

## CURRENT LITERATURE

*It is intended that the current literature 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.*

BUCCO, G. and MAZZITELLI, L. La lebbra. [Leprosy.] *Acta Med. Italica Mal. Infett.* **14** (1959) 305-344.

This is a review written in anticipation of the 8th International Congress on Leprosy, due to be held in 1963. After a short general introduction, the authors give figures for geographic distribution in the 5 continents, and also in Italy. There follow accounts of etiology, epidemiology, susceptibility and other related factors, immunology, pathology, clinical features with reference to the various body systems, clinical and laboratory diagnosis, classification, treatment, prognosis and prevention. This is not just a textbook account, but also a useful review of the literature, which is well covered by some 280 references.—[From abstract by H. J. O'D. Burke-Gaffney in *Trop. Dis. Bull.* **59** (1962) 158-159.]

UTKU, E. Sivasda lepra epidemiolojisi ön çalışmaları. [Leprosy in Turkey.] *Türk Ijiyen ve Teerübi Biyoloji Dergisi* (Ankara) **21** (1961) 219-234.

In August 1961 in the Zara, Kangal and Gürün areas toward the northeast of Turkey a survey was made in 43 villages. Of 13,893 people examined, 57 were found to have leprosy, of whom 15 (26%) were new cases. Most of the cases (87%) were of the lepromatous type, for the most part "inactive"; 6% were tuberculoid, and 7% were indeterminate.—[From abstract by F. I. C. Apted in *Trop. Dis. Bull.* **59** (1962) 451.]

AYLLON LUVIANO, A. El problema de la lepra en México. [The problem of leprosy in Mexico.] *Biol. Epidemiol. (Mexico)* **25** (1961) 24-32,

It is generally believed that leprosy was imported into Mexico during the Conquest, that the principal endemic focus in the west is explained by the regular commercial relations with the Philippines at the time, and that the focus was subsequently maintained by Asian immigrants. Regular control measures were begun in 1930 with the formation of the National Service for the Prevention of Leprosy, and further advances were made on the introduction of the sulfones in the treatment in 1946. There are now 24 dispensaries distributed in the major endemic areas. Prevalence data show that the rates of 2.85 and 3.37 per 100,000 in the first 2 quinquennia, respectively, fell gradually to 1.64 in 1955-59. The geographical distribution in 1959 is shown on a map and listed for all the states. Climate does not appear to influence endemicity. Mortality has fallen regularly since the 1945-1949 period. Of 2,657 cases reported in the 1955-1959 period, 58% were lepromatous, 25% tuberculoid, 13% indeterminate, 2.4% dimorphous and 0.3% unclassified. The danger of spread is emphasized; this is because of the predominance of lepromatous leprosy and insufficient control of migrant laborers from zones of high endemicity to less affected areas. [The "dimorphous" class presumably means borderline, and the low rate suggests a low recognition level. H.W.W.] [From abstract by H. J. O'D. Burke-Gaffney in *Trop. Dis. Bull.* **59** (1962) 452.]

BEEK, C. H. Een autochtoon geval van lepra in Nederland. [An autochthonous case of leprosy in the Netherlands.] *Nederlandsch Tijdschr. v. Geneesk.* **105** (1961) 2214-2216.

The English summary of this paper is as follows: Lepromatous leprosy was diagnosed in a 58-year-old man who had never been outside the Netherlands, and consequently must have acquired the disease within the country. The source of the

infection has not been traced. Few cases of autochthonous leprosy have been recorded outside the region between the latitudes of 40° north and south of the Equator.—[From *Trop. Dis. Bull.* **59** (1962) 159.]

PATEL, T. B., KAPOOR, P. and RAO, V. N. Infectivity of leprosy in man. An epidemiological investigation of 1,437 leprosy cases under treatment in Vairag and Savda leprosy subsidiary centers of Sholapur and East Khandesh Districts in Maharashtra State. *Indian J. Med. Sci.* **15** (1961) 529-544.

