

## CURRENT LITERATURE

To take due notice of the current literature of leprosy is one of the most important objectives of the JOURNAL. For the benefit of readers to whom medical libraries are not readily accessible it is intended that, so far as possible, abstracts of the more important articles shall be sufficiently full and complete to afford a clear understanding of them, rather than merely of the nature of their content.

The Contributing Editors are depended upon primarily to provide these abstracts. However, since authors' abstracts are generally to be preferred to those prepared by others, readers are invited to submit abstracts of recent papers or reports written by them which have been published elsewhere.

BOULNOIS. Traitement indigène de la lèpre par l'écorce d'un *Cynometra* en usage chez les Guérés de la région de Touléfleu (Côte d'Ivoire). [Native treatment with the bark of a *Cynometra* in the Ivory Coast.] Rev. Botan. appl. et Agric. colon (1932) June.

The bark of a legume, *Cynometra vogelii*, common in certain regions of the Ivory Coast in the neighborhood of watercourses, is employed by the natives in the treatment of leprosy. —M. LEGER (translated).<sup>1</sup>

FERRÉ, M. Préparation anti-lépreuse à partir d'huiles de *Caloncoba* du Cameroun. [Antileprosy preparations from caloncoba oils from the Camerouns.] Ann. Méd. Pharm. colon. 31 (1933) 78.

Preparations of the oils extracted from *Caloncoba glauca* and *C. welwitschi* from the Kribi region were employed. The formula used was: sodium caloncobate, three-fourths saturated, 10 gm; antipyrin 25 gm; saccharose 47 gm; distilled water to 1,000 cc. Doses of 10 cc. for adults were injected every two or three days, without inconvenience. —M. LEGER (translated).

RAYBAUD, A. Drogues végétales employées au Brésil contre la lèpre. [Drugs used in Brazil for leprosy.] Marseille Méd. (1932) 392, Sept.

The interesting facts contained in this report are taken from an article published in *The Prescriber*, by Freise Freid. The drugs used are: *Carpotroche brasiliensis*, a well-known flacourtiacée; *Casearia silvestris*, flacourtiacée; *Bursera leptophloeos*, burseracée; *Hancomia minor*, apocyanacée; *Rhizophora mangle*, rhizophoracée; *Cissampelos ovalifolia*, ménispermacée; *Anchietea salutaris*, violacée; *Urostigma cystopodium*, urticacée. For external application only, the

<sup>1</sup>[This and the following abstracts by the late Dr. Leger were received shortly before his death last year.—EDITOR.]

Anti-leprosy preparation from  
caloncoba oil in Cameroun

following are also used: *Johannesia princeps*, euphorbiacée; *Lucuma glycyphoea*, sapotacée; *Davilla brasiliensis*, dilleniacee; *Cuscula racemosa*, convolvulacée; *Argemone mexicana*, papavaracée; *Bowdichtia major*, légumineuse. As Raybaud says, it may be that a true specific for leprosy will perhaps be found some day in a drug known only to the natives of the equatorial forest.

—M. LEGER (translated).

ORLANDINI, P. Traitement de la lèpre. Marseille Méd. (1933) 232, Aug.

Having in mind the treatment recommended by Hamsah, which consisted of a mixture of thymol and codliver oil, the author at Shanghai treated patients in the manner described. For two weeks out of three he gave, on the first day: morning, 0.5 gm. each of thymol and camphor, and evening, 0.5 gm. terebinth; on the second day: morning, a tablespoonful of glycerine in water and 5 gm. of menthol. Codliver oil was administered during the entire time.

—M. LEGER (translated.)

SASPORTAS, L. La lèpre en Algérie. L'Hyg. Soc. 4 (1932) 1740.

It is believed that the number of cases of leprosy existing today in Algeria does not exceed 15, while in 1923, at the time of the Strasbourg conference, there were according to Montpellier some 250, of which 100 were Spanish.

—M. LEGER (translated).

GATÉ, J., DEVIC, MICHEL AND CHAPUIS. Un cas de lèpre autochtone. [An autochthonous case.] Lyon Méd. 152 (1933) 334.

This is a report of the case of a woman who was infected in France through contact with her sister, who had had ulcerating nodular leprosy and who had recently died in the asylum where she had been isolated. This sister also had never been out of France, and had denied ever having had contact with any known case of leprosy.

—M. LEGER (translated).

CORNET, E. Un cas de lèpre nerveuse oculaire. [A case of ocular neural leprosy.] Bull. Soc. Méd. Chir. Indochine. 10 (1932) 847.

This is a record of a case followed for two months. The ocular lesions were much ameliorated by krabao (*Hydnocarpus anthelmintica*).

—M. LEGER (translated).

MONTEL, R. Les enfants des lépreux. [The children of lepers.] Rev. Colon. Méd. Chir. (1933) 322, Oct. 15.

