACT

COLE, H. I. AND CARDOSO, H. T. Analysis of chaulmoogra oils. IV. *Hydnocarpus anthelmintica* oil; V. *Taraktogenos kurzii* (chaulmoogra) oil. *Jour. American Chem. Soc.* **61** (1939) 3442.

H. anthelmintica oil analyzed by the authors' method was shown to contain the following constituents (computed as free fatty acids): 67.8% hydnocarpic, 8.7% chaulmoogric, 1.4% gorlic, 12.3% oleic, 7.5% palmitic acid and 0.1% lower homologs of chaulmoogric acid; loss 2.2%. *T. kurzii* (true chaulmoogra) oil was obtained from fresh seeds from the plantation of *T. kurzii* trees at Vicoso, Minas Geraes. The analysis of the total free fatty acids from the oil gave 34.9% hydnocarpic, 22.5% chaulmoogric, 22.6% gorlic, 14.6% oleic, 4.0% palmitic acid, and 0.4% lower homologs of chaulmoogric, loss 1%. When pressed from fresh selected seeds, the keeping qualities of all the oils analyzed by the authors were found to be very good. A table of the characteristics and percentage composition of the five oils so far analyzed (*C. brasiliensis*, *O. echinata*, *H. wightiana*, *H. anthelmintica* and *T. kurzii*) is included in the article.

—AUTHORS' ABSTRACT

POSSOLO, H. Índice de iodo e componentes do óleo de chaulmoogra. [The iodine index and components of chaulmoogra oil.] *Rev. Brasileira Leprol.* **6** (1938) 471.

The author offers a general consideration of the composition of chaulmoogra oil and reports the first results of his isolation of components of low melting point. These fractions, he believes, oxidize very readily in the animal organism, for which reason their special study is a matter of interest in connection with the therapeutics of leprosy.—[From abstract in *An. Brasileira Dermat. e Sifilog.* **14** (1939) 155.]

ROLFS, P. H. AND ROLFS, C. Domesticating anti-lepric species in Brasil. *Lep. Rev.* **9** (1938) 95-105; 162-169.

This work deals with the cultivation in Brazil of *Carpotroche* (sapucainha), *Taraktogenos kurzii* and *Oncoba echinata* (gorli). It is well illus-

trated and contains useful suggestions for cultivation of these trees.—[From abstract in *Bull. Inst. Pasteur* 37 (1939) 470.]

DE SOUZA-CAMPOS, N. AND FERNANDEZ, J. M. Resultados de reacção de Mitsuda nas creanças dos preventorios. [Results of the Mitsuda reaction in children in preventoria.] *Ann. Paulista Med. e Cir.* 37 (1939) 308 (abstract).

The authors present further findings with the lepromin test in children in the preventoria, comparing them with results obtained in 1936. They confirm the opinion previously expressed, that Mitsuda-negative children require greater care than those that are positive. All of 9 children in whom the disease developed between 1936 and 1938 had had negative reactions. Comparing the results with test material previously prepared by the method of Mitsuda and Hayashi and that now used—made by Muir's technique—it is concluded that they give entirely concordant results. They are going to begin a series of studies from the point of view of treatment of these cases with negative results, and also the collection of material by the Carville scheme to discover if possible a frustrate leprosy.—[From a translation of abstract.]

FERNANDEZ, J. M. M. Interpretação e valor da reacção precoce provocada pelo "leprolin" após 48 horas. [Interpretation and value of early reaction provoked by lepromin after 48 hours.] *Ann. Paulista Med. e Cir.* 37 (1939) 308 (abstract).

The author has studied the clinical and histological evolution of the lepromin (Mitsuda) reaction and has found that in cases positive after 48 hours they present histological features typical of an allergic reaction. The reaction read at that time is always negative in lepromatous cases, variable in "Ns" and "Na" cases, and intensely positive in the great majority of "Nt" cases. It is concluded that the reaction can be read after 48 hours, that it presents specific clinical and histological characteristics, and that in the majority of cases the results coincide with those of the classical reaction.—[From author's summary; see also original article in *THE JOURNAL* 8 (1940) 1-14.]

GUNDERSON, E. AND BERNER, O. Om Wassermanns reaksjon ved Lepra. [On the Wassermann reaction in leprosy.] *Norsk. Mag. f. Laegevidensk.* 99 (1938) 353-378.

