

CURRENT LITERATURE

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

- 8 [MISSION TO LEPERS.] A Report of the Seventy-fourth Year's Work in Burma, India and Pakistan, from September 1947 to August 1948. Issued by the Indian Auxiliary (1949?).

This report comprises a foreward by the Hon. Secretary in India, Mr. Bailey; reports from the different leprosy homes and hospitals and homes for healthy children of leprosy patients in Burma, India and Pakistan owned, managed or aided by the Mission to Lepers; a report by the Medical Secretary, Dr. Cochrane; statistics of inmates and medical statistics at the end of 1947; a map showing the geographical distribution of the various institutions, together with the number of inmates in each and the name of the cooperating body where any; and finally the financial report. The number of institutions involved is 48, of which 31 are managed directly and 17 are aided by the Mission. The total number of inmates was 10,070—5,265 men, 3,045 women, 901 child patients, and 859 healthy children. The number of inmates under treatment was 8,785, and 12,319 outpatients had been treated during the year. The total expenditure amounted to Rs 1,781,724, derived mainly by contributions from the Mission to Lepers, supplemented by government and local grants; Rs 78,151 had been collected from donations and subscriptions. The medical secretary stressed the point that the problem of relief and rehabilitation has to be solved even if a specific cure for leprosy is found. This report reveals the quality and quantity of antileprosy work being done by this organization, which pioneered in this field and is still the largest single body carrying on such work in this part of Asia.—[From a review in *Indian Med. Gaz.* 84 (1949) 376.]

- 6 [B. E. L. R. A., INDIAN COUNCIL.] The annual report of the British Empire Leprosy Relief Association (Indian Council) for 1948. Press Information Bureau, Government of India, New Delhi, 1949.

This report reveals that the work of the Association has generally been maintained at a satisfactory level. The Government of India has decided to give effect to the recommendation of the Bhole Committee Report regarding the establishment of an All-India Leprosy Research Institute. Dr. Dharmendra, research officer of the association, spent eight months on a study tour in various parts of the United States, Mexico, Argentina, Brazil, the United Kingdom, and Nigeria in West Africa. The research work of the association has as usual been carried out in collaboration with the Endowment Fund of the School of Tropical Medicine at Calcutta and the Indian Research Fund Association. Studies carried on include the therapeutic value of the new sulfone drugs, the correlation of histological and immunological findings with the subsequent course of the disease in selected cases, and the nose and throat lesions of leprosy. A new film entitled "Our Duty" has been completed and is ready for use in antileprosy publicity

work. The provincial reports indicate that steady progress is being made in the Association's activities in the provinces. The important question of isolation of infective cases has received increasing attention.—[From review in *Indian Med. Gaz.* **84** (1949) 362.]

[BRITISH GUIANA] Report of the Director of Medical Services, British Guiana, for the year 1948, by C. R. Subryan, Acting D. M. S. (mimeographed). Supplement: Annual Report of the Mahaica Leprosarium for 1948, by A. L. Relwicz, Acting Medical Superintendent (mimeographed).

This report brings out the fact that systematic school surveys are being continued in British Guiana. The third one was completed during the year, 74 cases being found among 40,224 school children examined [almost 2 per thousand]; all were early tuberculoid, of good prognosis, and all were put under treatment in outpatient clinics. In the three years that these surveys have been conducted 273 infected children have been discovered. A total of 645 are registered for treatment in clinics, 332 in Georgetown and 313 in four other clinics, and there were 1,699 attendances [av. 2.6 per patient]. The total of known cases is 1,172, or about 2.5 per thousand, with 338 patients in the Mahaica leprosarium. The proportions of the different races and nationalities are indicated by the following figures: African, 170; mixed, 51; East Indian, 26; Portuguese, 24; Chinese, 5; European, 2; Aboriginal Indian, 1. —H. W. W.

MALAMOS, B. Tropical diseases in Brazil. *Trans. Roy. Soc. Trop. Med. & Hyg.* **43** (1949) 11-32. (Subheading: Leprosy, pp. 26-28.)

The author had been sent to Brazil by Unesco to study the matter of establishing an International Scientific Institute in the Hylean Amazon. Of the estimated 50,000 cases of leprosy in Brazil, 20,719 were isolated in asylums at the end of 1947. The states with the highest numbers of registered cases were São Paulo with 16,686 and Minas Gerais with 10,588. The percentages of contagious cases varied from 31 in Pará to 80 in Paraná and 88 in Pernambuco. The sex incidence varied considerably in the different states, the male: female ratios varying between 1.1 and 2.5. Symptoms were first noticed between 11 and 30 years of age and in 58% of the Brazilian patients, against between 30 and 60 years for 68% of the foreign ones, attributed to the greater possibilities the Brazilians had of infection in childhood. Some of the asylums are very modern, built on extensive grounds and with opportunities for agriculture, stock-breeding and other activities. —G. O. TEICHMANN

DE KEYSER, L. La lèpre au Moyen-Age en Belgique. [Leprosy in the middle ages in Belgium.] *Rev. Méd. et Pharm.* **4** (1948) 5-27.

Leprosy is undoubtedly the oldest epidemic disease known, as it figures in the Chinese archives of the 27th century before the present era. It was widespread throughout the east and is described in the Leviticus of Moses. It is a mistake to assert, as is often done, that it was the crusades that brought it to Europe. It raged as long ago as 406 B. C. (Herodotus), and description of it is to be found in Celsus, Galen and Aretée de Cappadoce; and in the 4th century measures for isolation and prophylaxis had to be taken. In the 14th century it was in full swing and carried through to the 16th and 17th centuries. The author recalls the leper foundations, their sources of revenue, the rules for admission, and their statutes. Certain

ones, such as that of Grandes Malades at Namur admitted nonleprous pensioners under certain conditions. Data are cited from the documents of the medical examinations to which persons suspected of leprosy were submitted. The number of leper institutions arising in Belgium is estimated at 600-800, and interesting details are given of certain of them and of the measures affecting the free lepers, i.e., those not isolated in leper institutions.—[Abstract by the author, from *Excerpta Medica* 3 (1949) 31.]