The author points out that among the facts indicating the contagiousity of leprosy are (1) the diminution of fecundity of lepers, (2) the rapid extension of the disease under conditions excluding the factor of heredity (as in Hawaii, New Caledonia, the Marquisas, and British Guiana), (3) the diminution or disappearance of the disease where it would be expected to increase if it were a hereditary disease, and (4) the results of separating the children of lepers from their parents at the time of birth. These children are especially liable to the infection; the author found among 100 of them 15 in which the bacillus was found or had been found, 3 others that were clinically infected, and 24 that were suspected of the infection. The separation of children should always be

advised, but this should be accomplished by persuasion and not by force. There should be set up institutions properly equipped for the artificial feeding of young infants. Precautions should also be taken in leprosy countries for the protection of children and adolescents of nonleprosy parents. For treating children, who react quite rapidly, Montel advises the use of the total soaps of chaulmoogra by mouth (method of Guilherm), and for injections the colloidal solution of chaulmoogra and the Mercado mixture (chaulmoogra oil, 40, camphorated oil 40, resorcin 3).

—M. LEGER (translated).

LAIGRET, J. Sensibilité de l'homme lépreux au bacille de la lèpre murine. [Susceptibility of the human leper to the bacillus of rat leprosy.] Arch. Inst. Pasteur Tunis 21 (1932) 290.

The rat, susceptible to the bacillus of Stefansky, seems not to be affected by that of Hansen. No attempt had been made to inoculate a human being with rat leprosy until the author tried it, in a man with both skin and nerve lesions. The inoculation was followed by an increase of the acid-fast bacilli *in situ*. These did not have the appearance of degenerated forms, but presented an appearance worthy of special note. There were found: (1) small forms recalling the "pulveriform" type observed by Marchoux in a leper from the Antilles, with which he was able to infect rats; and (2) regularly arranged globi identical with those of the Hansen bacillus. The lesions could not be reinoculated from the man to rats. In the third month the lesions took on a manifestly invasive character. Intensive treatment by chaulmoogra esters interrupted this.

—M. LEGER (translated).

BERNY, M. Création et organisation d'un village de lépreux au Moyen-Congo. [Organization of a village of lepers in the Middle Congo.] Ann. Méd. Pharm. colon. 31 (1933) 68.

The author grouped in a village (to which he gave the name Hansen), about 4 kilometers from Nola, 40 patients with their nearest relatives, making a population of about 100 people. This was done by persuasion, without any coercion, by demonstrating the benefits of treatment and the better conditions of life in the new village than in those in which they were living. The inmates were furnished the rations necessary to subsist them until the development of their own farms, for which they were given the seeds which would permit them to meet their own needs. The success obtained shows the influence which the colonial physician can exercise if he knows the mentality of the natives and can gain their confidence.—[From abstract in *Bull. Mens. Off. Internat. d'Hyg. publ.* 26 (1934) 1139.]

LOWE, J. Studies in rat leprosy. Indian Jour. Med. Res. 22 (1934) 187.

Many acid-fast bacilli, either living or dead, can persist for many months and produce in the tissues a certain degree of granulomatous change which may be mistaken for rat leprosy. Only Stefansky's bacillus produces a steadily progressive and finally fatal infection. The author failed to produce rat leprosy by injection of the cultures isolated by Uchida and by Cilento and North. Failure also attended efforts to grow the organism by the methods recommended by Ota and Asami, Walker and Sweeney, Soule and McKinley, and McKinley

and Verder, and also to detect a filtrable form of the organism as reported by Markianos. Sodium hydnocarpate, even in 5 per cent solution, has little or no bactericidal effect on the organism of rat leprosy. The pathology of experimentally induced rat leprosy is described and discussed fully and it is concluded that the disease is essentially an infection of the reticulo-endothelial system.

—[AUTHOR'S ABSTRACT.]

LOWE, J. A note on the action of chaulmoogra (hydnocarpus) preparations on *M. leprae muris*. Lep. in India 6 (1934) 79.

This paper discusses critically the work of Walker and Sweeney who, using cultures of acid-fast organisms including a supposed culture of *Myco. leprae muris*, found that sodium hydnocarpate in dilutions up to 1 in 75,000 inhibited growth and made subculture impossible. The author treated emulsions of bacilli obtained from infected rats with solutions of sodium hydnocarpate of varying strengths for varying periods and injected the treated bacilli into rats. He found that even treatment by 5 per cent solutions for 20 hours did not kill all the bacilli, for injection of the treated bacilli into rats was followed by the development of generalized rat leprosy, though in some cases this development was somewhat retarded. It is concluded that sodium hydnocarpate has little or no direct bactericidal action in vitro on the bacillus of rat leprosy.

—[AUTHOR'S ABSTRACT.]