The general impression to be gained from the literature is that leprosy, or at least its nodular form, can give rise to a positive Wassermann reaction, though this conclusion has been challenged repeatedly in the past few years. The authors, examining the sera of 26 cases (10 nodular, 11 maculo-anesthetic, and 5 neural) found only two in which the Wassermann and Meinicke II reactions were positive. One of these cases had definitely been syphilitic, and the other, a woman of 79 years of age with maculo-anesthetic leprosy, the authors conclude on rather unsatisfactory grounds, probably has latent syphilis. This leads to the conclusion that their findings do not support the view that leprosy can give rise to a positive Wassermann reaction.—[From abstract in *Bull. Hyg.*, Aug. 1938.]

LOWE, J. AND GREVAL, S. D. S. Complement-fixation in leprosy and other diseases by the Witebsky, Klingenstein and Kuhn (W.K.K.) antigen. *Indian Jour. Med. Res.* 26 (1939) 833-841.

Results of the complement-fixation test with the W.K.K. antigen in 250 cases of leprosy, 46 of syphilis with positive Wassermann reactions, 20 of leishmaniasis, 3 of pulmonary tuberculosis and 43 of other diseases are reported. Of 117 cases of lepromatous-type leprosy, 98% gave inhibition of hemolysis, usually complete. Of 133 neural cases, only 41 (31%) showed any inhibition and in only 12 cases was it complete. In this neural group were 11 bacteriologically positive cases; all gave positive fixations, 7 complete. On the whole the results corresponded very closely to those of the bacteriological examination, nearly all of the positive cases giving some degree of inhibition of hemolysis. The test, therefore, is considered to be of little value in diagnosis or prognosis; it is positive only in cases in which diagnosis is easy, and fails to differentiate between the neural cases showing bacilli in smears, which are often of good prognosis, from the unfavorable lepromatous ones. Regarding the other diseases mentioned, 20% of the syphilitic cases showed inhibition, usually incomplete; all but two of those of leishmaniasis gave complete inhibition; there was partial inhibition in all of the tuberculosis cases; all cases of other diseases gave negative results. The test is neither specific for leprosy nor sensitive in that disease since the mild neural cases are usually negative. —H. W. W.

GREVAL, S. D. S., LOWE, J. AND BOSE, R. Complement-fixation in leprosy with Witebsky, Klingengstein and Kuhn (W.K.K.) antigen; a new technique. *Indian Jour. Med. Res.* 26 (1939) 843-849.

This paper describes the technique of the complement-fixation with the W.K.K. antigen that was used in the study reported separately [see the foregoing abstract]. In it is used the hemolytic system of method No. IV of the report of the (British) Medical Research Committee (now Council) on the Wassermann test. The procedure involved is brief, the reagents used are standardized, and quantitative readings can easily be made. In the lepromatous type of leprosy the reaction is very sensitive, but in neural leprosy its sensitiveness is low. Regarding its specificity, it is positive in kala-azar, and doubtful reactions have been obtained in tuberculosis, malaria, syphilis and dermal leishmaniasis. The reaction may be of use in evaluating arrest of the disease in previously positive cases. —H. W. W.

FICKER, M. Methoden der Komplementbindung und Flockung bei Leprosy. [Methods of complement fixation and precipitation in leprosy.] *Arch. f. Hyg.* 118 (1937) 362-368.

For the production of a standard extract for complement fixation and precipitation reactions in leprosy the author suggests the following method: With a slant agar culture of *Bacillus leprae* (stock 1225 or L₃Tro) which has been cultivated for 3-4 days at 37°C. on glycerine agar, Kolle dishes containing the same agar are inoculated. The agar is prepared from the Hottinger broth medium, neutral to litmus. A moderate quantity of water must be present in the bottom of the dishes. The dishes are then incubated for 14 days and the growth removed with a glass spatula. In a shaker-retort 15 gm. is covered with 100 cc. of ether, shaken, and carefully closed in an ice-box, extracted for an hour, with frequent shaking. Filtration through a hard filter in the ice-box, with a final quick washing with ether. The precipitate remaining on the filter is then boiled in a water-bath for 1½ hours on each of two consecutive days in 100 cc. of 10%

lactic acid, filtered several times through a hard filter, and frequently washed with distilled water until free of acid. The precipitate remaining on the filter is taken up in 200 cc. of absolute alcohol and extracted for 36 hours in the reflux condenser, then filtered three times in a hot-water funnel at 80°C., using a hard filter. The precipitate remaining on the filter then shows, with the usual Ziehl stain, amorphous blue masses in which as a rule no residue of red rods is to be found. If some isolated ones are still found, especially inside agglomerations, it is of no consequence. Such antigens are prepared from lepromas of rats or human beings, or from the cultures mentioned, or other acid-fast bacilli. The complement fixation reaction is performed as in the Wassermann reaction. For the precipitation reaction the antigen is mixed with a 10% alcoholic tolu-balsam solution and can be used after 4 to 5 days. The precipitation reaction corresponds in its technique to the MKR. II.