Surveys conducted from the Vairag and Savda centers show great variety in endemicity. Thus in Vairag there was high endemicity, 26 per 1,000 and in Savda moderate, 9 per 1,000; the lepromatous rate was higher in the latter place. Most of the patients detected were in the 5-15, 10-25, and 25-35 years age groups. Hence the population of this age range should receive the utmost attention regarding early diagnosis and continuity of treatment. The fact that patients seldom come forward for diagnosis and treatment in the early stages indicates the need for wider surveys and increased propaganda. Deformities of the extremities were found in about 1 in 4 of the Vairag patients and 1 in 3 of Savda patients, indicating the need of early detection and deformities. Trophic ulcers of the feet are associated with rough roads in rural areas, and general non use of footwear. Females have the highest incidence of absorption of digits of the hand. A larger number of the leprosy patients were single cases, but there were also multiple-case families. For children, there was much contact at different ages with infected parents and others, and some families even had secondary cases. [This valuable epidemiologic report deserves close study. H.W.W.]—[From abstract by J. R. Innes in *Trop. Dis. Bull.* **59** (1962) 40.]

MONTESTRUC, E. Comportement différent des sexes vis-a-vis de l'infection lépreuse. Considérations bactériologiques. [Sex differences in leprosy infection; bacteriologic considerations.] *Rev. Méd. et Hyg. d'Outre Mer* **33** (1961) 38.

It is generally accepted that leprosy is more frequent, and more severely malign in its form, in men than women. This is illustrated by the 199 leprosy patients seen in Martinique during the last 6 years, of whom 62% with the lepromatous and borderline forms were men and only 38% were women, whereas of the 655 patients with comparatively benign indeterminate and tuberculoid forms 46% were men and 53% were women. It was also found that longer treatment was required for men than for women before bacteriologic negativity was attained: re the nose, 7 months for men *vs* 4.5 months for women, and for skin, 13 months *vs* 9 months. It is thought that the difference between the sexes in this respect is dependent on the hormonal systems.—[From abstract by E. Muir in *Trop. Dis. Bull.* **58** (1961) 804.]

MUKHERJEE, N., KUNDU, S. and GHOSH, S. A follow-up of suspicious cases of leprosy under observation. *J. Indian Med. Assoc.* **37** (1961) 345-347.

In most suspect cases the diagnosis is easy, being based on the 3 cardinal signs: loss of sensation with or without macule, thickening of peripheral cutaneous nerve, and the presence of the acid-fast bacillus. In most such cases the diagnosis can be made on the first 2 cardinal clinical signs, they hold, and rarely is bacteriologic examination necessary. Even so, there are many dubious cases, and these are kept under prolonged observation and examined at intervals of 3 months. Among the 17,118 patients at the Leprosy Research Department of the Calcutta School of Tropical Medicine from 1956 to 1959, 14,093 were diagnosed as having leprosy but 867 were reserved for observation, and this group is particularly discussed. Among them, 307 each showed a single hypopigmented patch with vague sensory disturbances. In 295 there were slightly thickened cutaneous erythematous patches, and in 164 neurologic symptoms. Not all of these patients attended for full observation, but finally it was decided that 94 had developed definite signs of leprosy after a few months—nonlepromatous

in type except in 4 cases. The hypopigmented patch first seen may look benign in character, but it may develop into a serious form. A fair proportion of those with erythematous patches or with neurologic symptoms also ended with a definite leprosy diagnosis. In 50% of the cases diagnosis could be made, within 3 months, either in the lesion first suspected or, in a few cases, in secondary or new lesions. This study brings the value of keeping suspicious cases under observation.—[From abstract by J. R. Innes in *Trop. Dis. Bull.* **59** (1962) 455.]

CLEVE, E. A. Leprosy transmission and its regional variations. *Bull. Tulane Univ. Med. Fac.* **21** (1961) 15-23.

This article consists mainly of findings in the literature, at the outset of which it is stated that, probably because of the social factors concerned, "countless epidemiological surveys have failed to yield reliable data." (C. Manalang is cited as the authority for this statement.) The date of the discovery of the leprosy bacillus by Hansen is given as 1871. "The disease itself can be easily recognized," but "no laboratory procedure has been developed to find the infection, although the Mitsuda (delayed) reaction is positive in later childhood and in adults" [sic]. Variant forms of leprosy are discussed, with particular stress on alopecia leprotica, common in Japan, Korea and Taiwan where the practice of shaving the scalp of infants has long been prevalent. [This article cannot be regarded as a contribution to knowledge of the subject.] —H.W.W.