6 [EDITORIAL] New developments in the management of leprosy. *Ann. Int. Med.* 30 (1949) 692.

This editorial speaks of the absurdity of comparing demolition of explosives and the handling of leprosy patients as comparable hazards. "Hazard pay" was recommended by the Advisory Committee on Service Pay, in December 1948, for those participating in "glider, submarine rescue, demolition of explosives, handling of lepers, parachute, and experimental diving." The writer believes that most of the progress in leprosy work has been made in the public health field, although he gives three pages out of five to a review of the work done in chemotherapy, with the sulfones as well as chaulmoogra oil. That the Public Health Service is acting in accordance with both scientific knowledge and human feeling in its dealing with leprosy is indicated by three highly significant events that have occurred at the national leprosarium during 1948: For the first time a patient has received a medical discharge while still in the "communicable" stage of the disease, to be treated by his local physician. A patient was discharged as an "arrested" case after six consecutive negative bacteriological tests instead of the routine twelve. The barbed wire was removed from the top of the fence in front of the hospital. —F. A. JOHANSEN

7 CHATTERJI, S. N. Leprosy and divorce. *Lep. India* 20 (1948) 175-179 (editorial).

This is an editorial directed against the proposal to include leprosy as a ground for divorce in the New Hindu Code Bill then before the Central Legislature of India. The author maintains that the proposal is untenable when examined from various aspects, which he discusses. —DHARMENDRA

7 BANERJEE, M. M. Opinion of the Calcutta bar *re* leprosy and divorce. *Lep. India* 20 (1948) 208 (correspondence).

In response to inquiries made by the West Bengal Branch of the British Empire Leprosy Relief Association regarding divorce in leprosy, the Calcutta Bar Association expressed the opinion that leprosy should not be held as a reason for severing the marriage ties. The Hindu texts bearing on the subject are not helpful in the present day contexts. The measure is not justifiable from a humanitarian point of view. Looking at it from the angle of comparative jurisprudence, there is no system to its knowledge which permitted leprosy *simpliciter* to be a ground for divorce.

—DHARMENDRA

7 SEN, P. Leprosy and divorce. *The Statesman*, Aug. 16, 1948; *reprinted in Lep. India* 20 (1948) 207 (correspondence).

In this letter to the editor of a daily paper the writer contends that neither on ground of infectivity nor on that of incurability can leprosy properly be included in the proposed New Hindu Code Bill as a cause for

divorce. He incidentally also mentions that the Hindu law of disinheritance of leprosy persons, as at present in vogue, should also be modified.

—DHARMENDRA

- Roy, A. T. The place of vasectomy in leprosy control. *Indian Med. Gaz.* **83** (1948) 475.

After pointing out the difficulties of preventing child infection by separation of the sexes or by separation of children after birth, where one of the parents is an infected case of leprosy, the author makes a plea for the sterilization of the male partner by vasectomy as a preventive measure for leprosy control. He quotes various authors in support of his plea.

—DHARMENDRA

- SEN, P. Is death administration in leprosy justified? *Internat. Med. Abstr. & Rev.* **5** (1949) 76-79.

Leprosy is a curable disease, but in some of the advanced cases a stage comes when the patient has gone not only beyond hope of recovery but also to a point where life has become a burden beyond endurance, and he may yearn for a speedy release. The question is posed whether in such cases it is not a duty, and an act of mercy, to administer death to those who seek it after existence has become a torture and purposeless. The choice is not between life and death but between two kinds of death, a slow agonizing one or a quick painless one. The traditional notion of a medical man's duty is to cure disease or, if that cannot be achieved, to prolong life as long as possible. But there has crept into medical and lay opinion alike the feeling that one should make the process of dying more gentle and peaceful, even if it does involve shortening of life—a cautious but irresistible tendency to look at life and suffering from a more humane point of view, and to interpret the mystery of the Divine Will regarding disease and death in terms of intellect rather than of emotion. Among believers in the concept of nonviolence in India there are some who see in death administration a final act of mercy, and consider its refusal as an act of cowardice, if not cruelty, on the part of those whom society regards as angels of mercy. The writer does not accept the view that the concept of death administration is born of a lack of regard for fundamental biological law and of a misdirected sentimentality. Involving as it does ethical, moral and sociological principles of such magnitude, it must necessarily arouse widespread controversy. A plea is made for a serious, dispassionate, objective consideration of the matter.

—AUTHOR'S ABSTRACT

- BECHELLI, L. M. & ROTBERG, A. Idade e lepra; estudo dos fatores exposição e resistência. [Age and leprosy; study of the factors exposure and resistance.] *Rev. brasileira Leprol.* **17** (1949) 31-44.

Most workers believe that infection is usually acquired in childhood and puberty, the preponderance of early infections being attributed usually to a special susceptibility of young individuals. However, from epidemiological data, including a comparison of age groups of leprosy persons and the healthy population, the authors think that a special susceptibility of any age group is more apparent than real. Among the nationals living in the state of São Paulo the highest increase was in the 31-40 year group, with the others in the following order: 21-30, 41-50, 51-60, 11-20, +60 and 0-10. Among the foreigners there the highest incidence was in the 41-50 and 51-60 year groups, followed by the +60, 31-40, 21-30, 11-20 and 0-10

groups in that order. The epidemics of Hawaii, New Caledonia and Nauru Islands are cited, in which adults and children were at the beginning infected indifferently. In countries where leprosy is endemic, exposure to the disease never occurs regularly. A higher incidence of the disease among children or adults will be observed depending on an earlier or a later age of exposure, and on the resistance of the individuals in contact with the infection. The study of the clinical forms shown by the different age groups also seems to support this conclusion.—[From English version of authors' summary.]

[Not brought out in the authors' data are the rates for the different age groups in the leprous population (given as ages at which manifestations of the disease appeared) and that of the normal one, nor the comparison of the "nationals" and the "foreigners" which works out as follows below. The numbers of patients are those said to have been recorded in 1936-1944 inclusive, and the data on population are for 1940 (the figures given for them being in thousands).