LOWE, J. A note on the staining of *M. leprae* in tissue sections. Indian Jour. Med. Res. 22 (1934) 313.

*Myco. leprae* in paraffin sections is less acid-fast and much less alcohol-fast than in smears. This is attributed to changes produced by fixation of the tissue. However, by suitable methods good staining can be obtained, but it is advisable to avoid entirely the use of alcoholic solutions in decolorizing, counterstaining and dehydrating. It is recommended that the staining be done in the cold with Kinyoun's carbol-fuchsin for half an hour, decolorizing in aqueous solution of acid, counterstaining with alcohol-free haematoxylin, and blotting with filter paper and drying quickly in air instead of dehydrating with alcohol.

—[AUTHOR'S ABSTRACT.]

MUIR, E. The relationship of skin and nerve leprosy. Indian Jour. Med. Res. 22 (1934) 383.

The writer compares the clinical and histological findings made in a macule of neural leprosy with those made in a macule of "skin" leprosy. The neural type of macule is associated with a marked cellular reaction to a small number of bacilli, with the production of a characteristic granulomatous change in the skin and the nerves supplying it. In cutaneous leprosy the number of bacilli is far greater, the degree of cellular response is much less, and the granulomatous change is somewhat differently distributed and of a different character, there being no giant cells and no tendency to caseation. He correlates these differences with differences in the results of the intradermal leprolin test, and concludes that the factor which determines the type of lesion is the resistance of the patient as evidenced by the degree of cellular response to a given dose of inoculated bacilli. There is little or no evidence to support the

idea of a neurotropic strain of organism as causing nerve leprosy. The author stresses the importance of differentiating between neural cases, resistant, and cutaneous cases, non-resistant, in diagnosis, prognosis, prevention and treatment.

—J. LOWE.

SANTRA, I. A comparison of leprosy in the Philippines and in India. *Lep. in India*. 6 (1934) 179.

This article contains a long discussion of what was seen during the author's recent visit to the Philippines. He compares leprosy as he saw it there with the disease as he knows it in India and concludes that there is no appreciable difference in its manifestation in the two countries. He thinks that the differences that have been reported by various workers are only apparent and not real, and are due to the fact that observers have not studied the disease under conditions which allow any true comparison to be made. When studied under similar conditions in these two countries the clinical manifestations are found to be very similar.

—J. LOWE.

TIMOFEEVSKY, A. D. Explantationsversuche von Leprosen Gewebe. (Explantation studies with leprosy tissues.) *Arch. f. Exper. Zellforschung*. 9 (1930) 182-202.

This author claims to have succeeded in making tissue cultures from fragments of leprosy nodules from two patients. Maximov believes that fibroblasts are fully developed cell elements, but Möllendorff considers that fibroblasts may develop into macrophages or granular leucocytes. To test these theories Timofeevsky excised nodules proven by section to be typical lepromata, and planted fragments of these, chiefly in heparinized plasma from both men and rabbits (usually a mixture of equal parts of each), and human-embryo extract. The cultures grew well for a time but after two or three weeks gradually died; the longest time tissue was kept alive was forty-five days. The following is from a translation (by Dr. R. J. Gittins) of the author's conclusions.

The planted fragments grew well, giving chiefly (a) macrophages, sometimes in forms resembling fibroblasts ("fibroblast-like" cells), and (b) fibroblasts. While macrophages and fibroblast-like cells showed large numbers of bacilli in their cytoplasm, the fibroblasts showed none. In the second week there occurred, both in the original fragments and in the zone of proliferation, a general change of fibroblast-like cells into macrophages under the influence of leprosy bacilli, which increased greatly in the cell cytoplasm at this time. The fibroblasts remained free from bacilli, retained their morphological characteristics, and did not change into wandering cells, in harmony with Maximov's teaching. The fibroblast-like cells were regarded as histiocytes or reticulo-endothelial elements. Virchow's lepra cells developed from ordinary macrophages. Both in the fragments and in the proliferation zone these cells were not permanent elements but underwent rapid degeneration. Sometimes in the proliferation zone microscopic leprosy nodules developed, consisting of collections of epithelioid cells full of bacilli. Giant cells were often formed by coalescence of several epithelioid cells. The bacilli apparently had no definitely toxic effect on the cells, which increased in spite of the bacilli in them. The decline of tissue growth was attributed to the great increase of bacilli, in both the cells and the culture medium. This increase destroyed the cytoplasm of the cells and produced a deterioration in the medium. After the tissue cultures had died the

bacilli continued to increase slowly without forming colonies visible to the naked eye. Fresh cultures of normal human tissue and of leucocytes were infected with bacterial emulsions from the old cultures. Growth occurred in the protoplasm of the cells and somewhat later in the medium.

—J. LOWE.

WAYSON, N. E. Leprosy with tuberculosis in Hawaii. *Publ. Health Rep.* 49 (1934) Oct. 12.