*Abstracts of material of the Rio de Janeiro borderline  
symposium, not previously dealt with.  
(Abstracts a—i follow)*

- (a) PEREIRA, A. C. Considerações sobre casos dimorfos. [Considerations on borderline cases.] *Arq. mineiros Leprol.* **20** (1960) 321-341.

The borderline group described by Wade and other authors is an intermediate clinical form of leprosy, transitional from reactional tuberculoid to lepromatous. Since the advent of specific treatment, the borderline form has also been encountered in the regression of lepromatous cases to tuberculoid. The borderline cases of greatest diagnostic interest are those which present lepromatous clinical symptoms, bacteriologically positive and lepromin negative, manifesting serious gravity. The leprologist working away from big centers generally has no other means than the clinical examination available for the classification of his cases. The borderline cases which require histopathology for their diagnosis actually are not given careful attention, apart from treatment. The specific treatment of leprosy has modified our concept of the borderline condition. He was using BCG by the concurrent method with satisfactory results, to increase resistance of the borderline cases.—[From the author's conclusions.]

- (b) RODRIGUES VIEIRA, I. Considerações sobre casos dimorfos. [Considerations on borderline cases.] *Arq. mineiros Leprol.* **20** (1960) 342-353.

Until proven the contrary, the author's opinion regarding lepromatous cases is that they do not show the manifestations of borderline aspects, nor are they definitely proved even to be linked with the phenomena of mutation. Certain lepromatous cases incline in the direction of the indeterminate group, and some of them show forms which can be called "pseudotuberculoid" because of a transitory similarity with tuberculoid. Among reactional tuberculoid cases, especially those of persistent or permanent character, there are those which can be considered "borderline," without, however, possessing features worthy of being regarded as a separate group. Reactional tuberculoid or exudative leprosy, possibly, provides a terrain in which the borderline condition develops, which is suitable for the exuberant cellulo-humoral phenomena. Borderline manifestations *ab initio*, which cannot be included in the preceding sentence,

are not considered valid for lack of doctrinary support and have escaped practical test.—[From author's conclusions.]

- (c) DE SOUZA CAMPOS, N. Contribuição ao estudo clínico da lepra dimorfa. [Contribution to the clinical study of borderline leprosy.] Arq. mineiros Leprol. **20** (1960) 354-366.

DE SOUZA, P. R. Contribuição ao estudo histopatológico da lepra dimorfa ("borderline"). [Contribution to the histopathologic study of borderline leprosy.] Ibid., pp. 367-374.

A lengthy abstract of these reports, with their joint conclusions, is to be found in THE JOURNAL **29** (1961) 532-534. On the occasion of the symposium, Portugal remarked that for the preparation of their report these authors seem to have been "taken by surprise" amid their routine tasks. In that connection, it may be noted that both presentations were based primarily on a review of records rather than on any original investigation. The paper of de Souza Campos told of the varying histologic reports that have been received on specimens from cases which clinically had been called borderline, and Rath de Souza told of the opposite condition, i.e., the varying clinical diagnosis submitted with specimens which in the laboratory had been diagnosed borderline. The former reported that of 58 specimens from cases diagnosed clinically as borderline, the laboratory reports were as follows: borderline, 24; lepromatous, 17; reactional tuberculoid, 9; and indeterminate 8 [!]. According to the latter, who from among the 39,051 specimens examined since 1941 had diagnosed borderline in 199 instances, the clinical diagnoses of those cases had been: borderline, 28; borderline queried, with alternative diagnoses, 12; reactional tuberculoid, 31; the same queried, with alternative diagnoses, 6; and lepromatous (not including queried alternatives), 50. That leaves 72 cases, some of them called indeterminate.—H. W. W.

- (d) RABELLO, F. E. The group B under the clinical viewpoint. Arq. mineiros Leprol. **20** (1960) 412-417 (English), 417-423 (Portuguese).