Age Groups	Natives				Foreigners			
	Leprous		Normal		Leprous		Normal	
	No.	%	No.	%	No.	%	No.	%
0-10	864	7.4	1,981	31.2	2	0.1	114	1.4
11-20	2,889	24.7	1,621	25.5	46	2.1	634	7.8
21-30	3,351	28.6	1,185	18.6	185	8.3	1031	12.5
31-40	2,625	22.4	766	12.0	369	16.7	1597	19.7
41-50	1,273	10.8	458	7.2	602	27.1	1696	20.9
51-60	523	4.5	203	3.2	548	24.7	1536	18.9
60+	174	1.5	143	2.3	467	21.0	1525	18.8
Totals	11,699	99.9	6,357	100.0	2,219	100.0	8133	100.0

In the natives the normals are relatively most numerous only in the first two groups—and not very much so in the 11-20 year group—and in the oldest one, and the excess in the leprous groups 21-30 and 31-40 is marked. In contrast, the normals among the foreigners have the higher rates until after the age of 40 years—EDITOR.]

ARNOLD, JR., H. L. "Macules" of leprosy. *Arch. Derm. & Syph.* **60** (1949) 1148.

In the terminology of leprosy the word "macule" is used in two different senses: (1) the "simple flat macule," hypopigmented or erythematous, which is either lepromatous or indeterminate in type, and (2) either flat or elevated lesions—the latter usually tuberculoid—which show nerve damage and only rare or no bacilli. Thus leprologists speak of a morphologic and an immunologically significant macule, the former flat, occurring either in lepromatous or tuberculoid types of leprosy, the latter elevated, occurring only in the tuberculoid type. Lepromatous macules show numer-

ous bacilli, minimal nerve damage, poorly defined edges, and are usually multiple. The indeterminate macule show, histologically, banal lymphocytic infiltration. (The histology of the tuberculoid lesions is discussed, and also the clinical differentiation of them and lepromatous lesions, including the statement that the former do not invade the eye, the mucous membrane of the upper respiratory tract [which statement might be questioned by some] or the testicle.) The lepromin test is usually negative in lepromatous cases, positive in tuberculoid cases, reaching its peak in the third week. A purified antigen consisting of nucleoprotein of the lepra bacilli can also be used; the reaction to it reaches its peak in 48 hours. The tuberculoid elevated macules probably represent lesions in which there is elaboration of abundant antibody by the histiocytes in the skin, and the resultant antigen-antibody reaction effectively eliminates the bacilli. Occasionally the effective antibody action against the bacilli is lost and the patient may revert from a tuberculoid to a lepromatous type of leprosy.

—F. A. JOHANSEN

ELLIOTT, D. C. Leprosy, a disease of childhood with special reference to early findings in eye, ear, nose and throat of children examined at the National Leprosarium at Carville, La. *J. Ped.* **35** (1949) 189-196.

The author emphasizes the need of disseminating to all physicians in endemic areas medical information about the earliest symptoms of leprosy, especially in children. Particular attention should be given to the external manifestations as they appear in the eye, ear, nose and throat. Ophthalmological study is of considerable value in a differential diagnosis of leprosy from other chronic skin diseases or some of the common exanthemata of children. Where leprosy exists in families all younger members should be carefully scrutinized and observed over a period of years. In endemic areas of the United States, leprosy appears to be a disease of childhood generally acquired before the age of 5 years. There are photographs and case histories of four children. The author's experience is limited to 14 children.

—F. A. JOHANSEN

TEICHMANN, G. O. A study of lepra reactions. *Lep. Rev.* **20** (1949) 89-94.

This study was carried out over a period of one year in the Purulia Leprosy Home in Bihar in order to find out whether any other factors besides individual susceptibility were responsible for precipitating lepra reactions. Only lepromatous cases were dealt with. It was found that of the 421 such cases in the Home, two-thirds had no reactions during the year. Men and boys and girls reacted almost equally, but the disease tended to be milder among women and fewer of them had reactions. Of the 140 patients who had reactions, 77 had only one each and only 28 had three or more during the year. In those who had multiple reactions the condition tended to be more severe. Reactions were most frequent during March and April, with the onset of the hot dry weather; they were definitely fewer during the rainy and cold season, and very few occurred during the time when patients were most busy transplanting and harvesting the rice. There has been no increase in frequency following vaccination and T.A.B. inoculations as had occurred a few years previously. Dysentery and pneumonia tended to be followed by severe reactions. It is believed that reactions occurring in both tuberculoid and lepromatous leprosy are due to a similar cause, and that the rose-red spots occurring during reactions are allergic in nature like the erythema nodosum of tuberculosis and other conditions.

—AUTHOR'S SUMMARY

- SIMONS, R. D. G. P. Enkele clinische gegevens over een 87-tal lepralijders. "Biotropisme indirecte lépreuse" der anti-syphilitische behandeling. Photosensibilisatieproef op de na lepra. [Clinical features of leprosy cases; indirect biotropism of antisyphilis treatment; photosensitivity testing in leprosy.] *Nederl. Tijdschr. v. Geneesk.* **92** (1948) 1612-1619 (English summary).

Many interesting features are recorded in this study of 87 patients, in whom the diagnostic complications of syphilis and skin diseases were increased by avitaminosis and nutritional disturbances acquired in concentration camps. Leprosy manifested itself in the accepted forms, but the neural ones showed not only as "hansenides" (tuberculoid) but also as "intermediate" forms. Two unusual manifestations among many others are described. The first case is cited as one of "indirect leprous biotropism." Direct biotropism is the reaction brought out, say, in syphilis by specific provocative dosage; the indirect reaction is that pertaining to some other disease, as a malarial attack which is precipitated by antisyphilis treatment. In the present instance a 20-year-old patient with primary syphilis developed, after his ninth injection, a typical acute lepra reaction with leonine facies and acid-fast bacilli in his nasal mucus. He had evidently been at the same time a case of latent leprosy. The second case was peculiar. An 18-year-old blonde youth, with neural leprosy, showed marked photosensitivity of the skin upon application of bergamot oil and exposure to the sun. Many of his neurotrophic leprous skin areas, devoid of lanugo hair and showing sensory changes, were immediately revealed by application of bergamot and exposure to the sun. This should have been followed by a dermatitis and subsequent darkening of the reaction areas, but the leprous macules remained depigmented as vitiliginous leprides which, in some instances, were only punctiform. The lepromin and pilocarpine tests in these leprous patients followed well-known lines.—[From abstract in *Trop. Dis. Bull.* **45** (1948) 792.]