The intradermal tuberculin reaction was positive in 36 per cent of 150 leprosy patients of all ages, while in 4,000 nonleprosy public school children of the same racial and economic origins it was positive in 60 per cent. However, careful study of the leprosy patients by clinical, x-ray and laboratory methods revealed only 19 per cent with findings presumptive of tuberculosis. Of the 57 patients between 10 and 19 years of age, 16 per cent showed such findings; of the non-leprosy children only 2 per cent. Of 94 leprosy patients given the tuberculin test annually, 18 showed complete changes from negative to positive or vice versa, and 12 others showed definite and marked variations in the strength of the reaction. The average annual mortality from tuberculosis for 3 years among an average population of 155 patients was 12 times that of the comparable normal population. Among 150 patients under observation for from several months to 4 years, 62 developed acute leprosy reactions. Fifty of these (70 per cent) showed a positive tuberculin reaction or other evidence of tuberculous infection; and the course of leprosy, subsequent to reaction, in these 50 was considered to be prone to more active progression. In discussing the low frequency of skin reactions and the fluctuation in their intensity the probabilities of disturbances in lymphatic drainage, in circulation, and in innervation are considered, but none are believed adequate to explain all cases. The number of patients studied is too small to permit sweeping conclusions, but the findings are suggestive.

—[AUTHOR'S ABSTRACT.]

BLACK, S. H. AND ROSS, H. Blood cholesterol in leprosy. A study of the total and free cholesterol, cholesterol esters, van den Bergh reaction and the complement fixation test. *Publ. Health Rep.* 50 (1935) 50-59.

Tests were made of 200 patients classified according to their leprosy activity. There was very little difference in the total cholesterol in the groups that were improving, those who were stationary and the group whose physical condition showed retrogression. However, the percentage of cholesterol esters was increased in 14 of the 78 patients showing improvement, 25 of the 71 classified as stationary, and 38 of the 51 showing retrogression. The van den Bergh reaction was positive in 138. The qualitative analysis showed possibility of early hepatic lesions, while the quantitative analysis indicated latent jaundice. Complement fixation (kind of antigen or purpose of test not mentioned) was positive in 83 patients.

—J. G. WOOLEY.

COCHRANE, R. G. The leprosy situation in England. *Med. Press and Circ.* (1934) 306.

This is an expansion, containing details of interest to the local profession not familiar with leprosy, of an article which appeared in the last issue of this *JOURNAL* [3 (1934) 71].

—H. W.W.



WELCH, T. B. Some considerations on diagnosis in leprosy and on the treatment of lepers. *East African Med. Jour.* 11 (1934) 76.

This paper, read at Dar es Salaam, is a resumé of the views of the etiology (rather than diagnosis) and treatment of leprosy, strictly according to familiar British practice. —H. W. W.

CHIYUTO, S. Early leprotic changes in children and their bearing on the transmission and evolution of the disease: *Mo. Bull., Bu. Health (Manila)* 13 (1933) 5.

This is a clinical and histopathological study of 40 children, varying in age from two and a half to twenty years, whose parents were both leprosy except one whose father only was affected; 32 were considered nonleprosy while 8 were clinically suspicious when admitted to the welfare institution. The constant and common presence of depigmented macules, whether hazy or clearly defined, histologically showing perivascular round-cell infiltration or tuberculoid changes, confirms the findings of other observers as regards the depigmented macule except that in these cases multiple macules appeared simultaneously. Also, minute pinkish papulo-vascular eruptions simulating "goose flesh" were found in 40 per cent of the cases, and these were considered to be leprotic histologically. The author believes this condition corresponds to lepra reaction among confirmed lepers, though localized and in a milder form. No leprosy bacilli were found, except suspicious acid-fast granules in one case. The theory of a nonacid-fast or "virus" stage in the life cycle of the bacillus is believed to be supported by the results of this study. —J. O. NOLASCO.

DES ESSARTS, J. Q. AND LEFROY, G. Notes sur l'histologie des macules anesthésiques de la lèpre. [*Histology of anesthetic macules.*] *Bull. Acad. Méd.* 111 (1934) 532.

— Étude histologique des lésions maculo-anesthésiques de la lèpre. *Bull. Soc. Path. exot.* 27 (1934) 311.

— Intérêt de l'examen histologique dans le diagnostic des lésions maculo-anesthésiques de la lèpre. *Rev. col. Méd. et Chir.* (1934) No. 61, July 15.