The author, the first *coordenador* of the symposium, discussed the presentations of the official *relatores* in a systematic fashion, including many views of his own without summary. The clinician's ability to make the exact diagnosis is very limited, he said, although there is an eloquent clinical picture. Borderline cases arise from tuberculoid by repeated reactions (nowadays commonly induced by the sulfones), rarely *ab initio*. They may or may not become frankly lepromatous, but the prognosis is relatively good. The low prevalence should not affect the present system of classification, but there are differences of opinion as to where they should be placed in that system. He regards the proposal to combine reactional tuberculoid and borderline as the best one offered, but he himself is inclined for the present to leave things as they are. As for new designations, he mentions only "bivalent" and "bipolar," expressing preference for the former because the latter signifies that the cases belong to both polar types whereas they belong to neither.—H. W. W.

- (e) PORTUGAL, H. [Remarks of second *coordenador*.] Arq. mineiros Leprol. **20** (1960) 423-426 (Portuguese), 426-429 (English).

[This speaker's remarks follow close on the heels of those of the previous speaker as if they shared the same title, but that would be quite inappropriate for the subject matter.] He first summarized the histopathologic features of the reports of Azulay, Rath de Souza, and Rodriguez Vieira (who said that he had "never seen an unquestionable lepromatous structure [together with a] "real tuberculoid one"). and then called attention to their discrepancies which he ascribed to the different circumstances under which their work was done. Three features of the lesions are particularly stressed: (1) lipids, which Azulay had studied. (2) Fibrous stroma, about



which Rodriguez Vieira pointed out the varieties of tissue elements in the lepromatous lesions, which are excluded from the tuberculoid foci. (3) Bacillus measurements, in connection with Rath de Souza's finding that the bacilli in borderline lesions are materially smaller than those from lepromatous lesions. These are all matters for further study. He recalled what happened with respect to tuberculoid leprosy 30 years ago. The disagreements of opinion were much deeper than those relating to borderline, in spite of which "there is nowadays a strong agreement about that leprosy type."—H. W. W.

- (f) CERRUTI, H. Simpósio sobre lepra borderline; proposta. [Symposium on borderline leprosy; proposals.] Arq. mineiros Leprol. **20** (1960) 443.

X The speaker proposed that there should be appointed committees of specialists, who, with all the facilities available, should study the various features of this form of the disease—clinical, histopathologic (by ordinary methods, observations on lipids, study of the collagen and reticulin, and by histochemical methods), immunology, serology (electrophoresis, complement fixation, etc.), bacteriology and therapy.—H. W. W.

- (g) ROTBERG, A. Lepra "borderline": grupo "perilepromatoso" satélite do tipo L. ["Borderline" leprosy; a "perilepromatous" group, satellite of the lepromatous type.] Arq. mineiros Leprol. **20** (1960) 463-469 (English summary).

Observation shows that the lepromatous and tuberculoid types of leprosy are extraordinarily fixed, and that no convincing evidence has been presented of transformation of cases of one type to the other. Therefore, there would be no place [in these types] for transitional, borderline or dimorphous cases. These words only signify, the author asserts, transition from type L to another usually anergic and often bacillary group known as "reactional tuberculoid." This designation does not seem proper if the spirit of the international classification is to be adhered to, as only resistant, lepromin-positive cases, whether chronic or reactional, should be labeled "tuberculoid." The lepromin-negative or -doubtful, often bacillary, "pseudotuberculoid" cases, as well as their more advanced stage, "borderline," are located within the L "pole," as a satellite group (perilepromatous) showing a relative degree of resistance.—[From author's abstract.]

- (h) FREITAS, U. A prova de azul de metileno na lepra. (Introdução ao estudo a luz da patologia analítica.) [The methylene blue test in leprosy. (Introduction to its study in the light of analytic pathology.)] Arq. Mineiros Leprol. **20** (1960) 470-484 (English summary).

The author considers the methylene blue test in leprosy from the point of view of analytic pathology, and the principal physical, chemical, immunoallergic, neurologic and psychosomatic, and histologic factors capable of interfering directly or indirectly with the test are discussed. He emphasizes the problem of the lipids in the Virchow cells, the liposolubility of the basic stains, the dominant autooxidations in lepromatous lesions (Bergel), the pH, the cellular enzymatic systems, and the importance of the reticuloendothelial system and the so-called "diffusion factors." He agrees with Alonso that a study of the test in lesions of the borderline group might result in interesting conclusions. His observations with the test, especially with respect to the care that must be taken when it is applied to patients treated with sulfone drugs, will be reported later.—[From author's summary.]