- HAMERS, S. L. T. M. & HERMANS, E. H. Enkele waarnemingen bij lepra-patiënten in Nederland. [Observations on leprosy patients living in the Netherlands.] *Nederl. Tijdschr. v. Geneesk.* **92** (1948) 3409-3419.

In a rather discursive paper some data are given on 40 new leprosy patients segregated in the leprosy center in Holland, all originating from Indonesia and most of them repatriated ex-internees of Japanese prison camps. There appears to be no evidence that the infection was contracted while in the camps. Type determination of 30 of them gave: 15 lepromatous, 10 tuberculoid and 5 indeterminate. Of 10 patients who went to the tropics at an older age the lepromatous type predominated (90%), while in the 24 who were born there or had gone there before the age of 20 years the tuberculoid type was more common (50%). The earliest complaints occasionally referred to the nose, more often to fatigability, but most frequently there was an eruption, symptoms of nervous irritability, or nerve injury. The Mitsuda reaction gave accurate information about prognosis, while the new South American classification, which can be correlated to the bacteriological and pathological findings, compared favorably with its forerunner.—[From abstracts in *Trop. Dis. Bull.* **46** (1949) 368 and *Exc. Med.* **3** (1949) 173.]

- HARKNESS, A. H. Leprosy. *British J. Derm. & Syph.* **60** (1948) 382-383.

A report of a Chinese seaman with a history of syphilis 2 years previously, sent to the venereal disease department of a London hospital with the diagnosis of gumma below the knee. Two weeks before admission there had appeared below the left knee a gangrenous-looking vesicle which developed into a deep, punched-out ulcer 2 by 2½ inches. No treponemas were found, but numerous leprosy bacilli, both in scrapings from the ulcer and from the naso-pharynx. The ulcer healed rapidly within a month under sulphetrone treatment, and the number of bacilli in the nose also decreased.

—G. O. TEICHMANN

- COSTA, O. G. & ALEIXO, H. B. Tuberculoid leprosy; warty lepride. *British J. Derm. & Syph.* **60** (1948) 243-248.

A report of a case of tuberculoid leprosy in a Brazilian showing remarkably polymorphous lesions. On the back and chest they resembled circinate psoriasis, whereas on one hand and on the soles of the feet there were verrucous lesions and the nails were thickened and brittle. No bacilli were found.

—G. O. TEICHMANN

- VACHON, R. & COUDERT, J. Léprides en traînées pigmentées. [Leprids with pigmented zones.] *Bull. Soc. française Dermat. et Syphilig.* **55** (1948) 157.

This four-line case report is of some interest in that the patient was a missionary 60 years of age, who had contracted the disease in Cambodia. The condition was characterized at the time by neuritic disturbances of the upper extremities, and more particularly by an efflorescence of erythematopigmented lesions in long zones (*traînées*) over all of the trunk.

—H. W. W.

- COSTELLO, M. J. Tuberculoid leprosy. (Case report.) *Arch. Derm. & Syph.* **60** (1949) 1009-1010.

A Puerto Rican boy 5 years old, whose mother was in the leprosarium in Puerto Rico, had been brought to New York by plane in 1946. There were a dozen hyperpigmented, sharply circumscribed, dime to quarter-sized lesions with thin, raised borders, anesthetic to cold, heat, touch and pin prick. The ulnar nerve was enlarged and the greater auricular nerve could be palpated. Serological tests were negative. Biopsy showed a typical tuberculoid lesion with no acid-fast bacilli (Fite's stain). It was said that gram-positive nonacid-fast bacteria had been isolated from the cutaneous lesions.

—F. A. JOHANSEN

- COSTELLO, M. J. Leprosy, lepromatous type, with tufted destruction of the tips of the terminal phalanges. (Case report.) *Arch. Derm. & Syph.* **60** (1949) 1022-1023.

A 20-year-old Puerto Rican was hospitalized because of symptoms which suggested intestinal obstruction but which subsided with conservative treatment. While in the hospital a cutaneous eruption was noted. There had been no previous eruptions, and the family history was negative for leprosy. Skin biopsy showed nodular leprosy. A nasal smear showed lepra bacilli. The Kline reaction was 4+, the Mazzini reaction negative. There was a reversal of the albumin:globulin ratio. The ulnar nerves were enlarged all the way to the axilla. X-ray examinations showed destruction of the tufted ends of all terminal phalanges of the fingers and toes. These

changes were significant, as was the fact that the patient came from an endemic area. —F. A. JOHANSEN

- ALONSO MIGUEZ, A. Evaluation of new drugs in treatment of leprosy. *Bol. Of. San. Panamericana* **28** (1949) 356-362.

This article is a general review of sulfone therapy, primarily with respect to the National Leprosy Service of Brazil but leaning heavily on the results reported by Souza Lima, and including Rath de Souza's findings with respect to histological modifications of lesions as a result of treatment. These include increase in size (swelling) of the Virchow cells, which become blurred in outline, fade and disappear. Reactional flare-up of the tuberculoid type is said to occur in lepromatous cases. São Paulo leprologists have reported change of the lepromin test from negative to positive, but that phenomenon has not been observed by investigators of the National Service after one year of treatment. Regarding the bacteriological changes, besides the usual statement about less rapid improvement in this respect than clinically, and mention of the question of whether or not granular forms are degenerative ones, there is mention of claims that the sulfones cause the bacilli to lose their acid-fastness and that consequently "negativization is nothing more than an artifact of technique." It is pointed out, however, that there are cases which, in spite of large dosage over long periods (e.g., 1,540 gm. promin in 18 months), remain heavily positive without change in the staining capacity of the bacilli. —H. W. W.