Because of the difficulties of diagnosis of those cases, often seen in endemic countries, which present only pale patches with more or less sensory disturbance but which usually are negative for bacilli, the authors have examined biopsy specimens from nearly a hundred Negro and mixed-blood patients in Guadeloupe, and here summarize the findings in 39 cases in which the diagnosis was unmistakable. The epidermis is usually thinned and more or less flattened, an important feature, and the pigment is decreased. In the corium are varying numbers of circumscribed cellular foci, the elementary lesions of the macules; these are round, oval or linear, showing a predilection for the sweat glands though often related to hair follicles; the nerve branches are generally not involved. They are composed chiefly of epithelioid cells, contain numerous capillaries, and show no necrosis or inflammatory reaction, though there are generally some lymphocytes, rare plasmocytes, and some fibroblasts; sometimes there are large giant cells with nuclei disseminated or grouped, sometimes peripheral as in the Langhans cell. Bacilli were found in less than a fourth

of the cases studied, in only 18 of the 39 of this report; when present they varied from very rare to extremely numerous. On the whole the findings are similar to those of Darier reported at the Berlin Conference in 1897. It is concluded that the histopathology is sufficiently specific to serve as confirmation of a clinical diagnosis.

—H. W. W.

[This description should be read in conjunction with the authors' own summary in the following abstract.—EDITOR.]

DES ESSARTS, J. Q. AND LEFROU, G. Note sur le diagnostic différentiel entre les nodules élémentaires lépreux et tuberculeux dans les lésions cutanées. [Differential diagnosis of elementary leprosy and tuberculous lesions in the skin.] *Bull. Soc. Path. exot.* 27 (1934) 706.

The authors deal with the differential diagnosis of cutaneous tuberculosis in comparison with the changes which they found in leprosy macules, which they now summarize essentially as follows:

In the neuro-leprides they found, in nearly all cases, focal lesions consisting essentially of perivascular infiltrations of "conjunctive" and lymphoid cells, with rare Virchow cells, among which are sometimes multinuclear giant cells. These formations contain, in less numbers, the same cytological elements as the leproma, differing only in their more elementary structure, their reduced volume, their elective localization around blood vessels and the rarity of bacilli. Usually the special aspect of these lesions, together with clinical findings and history, may confirm the diagnosis of leprosy where it is endemic.

In the depigmented patches of nerve leprosy these lesions sometimes affect a follicular organization with giant cells of the Langhans type surrounded by epithelioid cells and some lymphocytes. This arrangement, which recalls that of the tuberculous follicle, has been reported by various authors, who have named it the "tuberculoid of leprosy." Out of 95 biopsies of neuro-leprides this tuberculoid follicular arrangement was found 12 times; in 3 cases bacilli were found.

The differentiating features between these lesions and the elementary foci of cutaneous tuberculosis are given in parallel columns, too detailed to be reproduced. Distinctions are found in their staining and shape; in their relation to the surrounding stroma, epidermis, hypoderm, and accessory structures; in the arrangement of the cells, features of the epithelioid and giant cells, frequency of lymphocytes, vascularization and caseation; and in the bacteriology, including animal inoculation. Certain difficulties of diagnosis are discussed, and it is pointed out that changes similar to those of the neuro-lepride may be found in certain parasitic and other conditions.

—H. W. W.

LEFROU, G. AND BONNET, P. L'équilibre protéique du sérum sanguin de lépreux. [Serum protein equilibrium in leprosy.] *Bull. Acad. Méd.* 111 (1934) 175; *Bull. Soc. Path. exot.* 27 (1934) 35.

— Les modifications de l'équilibre protéique du sérum sanguin comme élément de diagnostic précoce de la lèpre. [Changes of serum protein equilibrium in the early diagnosis of leprosy.] *Bull. Soc. Path. exot.* 27 (1934) 364 and 491.

Total albumin was estimated by the method of Kayser, serum by that of Howe. In cases of both cutaneous and neural leprosy, untreated and free from



complicating disease, the protein equilibrium is found to be modified from the time of appearance of symptoms. The globulins are increased, the total albumin is sometimes normal and sometimes increased, the serin normal or diminished. The serin-globulin quotient is reversed. It is concluded that in nonsyphilitic subjects with a normal Vernes index; hyperglobulinemia, and reversal of the albumin quotient, the diagnosis is leprosy. With the Vernes index abnormal and the other factors as stated there is a presumption of leprosy. With the Vernes index abnormal or normal but the globulin normal and the albumin quotient not reversed leprosy is absent. —ET. BURNET.

CHORINE V. AND PRUDHOMME, R. Réponse à la note de Lefrou et Bonnet. [Reply to Lefrou and Bonnet.] Bull. Soc. Path. exot. 27 (1934) 633.

The authors' attempt to explain the mechanism of the resorcin reaction on the ground of increase in quantity of euglobulin has pertained only to tuberculosis, leishmaniasis and malaria; they have not investigated leprosy.

—ET. BURNET.

LEFROU, G. AND BONNET, P. Sur l'absence de relation entre la réaction de Vernes-résorcine et le déséquilibre protéique du sérum sanguin dans la lèpre. [Non-relation of the Vernes resorcin reaction and protein disequilibrium in leprosy.] Bull. Soc. Path. exot. 27 (1934) 631.