—KLINGMÜLLER

NOZIMA, T. Ueber die Frühdiagnose der Lepra, besonders über die kleine Nachweisteknik von Leprabazillen. [The early diagnosis of leprosy, especially the micro technique of demonstrating the bacilli.] Japanese Jour. Dermat. & Urol. 44 (1938) 192 (abstract).

In this method 0.2-0.3 cc. of a 1% novocain solution is injected intracutaneously in the erythematous lesion and is then withdrawn. After the process has been repeated several times, a drop of the liquid so obtained is examined microscopically.—[From abstract.]

NAIR, V. G. AND PANDALAI, N. G. A note on the importance of a thorough bacteriological examination of all cases of clinical leprosy. Jour. Indian Med. Assoc. 8 (1938) 86-90.

The importance of thorough and repeated bacterial examinations is insisted on. By the method used (227 unselected cases examined) 57% of 147 cases diagnosed as neural were found positive. Healthy areas yielded positive results in a number of instances. Failure to detect bacilli by a single examination is not enough to establish a contrary diagnosis in doubtful cases. There is no evidence to prove that the finding of only a few bacilli in any given case argues for its noninfectiousness; hence the authors consider it safer to consider all cases as infectious. Either there are multiple points of entry or there is wide cutaneous dissemination of bacilli long before active localized lesions make their appearance.—[From abstract in *The Prescriber* 33 (1939) 286-297.]

RADNA, R. La microscopie de fluorescence comme mode de recherche du bacille de la lèpre et des trypanosomes. [Fluorescence microscopy as a method of study of the leprosy bacillus and the trypanosomes.] Ann. Soc. belge Med. trop. 18 (1938) 623-628.

Acid-fast and nonacid-fast bacilli can be distinguished by fluorescence microscopy after washing for 20 to 30 seconds in 3% acid alcohol and staining with fluorochrome or berberine sulphate. The visibility of mucin, red blood cells and banal bacteria is suppressed. The Koch and Hansen bacilli cannot be differentiated. Trypanosomes are easily demonstrated after staining with coryphosphine (1:1,000-1:20,000). A 1:15,000 solution applied for 5 to 10 minutes leaves these organisms alive, motile and fluorescent. White blood cells are also fluorescent but the red cells are not.—[From abstract in *Bull. Inst. Pasteur* 37 (1939) 460.]

INABA, T. Ueber den Entfärbungsvorgang der Leprabazillen im Gewebe. [Fading of leprosy bacilli in tissues.] Trans. 10th Meet., Japanese Lep. Assoc. La Lepro 9 (1938) suppl. 43-45 (abstract).

This is a study of the fading of bacilli in sections, which usually occurs after 1 to 2 months, occasionally after a few days, though on the other hand the color may be retained for a year or two. Frozen sections of skin nodules were used [fixative not stated but presumably formalin] and stained chiefly by the Ziehl-Neelsen technique. Basic technique: stain 1 hour, room temperature; wash briefly; differentiate in 1% HC1-alcohol, 1-2 seconds; 70% alcohol, 3-4 seconds, until clear reddish; wash, 3-10 minutes; counterstain, 1% aqueous methylene blue, 1-3 minutes; wash briefly; dehydrate in 70%, 80%, 95%, absolute and anhydrous alcohol; clear with xylol; mount with neutral balsam. Several variations are listed without note of the results except that when carbol-xylol was used for clearing fading occurred relatively early. About one year has elapsed since the specimens were stained, without fading except in some specimens. It cannot, therefore, be said yet how long the color may persist. In its course the fading of the bacilli nearly parallels that of the cell nuclei of the tissue, though the latter may fade earlier. Darkening of the color tone of the bacilli occurs relatively early, after one-half to one month, after which it remains constant.—[From abstract.]

MANALANG, J. Comparative effects of different chaulmoogra preparations on *My. leprae* in vitro. Month. Bull. Bur. Health (Manila) 18 (1938) 451-460.