- [EDITORIAL] Sulfones in Hansen's disease. *Internat. Med. Digest* **55** (1949) 184.

After mentioning the movement to replace the term "leprosy" by "Hansen's disease," and recounting briefly the history of the present federal leprosarium, where in 1941 the sulfones were first used in the treatment of the disease, this editorial note mentions the fact that out of the 149 patients in whom the disease had been arrested after 3 to 3½ years of sulfone treatment, 3 have undergone reactivation and are again under treatment. Now that such good results are being obtained with the new drugs, plastic surgery is being started to correct hand and foot deformities, from which about one-half of the patients suffer. Return to work after discharge will be facilitated by the use of physical and occupational therapy in conjunction with such surgery. Because of the attitude of the public, 56 "arrested" cases continue to reside at Carville. It is hoped that reconstruction surgery will aid in bringing them back to a more normal appearance, and give them courage to face the outside world once more.

—F. A. JOHANSEN

- Box, L. A. Benadryl in acute lepra reactions. *Hawaii Med. J.* **7** (1948) 303-304.

Because of the belief that allergic factors play a role in lepra reactions the author used benadryl, an antihistaminic drug, in the treatment of that condition. Of the 9 cases treated, 3 had spontaneous acute leprous reactions, which responded favorably; 4 had acute leprous reactions precipitated by promin therapy, which also responded favorably, but the author feels that no conclusions can be drawn from this group because they received sulfone therapy; in the other 2, which had major tuberculoid reactions, equivocal results were obtained. The author feels that the cases treated with benadryl were more comfortable than those not receiving the drug, for

they required no sedation and had no pain or profuse diaphoresis. She feels that further investigation of the use of antiallergic drugs in acute lepra reactions is indicated.

—F. A. JOHANSEN

- 6 GUILLOT, C. F. & CAPURRO, E. T. Reacciones lepromatosas tratadas con propionato de testosterona. [Lepromatous reactions treated with testosterone propionate.] *Prensa méd. argentina* **36** (1949) 1122-1123.

The authors report their experience with two cases of lepra reaction in women with lepromatous leprosy, with severe febrile and systematic symptoms. These episodes appeared periodically, closely related to menstruation, and were resistant to all ordinary therapeutic methods. Because from a clinical standpoint there was evidence of a hyperfolliculinic syndrome, both patients were given 25 mg. of testosterone propionate by intramuscular injection on the 8th, 15th, and 20th days of the menstrual cycle. This treatment prevented the onset of new reactions and permitted the prosecution of the specific treatment.—[From authors' summary, supplied by G. Basombrio.]

- 7 MITANDA, R. N. Notas sobre o tratamento de lepra com as "leprolinas Souza-Araujo." [Notes on the treatment of leprosy with the Souza-Araujo leprolins.] *Rev. brasileira Leprol.* **15** (1947) 7-9 (English summary).

At the São Roque colony, in the state of Paraná, 15 patients were treated with the lepromin of Souza-Araujo to ascertain the general effects. During a period of 44 days they were given an average amount of 12.2 cc. intramuscularly or subcutaneously, and also 1 cc. per week by intradermal infiltration. The immediate effects observed were: general lepra reaction in 8 cases, one patient having fever after each injection or infiltration; local reactions in 10 cases, especially suppurations which left characteristic scars; only one patient had no such immediate consequence, and one felt general relief following each treatment. Late results, after 8 or more months, were: one-third showed improvement, one-third showed no change, and the remaining one-third were worse; one patient died. It is concluded that the dosage, the means of introduction, and even the technical preparation of the leprolins should be studied further in order that only beneficial results may be obtained.—[From author's summary.]

- 8 CHALDEIRA, R. G. DA GLORIA, C. R. Contribuição a terapeutica do mal perfurante plantar. Tratamento pela leprolina "Souza-Araujo" em injeções intra-ulcerosas. [The therapy of perforating plantar ulcer; treatment by injections of Souza-Araujo's leprolin within the ulcers.] *Mem. Inst. Oswaldo Cruz* **46** (1948) 315-353 (summary in English).

In the Father Damien Colony in Uba, Minas Gerais, 50 cases of perforating ulcer of from 2 to 40 years duration were treated with antigens prepared from acid-fast bacilli grown from leprous material by Souza-Araujo. Doses of from 0.12 to 39.3 cc. were injected inside the ulcers, intramuscularly, every 2 to 4 days according to the patients reaction; some had fever up to 41°C. but most of them tolerated the treatment perfectly. The results were cicatrization of the ulcers in 46 of the cases (92%). It is concluded that this treatment is very efficient.—[From the author's summary, supplied by F. A. Johansen.]

- JAGADISAN, T. N. Rehabilitation of the physically handicapped with reference to leprosy. *Lep. India* **20** (1948) 142-145.

After describing the different categories of disabilities of leprosy patients the author advocates the following measures for their rehabilitation: (1) an institute of physical and occupational therapy as a research and training center; (2) a department of welfare work, occupational therapy and community services in every large sanatorium; (3) rural agriculture colonies for the arrested cases; (4) after-care colonies, like the Papworth colony for tuberculosis; (5) industrial institutes for urban patients; (6) employment bureaus in every province for the absorption of the disease-arrested and physically fit patients. —DHARMENDRA

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

Trials have been made, first with an alcoholic maceration of the dried plant, later with an official fluid extract, and finally with the *intrait* of the fresh plant. This last preparation, after a slight congestive exacerbation of preexisting lesions, both apparent and inapparent, brought about more or less rapid improvement in all cases, the most prompt and remarkable effect being the amelioration of the ocular lesions. The author expresses great hope for this treatment. —H. W. W.