The Vernes reaction does not demonstrate protein disequilibrium. To demonstrate that it is necessary to employ the classical methods of analytical chemistry.

—ET. BURNET.

MONTESTRUC, E. Lèpre et séro-flocculation de Vernes à la résorcine. [Vernes flocculation reaction in leprosy.] Bull. Soc. Path. exot. 27 (1934) 713.

This reaction is due to a decrease of the serins and unequal increase of euglobulins and pseudo-globulins, the latter being less increased than the former. In leprosy it occurs only in the nodular form of the disease. It is suggested that an increase of the optical index in a case of leprosy may perhaps indicate a tendency to develop that form, and if so that this test should be useful in studying the evolution of the disease.

—ET. BURNET.

GILLIER, R. Formol-gélification des sérums lépreux. [Formalin coagulation of leprosy sera.] Bull. Soc. Path. exot. 27 (1934) 707.

The author tested 18 sera of lepers (one syphilitic), with 30 syphilitic sera for comparison, using formalin undiluted (40 per cent) and diluted in water and saline. With pure formalin the leprosy sera coagulated firmly, as did the syphilitic sera, but somewhat more rapidly; with the 1:20 solution in 7 per cent saline there was at most only thickening of the sera, but this occurred in the leprosy sera considerably more rapidly than in the syphilitic; with water-diluted formalin there was no notable difference. The author concludes that in the country where he works (kala-azar and yaws evidently absent) formalin coagulation in a Wassermann-negative serum is presumptive of leprosy.

—ET. BURNET.

LEFROU, G. AND BONNET, P. La cholestérolémie chez les lépreux de la Guadeloupe. [Cholesterolemia in leprosy.] Bull. Soc. Path. exot. 27 (1934) 627.

Cholesterolemia with its different elements, free and esterified cholesterol, is too greatly influenced by factors which are not understood to permit drawing any conclusions about its variations. The study of this question in leprosy has not as yet given any practical results. —ET. BURNET.

PERROT, EM. Les espèces chaulmoogriques et, en particulier, le krabao indochinois pour le traitement de la lèpre. [Chaulmoogra, especially the Indo-Chinese krabao, in treatment.] Bull. Acad. Méd. 112 (1934) No. 37.

This is a note on the resources of the French colonial domain as regards *Hydnocarpus wightiana* (French India), *H. anthelmintica* (Indo-China), *Oncoba echinata* (Guiana) and *Caloncoba* (Cameroon). —ET. BURNET.

SÉZARY, A., LEVY, G. AND VAUDREMER, A. L'action thérapeutique du vaccin antiléproux de Vaudremer. [Therapeutic effect of Vaudremer's anti-leprosy vaccine.] Bull. Soc. Méd. Hôpit. Paris 50 (1934) No. 27.

The Vaudremer vaccine consists of iodine-sterilized cultures of the forms obtained by Vaudremer by sowing leprosy bacilli in the fluid of a culture of *Aspergillus fumigatus*. To two previous observations (one by Touraine and Solente) the authors add three new ones. In the course of febrile periods the vaccine seems to affect certain manifestations which are perhaps of allergic nature, namely, edema, pain, iritis. It did not stop the evolution of the disease. "Medicaments of the most diverse kinds may affect certain manifestations of leprosy." —ET. BURNET.

MONTEL, L. R. ET ALS. Traitement de la lèpre par le bleu de méthylène en injections intraveineuses. [Treatment by methylene blue intravenously.] Bull. Acad. Méd. 112 (1934) 208.

—3° Note sur les injections intraveineuses de bleu de méthylène dans la lèpre: posologie, tolérance, technique. Bull. Soc. Méd. Chir. Indo-Chine 12 (1934) No. 5.

The treatment consists of intravenous injections of a strictly neutral 1 per cent solution of methylene blue, sterilized by heating for an hour at 80°C. for three days. The injections are made slowly, the dose at first being 5 cc., increasing to 30 or 40 cc.; the average effective dose is 20 cc. It is recommended that injections be made 3 times a week for 5 weeks, or if there is intolerance 2 times a week for 10 to 12 weeks, with a 3-week rest period after each such course. The treatment can be continued for months and probably for years. There seems to be an advantage in combining it and treatment with chaulmoogra derivatives.

It is necessary, if one desires to use this method, to read these reports in full, at least the comprehensive one last referred to above; one should understand the precautions to be taken, the difficulties met, and the results to be expected. Two tables summarize one hundred cases treated. In general the treatment is without danger. The author seems to be an enthusiastic optimist but he re-

cognizes the limits of his experience, which is too recent to permit a definitive judgement in the matter; only time will permit this, he states. "No treatment now known is capable of producing so rapid an improvement..." Lesions of all kinds, fever and lepra reaction, all seem to respond to methylene blue, but there are exceptions. He cannot yet explain the action of methylene blue on the tissues and the bacilli, but he says that the dye is fixed only by the infiltrated leprous tissues.