- (i) FREITAS, U. A prova de azul de metileno na lepra. (Introdução ao seu estudo a luz da patologia analítica.) [The methylene blue test in leprosy. (Introduction to its study re analytic pathology.)] Bol. Serv. Nac. Lepra **19** (1960) 297-311.

Part I of this study, presented at the Symposium on Borderline Leprosy in Rio de Janeiro (March 1960), deals with the complex problem of the phenomena of cellular permeability (see preceding abstract). Part II deals with the specific role of methylene blue in the differentiation of lepromatous and tuberculoid lesions. Medicinal methylene blue, free from zinc, was used. For fixation and immobilization of the dye, 3 solutions—all based on the use of ammonium molybdate—may be used: (1) Ehrlich's, (2) Turchini's, and (3) Bethe's. The last had proved to be the best. Limitation of time had permitted the study of only 3 biopsy specimens. Results of his observations will be given in a later report.—H. W. W.

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RAPP, Y. Leprosy (borderline type).

HEARIN, J. T. and CRONCE, P. C. Leprosy, lepromatous type (in a pregnant woman). *Arch. Dermatol.* **85** (1962) 800-804 (with discussion).

These two brief reports of cases presented at a meeting of the Section of Dermatology and Syphilology of the New York Academy of Medicine, on November 7, 1961, elicited from, among others, Drs. Reiss, Canizares, and Medina (of Mexico), a considerable amount of discussion which illustrates the confusion surrounding the subject of borderline leprosy.

1. The first patient was a 36-year-old woman from Costa Rica who had been hospitalized for foot trouble consequent to a nail puncture. It was noticed that she had trophic changes of both hands, and while in the hospital she developed a reaction with erythematous nodules and plaques on the arms, legs and face, ultimately with high fever (up to 105°F). Lepromin test negative. Two biopsy specimens taken in January and February were diagnosed "lepromatous and neural," while one taken in August was diagnosed "tuberculoid." The first two specimens showed numerous acid-fast bacilli, but the third one did not. Of 4 tissue smears, only 1 was positive. Clinically, the case was consistent with lepromatous leprosy, which was the original diagnosis, and one pathologist agreed while another thought it to be tuberculoid; the author decided that it belonged to the borderline ("or dimorphous") category. The story of the treatment given concerns mainly the control of the persistent fever, during the course of which she had another reaction.

2. The second patient was a 26-year-old Negro woman, native of the West Indies, 8 months along in her fifth pregnancy. She had first noted nodules on her face 9 months before, and others elsewhere later, symmetrically distributed. There were also large, ill-defined, hypopigmented macules over the back. Earlobes slightly infiltrated; eyebrows sparse. Afebrile. No neural signs. [No note of smear examinations.] The biopsy diagnosis was "leprosy." (In the discussion it was also related that during the patient's first pregnancy, while in England, she had developed "florid lesions over her entire body" which were "similar to the present ones.") [Reactional tuberculoid leprosy at that time?]

3. In the discussion, which dealt particularly with the first case, *Reiss* said that "borderline cases, also called dimorphous leprosy, have been a matter of controversy." and that the form is not generally accepted. There are many leprologists who believe that the condition is "a reactional phase of tubercular leprosy," and he himself was inclined to agree with that view. Lepromin negativity may indicate gradual transition to the lepromatous type. *Hyman* asked for clarification between "indeterminate leprosy and dimorphous leprosy." He felt that "introducing another term, that of borderline leprosy, into what is already a controversial subject is confusing a difficult subject even more and quite unnecessarily." *Medina* was inclined to think that the case under discussion was one of lepromatous leprosy, "because the borderline cases that he has seen present a large number of lesions and do not resemble clinically" the case presented. *Canizares*, pointing that borderline is not regarded as a type, but a group, said that

"a group like borderline may develop into one type or the other" (lepromatous or tuberculoid). His impression was that the patient, if she had been borderline, was now practically of the lepromatous type. *Rapp* related that one of the features that led to the decision that his case was borderline, instead of lepromatous as originally diagnosed, was the fact that globi were not found in smears or sections. The suggestion that globi are not formed in borderline leprosy (a new one, to this reviewer) is interesting and, if correct, may be a significant point in the differentiation of borderline lesions from true lepromatous.—H. W. W.