[References have been seen to a note, apparently editorial, on this treatment in the *British Med. J.* (1945) 336, and an "annotation" about it in the *Lancet* **2** (1948) 697. C. Grimes discussed the subject in a paper, as yet unpublished so far as known, which he presented at the South African Conference in October 1948. The gist of it is essentially as set forth in the second abstract below.]

- BONTEMS, J. E. Sur un heteroside nouveau, l'asiaticoside, isolé à partir de l'Hydrocotyle asiatica (Umbellifères). [A new heteroside, "asiaticoside," isolated from *Hydrocotyle asiatica* (Umbelliferae).] *Bull. Sci. Pharm.* (1942) 186.

The author, a pharmacy officer in the colonial troops, studied this material in the laboratory of the Institute d'Hygiène Sociale of the Leprosy Prophylaxis Service in Tananarive, Madagascar. An oil obtained from this plant has been assumed to be the active principal which has given the Hydrocotyle a reputation for the treatment of certain diseases, leprosy in particular; but Grimes, chief of the antileprosy service [who supplied a copy of this paper] acquired doubt on the point as a result of therapeutic experiments at the Manankavaly leprosarium and arranged for a search for another essential constituent. The search for the principal alkaloids gave negative results, but there was found a new heteroside (glucoside) to which the name "asiaticoside" was given. Its therapeutic activity in leprosy, it is stated, seemed to justify a chemical study, and the present report summarizes the work done and the results obtained. [Should the results of treatment of leprosy with this material warrant detailed consideration of its properties, this report would require further examination.] —H. W. W.

- BOITEAU, P. & SARACINO, R. Premiers essais au sujet de l'action de l'asiaticoside sur les lupus érythémateux et sur certains lésions produites par les bacilles de Hansen et Koch. [First trials of the

effects of asiaticoside upon lupus erythematosus and certain lesions caused by the bacilli of Hansen and Koch.] *Méd. français* 8 (1948) 251 (No. 19, Oct.).

The authors—one of whom (Boiteau) when director of the Tananarive Botanical Park studied the plant *Centella asiatica*, the sap of which natives used with some success for combating leprosy—first recount the results claimed by Grimes and other Tananarive doctors who have treated leprosy patients with “asiaticoside.” There is immediate improvement in patients not responsive to any other treatment, and either cure or much improvement of almost all patients treated. After a congestive period cutaneous and hypodermic lesions disappear or undergo resorption, interstitial keratitis regresses and vision frequently improves, neuritis and anesthesia lessen; and bacilli disappear from the nasal mucus in the second week. [Grimes says that neural leprosy is particularly influenced, with—besides the changes just mentioned—disappearance of macules, “rebuilding” of atrophied muscles, and healing of perforating ulcers.] Boiteau and Ratsimamanga, investigating this treatment in experimental tuberculous infection in the guinea-pig, found that treated animals, even when not completely cured, showed only slight lesions, whereas controls had multiple nodular foci and many tubercles in the viscera. The present authors then began therapeutic tests with “oxyasiaticoside,” a very soluble product of oxidation of asiaticoside with permanganate. Because of the congestive effect noted at the beginning of the treatment with asiaticoside, they used cases of lupus rather than pulmonary tuberculosis. Of 8 patients treated, 6 improved and 2 were completely cured. One cured case was of a woman of 60 who for 12 years had had erythematous lupus of the face, with a large excavation of the nose. After exacerbation during the first 3 weeks, regression set in and in less than two months recovery was complete; it still persisted two months later. The other cured case was of ulcerative erythematous lupus which had lasted for 15 years, destroying the soft parts of the nose and causing ulceration of the upper lip and right orbit. The congestive effect was indicated by exacerbation of pain, but epithelization set in by the 9th day and on the 26th day the lip was almost completely epithelized. During the fifth week two fresh ulcerations appeared in the scar tissue but yielded to further injections. Treatment is still continued, although the patient may be considered cured. No untoward incident due to the treatment has been observed.—[Condensed from the *J. American Med. Assoc.* 139 (1949) 49, Paris correspondence.]

BOITEAU, P., BUZAS, A., LEDERER, E. & POLONSKY, J. Derivatives of *Centella asiatica* used against leprosy. Chemical constitution of asiaticoside. *Nature* 163 (1949) 4137.

Infusions of *Centella asiatica* (Urban) (*Hydrocotyle asiatica* L.), a plant of the family Umbelliferae, are used in India and Madagascar against leprosy (mentioned in the French Pharmacopoeia of 1884). The crystalline glucoside isolated from this plant is called asiaticoside ($C_{21}H_{34}O_8$). An extensive report of its chemical properties is given.—[From abstract in *Exc. Med.* 3 (1949) 425.]

BHATTACHARYYA, S. C. & LYTHGOE, B. Derivatives of *Centella asiatica* used against leprosy. Triterpene acids. *Nature* 163 (1949) 4137.

C. asiatica should contain a glucose derivative, active in the treatment of leprosy. In this article the results of analyses carried out on dried plant

tissue of Ceylonese origin are reported. No sugar derivative of the type of asiaticoside could be detected, but three triterpene acids were isolated in a pure though amorphous condition. It seems very likely that these substances are related to the amorphous aglycone of asiaticoside.—[From abstract in *Exc. Med.* 3 (1949) 424-425.]

- 6 LYTHGOE, B. & TRIPPETT, S. Derivatives of *Centella asiatica* used against leprosy. *Centelloside*. *Nature* 163 (1949) 4137.

When alcoholic extracts of the fresh Ceylonese plant (*C. asiatica*) were analysed, free triterpene acids were found but in amounts too small to permit identification. In one fraction, however, combined triterpene was present in considerable quantity. This fraction was purified until only small traces of free sugar were present. Its chemical properties resemble closely those of asiaticoside and, accordingly, the authors suggest for it the name "centelloside." The chemical properties are given.—[From abstract in *Exc. Med.* 3 (1949) 425.]

- 6 TITUS, E. and BERNSTEIN, J. The pharmacology of the sulfones. *Ann. New York Acad. Sci.* 52 (1949) 719-728.