Inguinal lymph nodes taken aseptically from a leper corpse, 11 hours after death, were used in these experiments. The following drugs were used: (1) purified *H. wightiana* oil, (2) plain *H. wightiana* esters, undistilled, (3) the esters with 0.5% iodine, (4) the esters with 5% creosote, (5) the esters with 50% olive oil, (6) *H. anthelmintica* ethyl esters with 0.5% iodine, and (7) the Mercado mixture. These drugs were applied to the lymph-node tissue in test tubes at 37°C. for periods varying from 25 to 38 weeks, being renewed 4 times at intervals of 2 to 3 weeks. Control observations for possible enzymatic action in the lymph nodes were also made, with the attendant difficulties of controlling contaminating bacteria. The Mercado mixture proved to be most effective so far as concerns the disappearance of the bacilli. The oil and the iodized esters were the most effective in removing acid-fastness. Most nonacid-fasts were found while the drugs were being renewed, and when the renewal was stopped they decreased in number, tentatively explained on the assumption that when renewal was stopped the removal of acid-fastness from the bacilli probably also stopped while the disintegration of the nonacid-fasts continued. The author thinks that by observing the effects of camphor, resorcin, olive oil, creosote, ether and iodine in different concentrations in this way, further information may be gained as to their possible rôle in enhancing the effects of chaulmoogra preparations on the organism. —J. O. NOLASCO

MANALANG, J. Removal of acid-fastness from *My. leprae*. Further observation. Jour. Philippine Islands Med. Assoc. 18 (1938) 205-209.

This is a continuation of in vitro observations on the removal of acid-fastness from *M. leprae* in two sets of inguinal lymph nodes by (a)

iodized *H. wightiana* ethyl esters and (b) the whole oil [see THE JOURNAL 6 (1938) 279, and the preceding abstract.] In one set of tubes the drugs were not renewed, while in the other set they were renewed four times at intervals of three weeks. In the twelfth week smears from the first set showed that 90% of the organisms had become nonacid-fast under the influence of the iodized esters, and only 3% with the oil. In the second set the esters-treated tissue showed 80% nonacid-fast, the other one 90%. These results show that for the most effective removal of acid-fastness, not only continuous contact of the organisms with the drugs is necessary but also periodical renewal of the latter. —J. O. NOLASCO

SATO, S. AND IDA, K. The classifying studies of acid-fast bacteria. Trans. 10th Meet., Japanese Lep. Assoc. La Lepro 9 (1938) suppl. 60-61 (abstract).

The authors report on a study that has apparently been carried on for some time, for two years previously they had divided the acid-fast organisms cultivated in Japan into five groups on the basis of color: creamy-white, apricot, saffron, tangerine and carrot. Here they tabulate 108 strains according to the British Colour Council standard. Growth and color production, they find, is better on alkaline glycerine agar than when the medium is acid, in which case the reddish organisms grow poorly. The findings with regard to acid production with various sources of carbon are also tabulated; they are not so constant, but it is concluded that on the whole there is some relation between acid production and color. There is no relation of either of these features with the sources of the organisms, mention being made of human and rat leprosy. —H. W. W.

EVANS, F. L. Clegg's ameba culture method for growing *Mycobacterium leprae*. Pub. Health Rep. 54 (1939) 301-305.

Amebas from industrial wastes and from stagnant pools were cultured in symbiosis with *Escherichia coli* isolated from human feces and an old laboratory strain of the *Vibrio comma*. The bacteria were spread over the surface of an agar plate and inoculated with the amebas from a well-developed culture. After 24 hours incubation the resulting growth was inoculated with the leprosy material. The plates were sealed with tape or a paraffin-vaseline mixture and incubated at 37°C. for from two weeks to several months. If smears gave evidence of the growth of acid-fast bacilli, subcultures were made to ameba-symbiont plates, legume agar-gentian violet media and legume agar slants. If there was indication of growth in subcultures further transplants were made, and these were continued as long as growth appeared to be occurring. Altogether, 52 specimens were used: 30 of cutaneous or subcutaneous nodules, one each of liver, spleen and testes, 18 samples of venous blood from patients who were having acute reaction or a series of tuberculin injections, and one specimen of pus from the pleural cavity. Altogether, 21 samples (40%) showed evidence of growth of acid-fast organisms; 18 were from nodules and 3 from blood. On continued subculturing two pure cultures of such organisms were obtained, one from tissue and one from blood. The subcultures grew well on legume agar. In ten days there were present smooth, glistening, deep-orange colonies composed of acid-fast, slender, very pleomorphic organisms. The possible etiological connection between the cultures and leprosy is discussed.