—ET. BURNET.

MONTEL, R. Le traitement de la lèpre. *Rev. colon. Méd. et Chir.* (1934) No. 63, Sept. 15.

The author, who agrees with the current "liberal" views on prophylaxis, distinguishes four phases in the evolution of leprosy that require variations in treatment. He would reserve intravenous injections for the third phase, that of generalization of lesions. His preferences (which will not be shared by all) are the collobiasis, a proprietary chaulmoogra preparation, and methylene blue by the intravenous route, which he himself has introduced for leprosy treatment. He only mentions other methods, rejects the use of potassium iodide, and gives much importance to general treatment. (It is remarked that alepol should not be classed with the esters of chaulmoogra oil and that antimony potassium tartrate is not employed as a remedy for leprosy itself but for lepra reaction—lepra fever.) Intradermal injections are dealt with in very summary manner. Finally, the subject of preventive treatment of infants is discussed; he recalls the experience of Rodriguez, according to which chaulmoogra treatment has no preventive effect.

—ET. BURNET.

MONTEL, R. AND TRUONG VAN QUE. Le "Rouge Neutre" en injections intraveineuses dans le traitement de la lèpre. [Treatment by neutral red intravenously.] *Bull. Soc. Path. exot.* 27 (1934) 715.

Neutral red acts like methylene blue but more freely. It seems to enhance the action of the methylene blue when this is injected after the red.

—ET. BURNET.

AFANADOR, A. Traitement de la lèpre par les injections intraveineuses de bleu de méthylène. [Treatment by methylene blue.] *Bull. Soc. Path. exot.* 27 (1934) 805.

The smallest infiltrated lesions of the skin are marked by coloration, but not the simple atrophic and anesthetic areas. In general the small miliary lepromas which are effaced during the course of the treatment reappear when the injections are suspended, though the patient remains colored. One patient after having received 200 cc. of the drug had a febrile lepra reaction; she had been given a preparation sterilized by autoclaving. (Montel recommends fractional sterilization.)

—ET. BURNET.

BALIÑA, P. L. [Leprosy in Argentina.] *Semana Med.* (1934) No. 36.

Leprosy has been progressively increasing in Argentina. Whereas in 1906 only 724 cases were known, the last report by the National Department, in 1933, gave 2,970 cases, and many others have certainly not come under observation. The author ventures the opinion that there may be from six to eight thousand in the country. The author is convinced that the disease is directly

or indirectly transmissible from one person to another. Half of the number of cases will show excretion of leprosy bacilli (open lesions) while the other half will not show bacilli (closed lesions). The latter need not necessarily be quarantined, but may be treated in public dispensaries though always under strict control.—[From abstract in *Urol. and Cutan. Rev.* 38 (1934) 824.]

MONTAÑES, P. La intradermorreacción con el bacilo de Hansen. [Intradermal reaction with the leprosy bacillus.] *Arch. Med. Cir. y Espec.* 37 (1934) 389-416.

Montañes says that it is possible to obtain pure sediments of *Mycobacterium leprae* by homogenization of lepromas triturated and treated with 10 per cent Koch's solution. By means of the intradermal reaction with emulsions of leprosy bacilli the author obtained 100 per cent of positive results in cured lepers and in patients with various diseases but without leprosy. In a group of 116 lepers the intradermal reaction, performed with the same emulsion, gave 14 per cent of positive results. The older the leprosy the greater the number of positive results. The percentage of positive results among lepers is greater in cases of the pure form of nervous leprosy, and also in cases of mixed forms in which the degree of nervous invasion is intense, than in other forms of leprosy. The intradermal test was followed by positive results in 80 per cent of the cases in which the disease was inactive and the presence of bacilli in the nasal mucus could not be demonstrated. The author considers the positivity of the intradermal reaction of great value, especially in the case of patients who are going to be discharged as cured.—[From abstract in *Jour. American Med. Ass.* 103 (1934) 77.]

COSTADONI, A. Considerazioni sulla terapia della lepra. Ricerche sul sangue e sulla istologia del leproma prima e dopo il trattamento. [On the therapy of leprosy, blood findings, and histology of the leproma before and during treatment.] *Osp. maggiore* 22 (1934) 99-109.

This article reports the results of treatment at the dermatological clinic at Milan. Blood findings in five cases of leprosy showed a diminution of red cells and hemoglobin, some anisocytosis, poikilocytosis and immature cells. During the intermittent periods of improvement there was a corresponding improvement in the blood picture. Searching for the bacilli in venous blood laked with acetic acid he found them only once, this during a febrile exacerbation. In the peripheral capillary blood, however, they are more abundant and more easily demonstrated. Blood cultures on Löwenstein's medium proved negative. Positive reactions with the Wassermann and other serum tests used were not vitiated by chaulmoogra treatment, and were dependable. Biopsies of lesions taken before and during treatment showed that treatment caused almost complete disappearance of the infiltration, and the bacilli underwent granular degeneration.—[From abstract in *Urol. and Cutan. Rev.* 38 (1934) 511.]