Prompted by the frequent assumption that the nitrogen-substituted derivatives of diaminodiphenyl sulfone (DDS) [designated DADPS by the authors] exhibit tuberculostatic activity by virtue of their conversion in the body to the parent substance, a comparative study has been made of the blood levels of DDS following administration of its derivatives to mice and dogs, using analytical methods capable of distinguishing that substance from its derivatives. In mice, single oral doses of equimolecular quantities of DDS, its insoluble acetylated derivatives (rodilone), and several water-soluble derivatives, produce maximal blood levels of DDS which increase in the order of increasing therapeutic effectiveness of the drug in the Squibb mouse test. Administered in the diet at levels of equal therapeutic effect, these drugs produce blood levels of DDS sufficiently similar to be consistent with the hypotheses that the latter is the common active agent. The water-soluble derivatives are rapidly eliminated following intraperitoneal administration, with some conversion to DDS taking place. Rodilone appears to be poorly absorbed from the peritoneal cavity. In dogs, absorption and excretion studies showed that DDS was more completely absorbed from the gastrointestinal tract than any of the derivatives used. It was excreted largely as a water-soluble degradation product. The methods of paper chromatography and Craig counter-current distribution used for the characterization of these derivatives have been extended to a study of the decomposition of the relatively unstable diasone, which appears to be converted to a slight extent on standing and to a greater extent in acid to a condensation product of formaldehyde and DDS. Comparative studies of the activity and toxicity of these substances have been made. The above methods have also been applied to the study of the mode of detoxification of DDS in the dog.—[From authors' presentation abstract.]

- 6 KIAN, S. & CHOA, G. H. The blood picture in leprosy. *American J. Med. Sci.* 217 (1949) 267.

The hematological findings in 36 cases in West China are given. Anemia was of the normocytic and hypochromic types; there was increase of the erythrocyte sedimentation rate; leukocytosis was infrequent and of a moderate degree; there was a marked shift to the left in the polymorpho-

nuclears, with high incidence of eosinophilia, lymphocytosis, and monocytosis; the reticulocyte counts were low. Eosinophilia is related to the lepromatous type of lesion. Neither lymphocytosis nor monocytosis provided any clues as to progress or prognosis.

—F. A. JOHANSEN

- 6 LÖFGREEN, S. & WAHLGREN, F. On the histopathology of erythema nodosum. *Acta Dermato-venereol.* **29** (1949) 1-13.

Commenting that although various aspects of erythema nodosum have received much attention in the past three decades the histopathology lacks complete elucidation, the writers report a study of lesions from 64 clinically typical cases, all in women ranging in age from 17 to 72 years, the specimens being collected at various times—from 1 to 60 days—after the onset of the eruptions. Careful clinical, bacteriological and serological examinations, made in order to elucidate the etiology of the condition, resulted in a division of the cases into six groups, including tuberculous (25 cases), streptococcic (13 cases) and lymphogranuloma benignum (i.e., sarcoidosis; 5 cases); in 12 cases of three groups the eruptions followed sulfonamide therapy. In all of the groups, eruptions of the same age presented an essentially uniform picture. The typical histological findings were involvement of the subcutaneous tissue, fibrinoid degeneration within connective tissue septa, granulomatous foci of histiocytes and lymphocytes, giant cells of the foreign body type, the so-called *wuchernde Atrophie* of the adipose tissue, and mural changes in the veins. These findings lead the writers to regard the eruption as of allergic origin. The differentiation of this condition from erythema multiforme and erythema induratum (Bazin's disease) is discussed briefly.—[Mainly from the authors' summary, supplied by J. Reenstierna.]

- 7 NICHOL, A. D. & DOMINGUEZ, R. Cutaneous granuloma from accidental contamination with beryllium phosphors. *J. American Med. Assoc.* **140** (1949) 855-860.

This report adds one more condition to the list of those which produce granulomatous lesions of the skin which histologically are of the sarcoid type.

—H. W. W.

- 8 GOMEZ ORBANEJA & BARBOSA. Reactivación de la secreción nasal por la inyección subcutánea de lepromina. [Reactivation of the nasal secretion by subcutaneous injection of lepromin.] *Actas dermo-sif.* **39** (1948) 58.

Fernandez showed that the cutaneous lesions of the hyperergic (tuberculoid) form of leprosy can be reactivated by subcutaneous injection of 1—1.5 cc. of lepromin, which provokes a triple reaction, general, local and focal. The last one—i.e., the reactivation of the lesions—has been used by Fernandez for diagnostic purposes in cases where bacilli were not found either in the lesions or in the nasal mucous. The present authors have employed this reaction in 7 cases to provoke or to augment the elimination of bacilli in the nasal secretion in the different forms of leprosy. Two patients with positive nasal secretions showed an increase in the number of bacilli eliminated. Two lepromatous patients and a tuberculoid one, all with negative smears became positive. These five patients had had treatment for several months with rongalite and sulfone compounds. Of two untreated patients, one showed the presence of bacilli after the injection of lepromin, while the other remained negative. Although the number of

cases is small, the occurrence of reactivations in several of them has stimulated continuation of the experiment, and it is believed that this test should be used for diagnostic purposes.—[From abstract in *Fontilles* 2 (1949) 285, supplied by F. Contreras Dueñas.]

- [REPORT] South African Institute for Medical Research, Annual Report for the Year Ending 31st December, 1948.

Under the heading "leprosy" there appears the following statement: In collaboration with Dr. P. D. Winter of the Union Health Department, leprosy bacilli have been submitted to fractionation with various lipid solvents followed by treatment with acid, alkali and saline. The resulting fractions were tested by Dr. Winter for possible use as diagnostic agents for leprosy, with satisfactory preliminary results. —H. W. W.

- NELSON, JR., R. A., DIESENDRUCK, J. A. & ZHENTLIN, H. E. Immobilization of virulent *Treponema pallida* by antibody in serum and cerebrospinal fluid of syphilitic patients. Symposium on Current Progress in the Study of Venereal Diseases, Public Health Service, Washington, D. C., 1949.