—M. H. SOULE

LOVING, W. L. AND KRIZ, J. R. Filtrability of the chromogenic culture (Duval) obtained from human leprosy. *Proc. Soc. Exper. Biol. & Med.* **40** (1939) 293-294.

Flasks containing 400 cc. of glycerol broth at pH 7.4 were inoculated with both old and recently isolated strains of the chromogenic acid-fast bacillus of Duval. At weekly intervals over a period of 11 weeks, 20 cc. from each flask were passed through a Seitz filter. Two-cc. portions of the filtrates were transferred to glycerol agar slants, which were subsequently incubated at 37.5°C. No macroscopic or microscopic evidence of growth occurred.

—M. H. SOULE

KRIZ, J. R. AND LOVING, W. L. Experimental production of leprosy in the rabbit with chrome acid-fast culture. *Proc. Soc. Exper. Biol. & Med.* **40** (1939) 593-595.

Rabbits were injected subcutaneously and intraperitoneally at weekly intervals for a period of three weeks with 2 cc. of a heavy suspension of old and recently isolated strains of Duval's chromogenic acid-fast bacillus from leprosy, and with *B. smegmatis* and *B. phlei* as controls. Only the animals receiving the freshly isolated chromogenic strain exhibited lesions resembling those of human leprosy. Microscopically there were aggregations of lymphoid and epithelioid cells with many mononuclear "foamy" cells containing myriads of acid-fast bacilli. The lesions progressed over a period of four months, the germs steadily increasing in numbers. In the control animals no gross or microscopic lesions were noted four months after the last inoculation.

—M. H. SOULE

JORDAN, P. Demonstration aus den Ergebnissen der Forschungsstelle für Mikrobiologie der Kaiser Wilhelm Gesellschaft zur Förderung der Wissenschaften in São Paulo, Brasilien, zur Frage der Uebertragung der Lepra des Menschen auf Zuchtratten. [Demonstration of results obtained at the Research Station for Microbiology of the Kaiser Wilhelm Society for the Promotion of Science at São Paulo, Brazil, on the question of the transfer of leprosy from human beings to laboratory rats.] *Zentralbl. f. Hautkrankh.* **56** (1937) 358.

This is a report of experiments conducted over a period of years with triturated human leproma injected into the skin of rats. In one instance there was development of a tumor at the place of inoculation after 15 months, with unlimited possibility of subsequent inoculation of the tumor from rat to rat. In one animal, after the second inoculation in the series from one animal to another, changes also occurred in the internal organs. Development of a further tumor capable of being passed on by inoculation also in a second experiment after 18 months. Control examinations for tuberculosis were negative.

—KLINGMÜLLER

WATANABE, Y. AND NONAKA, N. Experimental studies on chickens concerning leprosy (inoculating test with human and rat leprosy). *Trans. 10th Meet., Japanese Lep. Assoc. La Lepro* **9** (1938) suppl. 50-53 (abstract).

This is a lengthy summary of work mentioned by Ota and Sato in their report of similar work [see *THE JOURNAL* **8** (1940) 81]. Their conclusions are as follows: Chickens inoculated with rat leprosy showed considerable patho-

logic changes and numerous acid-fast bacilli at the place of inoculation, but in the internal organs the lesions were mild and acid-fast bacilli few. Chickens inoculated with human leprosy showed in comparison mild lesions at the place of inoculation and few acid-fast bacilli. The changes in the internal organs, however, were comparatively pronounced. From these experiments the impression was gained that the lesion takes place on account of the injected lepra bacilli, but in the course of time the bacilli become few and in consequence the lesion regresses. Therefore inoculation to animals may be used, besides culture, for differentiation of bacilli of leprosy from those of tuberculosis.

—H. W. W.

SATO, M. Impfversuche der Rattenlepra auf Huhn. [Inoculation of rat leprosy in the hen.] Trans. 10th Meet., Japanese Lep. Assoc. La Lepro 9 (1938) suppl. 56 (abstract).

[This is a restatement of a report presented elsewhere—see THE JOURNAL 7 (1939) 306—the present abstract dealing mainly with the results in the hen.] After inoculations into the comb and breast muscle there was, besides striking nodule formation at the points of injection, endophlebitis with bacilli in some of the inner organs. Even after two passages nodule-formation still occurred, especially in the comb, but the condition decreased in intensity, and clearly lepromatous lesions in the inner organs (especially the spleen and liver) such as have been reported by Ota and Sato were not seen. Aside from the rat and mouse, the only other animal in which transferable lesions occurred was the monkey.—[From abstract.]