PALDROCK, A. AND POOMAN, A. Die Beeinflussung der Leptraerreger durch Natriumthiosulfat. [The influence of sodium thiosulphate on the leprosy bacillus.] *Derm. Wochenschr.* 40<sup>98</sup> (1934) 417.

Experiments *in vitro* show that sodium thiosulphate has the property of changing the leprosy bacillus from Gram-positive to Gram-negative. It has

also the effect of causing the bacilli to take on a chain-form arrangement. On these grounds the authors propose the therapeutic use of this chemical compound in leprosy.—[From abstract in *British Jour. Derm. and Syph.* 46 (1934) 331.]

DUVAL, C. W. AND HOLT, R. A. Failure to enhance the growth of *B. leprae* by Wherry's gaseous method ( $\text{CO}_2\text{O}_2$  environment). *Proc. Soc. Exper. Biol. and Med.* 31 (1934) 453-455.

Duval and Holt record failure to confirm the recent claims of Wherry, and of Soule and McKinley, that an environment of  $\text{CO}_2$  and  $\text{O}_2$  gases enhances the growth of *Myco. leprae*. They could obtain no evidence of any influence of these gases on the growth of the bacilli.—[From abstract in *Trop. Dis. Bull.* 31 (1934) 552.]

HOLT, R. A. Studies with chick embryo tissue in cultivation of *B. leprae*. *Proc. Soc. Exper. Biol. and Med.* 31 (1934) 567-569.

Holt records that she could obtain no clear evidence of any multiplication of the leprosy bacillus in chick embryo tissue cultures, as claimed by McKinley and Verder, and points out the difficulties in estimating whether any actual multiplication of the organisms has taken place, as a result of concentration of them with the autolysing of the leprosy tissue present, and other fallacies. She even found evidence of degeneration and loss of viability after four months in such culture media, and concludes that in her experience chick-embryo tissue emulsified in Tyrode's solution is valueless as a nutritive for the cultivation of the bacillus.—[From abstract in *Trop. Dis. Bull.* 31 (1934) 552.]

HOLT, R. A. Use of living chick embryos in the propagation of *B. leprae*. *Proc. Soc. Exper. Biol. and Med.* 31 (1934) 643-645.

The author reports an attempt to cultivate lepra bacilli from nodules by Goodpasture's method of inoculating incubated fertile hens' eggs upon the chorio-allantoic membrane. She could obtain no evidence of multiplication of the bacillus.—[From abstract in *Trop. Dis. Bull.* 31 (1934) 552.]

HOLT, R. A. Morphological resemblance of the rod-shaped pigment of the chick retina to *B. leprae*. *Proc. Soc. Exper. Biol. and Med.* 31 (1934) 645-648.

Illustrations are given of the microscopical resemblances between the globi of leprosy nodules and the rod-shaped pigment within the epithelial cells of the retina of embryo chicks. They can be distinguished by Ziehl-Neelsen staining.—[From abstract in *Trop. Dis. Bull.* 31 (1934) 552.]

SALLE, A. J. AND MOSER, J. R. Bacteriology of leprosy. II. Growth and staining reactions of organisms inoculated into minced chick embryo medium. *Proc. Soc. Exper. Biol. and Med.* 31 (1934) 725-726.

The authors report that on cultivating acid-fast organisms isolated from human and rat leprosy lesions in fresh tissue cultures and in minced embryo medium, both acid-fast and nonacid-fast organisms are found during the first two days, but the acid-fasts then diminish and nearly disappear by the tenth day. On transferring growths to fresh similar media the same thing is repeated, but this does not occur with numerous other nonacid-fast bacteria on the same media. As both human and rat leprosy behave in the same way they think those infections are caused by the same bacillus.—[From abstract in *Trop. Dis. Bull.* 31 (1934) 553.]

SALLE, A. J. AND MOSER, J. R. Bacteriology of leprosy. III. Growth and staining reactions of acid-fast organisms inoculated into minced animal tissues. *Proc. Soc. Exper. Biol. and Med.* 31 (1934) 727-728.

The authors record the use of minced organs of rabbits, guinea-pigs and rats in Tyrode solution as culture media for leprosy bacilli. They obtained good growths in the two former but not in the rat tissues; in them the organisms lost their acid-fastness in about five days. They therefore conclude that living embryonic tissues are not necessary for obtaining cultures.—[From abstract in *Trop. Dis. Bull.* 31 (1934) 553.]