Antibodies immobilizing *T. pallida* *in vitro* in the presence of complement can be demonstrated in sera of syphilitic animals and humans. The antibody is distinct from reagin, as shown by absorption experiments. In this paper are summarized the results obtained with sera from normal individuals, patients with syphilis in its various stages, patients with diseases other than syphilis, and patients giving "biological false positive" serologic reactions. The sera, after inactivation at 56°C. for 30 minutes, are tested in a dilution of 1:10 by mixing with tissue-free treponema suspensions in the presence of guinea-pig complement. The treponema-immobilizing antibodies occurred with high frequency in the (85) patients with syphilis but were not present in others. Patients with such diseases as atypical pneumonia, measles, infectious mononucleosis and chickenpox (50 cases) who gave positive reactions to lipoidal antigens were all negative with this test. The authors hope that it will prove useful in the investigation of biological false positive serologic reactions, and work is now in progress on this problem. [Sera from leprosy patients are now being tested by Dr. Nelson and his associates.] —F. A. JOHANSEN

- BALE, W. R. The preparation of carbol-fuchsin for Ziehl-Neelsen's stain. *Lep. Rev.* 19 (1948) 154.

A method of preparing carbol-fuchsin for the Ziehl-Neelsen stain which has been particularly successful for the demonstration of leprosy bacilli is described. Boil 10 gm. of basic fuchsin—"of a reasonably standard composition"—in 100 ml. of absolute alcohol under a reflux condenser for 30 minutes, and allow it to cool. Dissolve 50 gm. of phenol in 950 ml. of distilled water. Add this to the fuchsin solution and shake well. A precipitate starts to appear at once, and continues for a period of 3-5 days. After 5 days the stain is filtered and is ready for use. It keeps well. —H. W. W.

- IBARS ESTEVE, A. Técnicas de coloración del "*Mycobacterium leprae*." [Techniques of staining *M. leprae*.] *Fontilles* 2 (1949) 231-236.

This survey of methods used begins by recalling that in 1868, in studying the cells which Virchow (1864) had called *Leprazellen*, Hansen saw in

them brown elements which he later suspected might be bacillary bodies and found to take osmic acid. Shortly afterwards Neisser and Edlund visited Hansen at Bergen and supported his claim; and Neisser, employing the Weigert-Koch technique, confirmed the existence of the bacilli. Thin (1882) is credited with first demonstrating its resistance to decolorization by dilute nitric acid after staining with fuchsin. The body of this article is in four sections: (1) Methods employed for staining the tubercle bacillus which have been applied to that of leprosy, from the Ziehl-Neelsen through eight others and ending with a detailed exposition of that of Hallberg [see THE JOURNAL 14 (1946) 67; 16 (1948) 509]. (2) Methods employed for studying the "granulations of Lutz," which recall those described by Much for the tubercle bacillus, the reports of Rodriguez *et al.* and of Fontes being dealt with especially. (3) Methods devised to distinguish between living and dead bacilli, in particular those of Unna (victoria blue and safranin) and of Aoki and Aoki (erythrosine-picric). (4) Methods designed to distinguish between the leprosy and tubercle bacilli: (a) the classical one of Baumgarten (1884), which was supposed to leave those of tuberculosis unstained, and (b) that of Yamamoto, which employs silver nitrate (5%, applied for 10 minutes at 55-60°C.) followed by a tannin-pyrogallie solution (tannin 1 gm., pyrogallie acid 2 gm., distilled water 100 cc.; apply for 5 minutes, wash and dry) and is supposed to color the tubercle bacilli black while those of leprosy remain uncolored. —H. W. W.

- 6 WATANABE, Y., NONAKA, N., KUWABARA, K. & WATANABE, C. Experimental studies on animals concerning leprosy. Report XV. The research for the histological changes occurred by inoculation of the leprosy tissues emulsions. *Kitasato Arch. Exper. Med.* 21 (1948) 31-33.

It is generally recognized that certain reactions will follow the inoculation of suspensions of leprosy tissue, the problem being whether the changes should be regarded as signifying infection or not. (1) White rats were inoculated intraperitoneally with suspensions of human lepromas and rat leprosy lesions, and abdominal fluid was examined for the cells and phagocytosis; the organs were also examined histologically. The statement of results is confused, but one passage is clear: "Changes caused by inoculation of emulsion of human leprosy tissues did not develop beyond a certain degree. But they were suggestive of leprosy changes." (2) Fowl were inoculated in the chest muscles with dilutions of the same materials, and attempts were made to transfer the lesions produced to the 2nd and 3rd generations, without success. It could not be decided whether the scars produced [by the first inoculations?] were due to actual infection or not. —H. W. W.

- 6 FERNANDEZ, J. M. M. Estado actual de nuestros conocimientos en bacteriología e inmunología de la lepra. [Present state of our knowledge of the bacteriology and immunology of leprosy.] *Actas dermo-sif.* 39 (1948) 3-31.

The author summarizes his personal efforts of many years duration, and an extensive literature, in the field of the bacteriology and immunology of leprosy. Progress has not been uniform in all phases of knowledge of the disease, for while there has been positive advancement with respect to classification, pathological anatomy, epidemiology and therapy, there has not been such progress with respect to, for example, the factors of trans-

mission and infection or the intimate processes which determine its pathology. Bacteriology and immunology perhaps occupy opposite poles in this balance. The former has kept many of its secrets for more than half a century, notably the cultivation and inoculation of the bacillus. The latter, on the other hand, has within a short period of time seen real advancement.—[From an abstract in *Fontilles* 2 (1949) 281, which occupies nearly five pages of that periodical, supplied by F. Contreras Dueñas.] This portion constituting 4.3% of the whole.]

- X CARPENTER, C. M., STOKINGER, H. E., SUHRLAND, L. G. & ACKERMAN, H.
Chemotherapy of murine leprosy. *American Rev. Tuberc.* 60 (1949)
359-365.

[This paper was presented at the Havana Congress and appears in its *Memoria* (pp. 207-212). The authors' abstract appeared in the Congress number of *THE JOURNAL* (16 (1948) 268).]