ICHIHARA, T. AND ICHIOARA, T. Ueber die Pathogenität der Rattenlepra-bazillen gegen die Maus. [On the pathogenicity of the rat leprosy bacillus for the mouse.] Trans. 10th Meet., Japanese Lep. Assoc. La Lepro 9 (1938) suppl. 56-57 (abstract).

From the literature it appears that the mouse is highly resistant to the leprosy bacillus, and several workers who got negative results are cited, but other authors mentioned have reported positive inoculations. This leads to the idea that the difficulty may be due to varying degrees of pathogenicity for the mouse on the part of different strains of the organism. In an investigation of the matter with three strains that in the rat show no noteworthy differences in this respect, it was found that they definitely vary in their pathogenicity in the mouse.—[From abstract.]

SATO, Y. Medikamentöse Behandlung der Rattenlepra (Zweite Mitteilung). [Medical treatment of rat leprosy.] Trans. 10th Meet., Japanese Lep. Assoc. La Lepro 9 (1938) suppl. 56 (abstract.)

The present report deals chiefly with the use of prontosil in rat leprosy. Doses of 0.1 cc. of the solution were given to 7 white rats subcutaneously every second day for a month, beginning on the 35th day after inoculation; none showed any difference from untreated controls. Fessal was also without benefit.—[From abstract.]

CHORINE, V. Essais de traitement de la lèpre murine. [Attempts at treatment of rat leprosy.] Bull. Soc. Path. exot. 32 (1939) 587-591.

Results were negative with glucinium, yttrium (oxides), bismuth ("quinby"), rubidium (iodide), zirconium (oxide), mercury (mercurochrome), thallium (oxide). The action of uranium, used as the insoluble oxide suspended in

olive oil, is very interesting. In strong doses (4 to 5 mgm.) the rats are killed, the substance being very toxic. In lower dosage (2.5 mgm.) they resist for a greater or lesser time; the toxicity is evidenced by marked renal lesions. At the same time the lepromas soften their content is eliminated, and the intensity of the infection is enormously diminished. Bacilli taken from rats that have received strong doses are dead, reinoculation into new animals giving negative results, but weak doses of the uranium (0.5 to 10 mgm.), which are well supported for a long time—at least for 10 months—are without effect. —ET. BURNET

HATTA, S. Experimental study on the heredity of leprosy disposition by means of rat leprosy. Trans. 10th. Meet., Japanese Lep. Assoc. *La Lepro* 9 (1938) suppl. 57-58 (abstract).

Experiments failed to show any differences of susceptibility in young rats, of whose parents one or the other or both were leprosy. Spontaneous infection of young rats kept with their leprosy parents did not occur.—[From abstract.]

MARCHOUX, E. AND CHORINE, V. Mode de pénétration des bacilles de Stefansky au travers de la peau fraîchement épilée. [Mode of penetration of the Stefansky bacillus through freshly depilated skin]. *Ann. Inst. Pasteur* 63 (1939) 101.

Skin freshly depilated and infected by applying to it, by a compress, a suspension of bacilli was examined by tangential sections. It was found that the infection was produced only by means of a lesion of the torn bulb, that the bacilli entered through the open canal of the hair. In depilation of the rat tearing of the bulb is produced quite rarely. In man the hairs are removed with the bulb more frequently, and the infection by that route would thus seem to be more easy. —ET. BURNET

COWDRY, E. V., RAVOLD, A. AND PACKER, D. M. Physical and chemical properties of rat leprosy bacilli. *Proc. Soc. Exper. Biol. & Med.* 41 (1939) 341-345.

Masses of Stefansky's bacilli were gathered from infected tissue by applying pressure with subsequent grinding and centrifugation of the extracted cells and juices. On microincineration the bacilli gave little or no mineral residue. When subjected to ultraviolet light the cells fluoresced, the color faintly white with a green tinge. This is a preliminary study. —M. H. SOULE

CHABAUD, A. Essais de traitement de la lèpre murine. [Attempts at treatment of rat leprosy. *Bull. Soc. Path. exot.* 32 (1939) 591-592.

The author has employed aqueous solutions of the extract (essences) of cypress, of coloncoba, and of turpentine obtained from the juniper tree; they had no effect, even after prolonged treatment with large doses. Borneol (camphyl alcohol, synthetic Borneo camphor) in aqueous solution, of which 180 cc. was given in 8 months, seemed to hold the infection in check for six months, after which extremely rapid generalization occurred. —ET. BURNET