✓ TORRENT, F. *Lepra aguda*. [Acute leprosy.] *Rev. Leprol. Fontilles* **5** (1961) 259-267.

By acute leprosy the author means lepra reaction, but the term is mostly used to refer to the kinds common in lepromatous leprosy. In spite of clinical and histologic differences, there is a common pathogenic background. It is stated that the general trend of the inflammatory cutaneous reactional process in the lepromatous patient lies towards a cutaneous fibrosis, whereas in tuberculoid leprosy they end up in a soft flaccid condition, with loss of skin turgescence. The efficacy of the corticosteroids in the treatment of these reactions is recognized, but it is pointed out that they merely give symptomatic relief. The author thinks that there is a basic inhibition of the suprarenal function, and that the suprarenal deficiency is responsible for the reaction, and that suggests hormone treatment as a form of substitution therapy. The causes of the inhibition of suprarenal function are functional and organic. The former can follow every type of psychic or bodily stress, the latter can include even the specific antileprosy treatment, perhaps by means of a toxic action of the drugs on the glands. Further, there may be atrophic or infectious processes in the suprarenals themselves. Experimental studies were carried out, the results of which support these ideas, and 12 cases are reported in detail.—[From abstract by J. R. Innes in *Trop. Dis. Bull.* **59** (1962) 265-266.]

✓ LEIKER, D. L. Skin carcinoma and leprosy. *Trop. & Geograph. Med.* (Amsterdam) **13** (1961) 14-19.

Three cases of carcinoma and leprosy in the same lesion, an epithelioma, a basalioma and a Morbus Bowen are described. It is possible that these combinations are not as rare as the literature on this subject suggests, as many cases are probably not published.—[Author's summary from *Trop. Dis. Bull.* **59** (1962) 44.]

✓ McLEAN, C. M. Ocular leprosy and trachoma in a leprosarium. *Rev. Internat. du Trachome* **37** (1960) 635-639.

Of 172 patients in a leprosarium in the Northern Territory, Australia, 135 were found to be suffering from ocular complications of leprosy, but these were mainly mild. 152 patients had evidence of trachoma, the condition being active in 109. Sulfone treatment helps to prevent the more serious ocular complications of leprosy, but has no effect on the course of trachoma.—[From Luiza Keffer's bibliography.]

X SOKOLOW, J., SILSON, J. E., TAYLOR, E. J., ANDERSON, E. T., and RUSK, H. A. A new approach to the objective evaluation of physical disability. *J. Chron. Dis.* **15** (1962) 105-112.

The inconsistencies which appear in attempting to evaluate the degree of physical disability have prompted the authors to devise a method which they hope can become an easily understood "standard." Since determination of disability really means establishing a person's ability to function in daily life, nonmedical factors such as social, vocational, and psychologic, which determine this function to a large extent, must be considered. The suggested method embodies this concept, being based on a functional rather than an anatomic point of view. The form for recording is versatile, in that information can be programed for computer use. A trial on a thousand

patients showed enormous possibilities inherent in the form; it showed its ease of use, validity as a method of gauging disability, and utility as a source of statistical information. Tables are appended to demonstrate value in determining change in degree of dependence between admission and discharge, among other things. A system for evaluation in terms of "per cent disability" is included.—J. A. ROBERTSEN

✓ WANG, C. Y. The influence of physical labour on the course of leprosy; a clinical study. *Chinese J. Dermat.* **8** (1960) 84-85.

The author compared the condition of 55 leprosy patients for 6 months before and 6 months after physical labor. Sulfone was given to all the patients during both periods. Most of them (71%) increased in strength, became happier, recovered sweating, were freed from neuralgia or had milder attacks after participating in physical labor. There had been 45 lepra reactions during the before-labor period, 6 of which were severe, while during the period of labor there were only 14 reactions, none severe. The author also compared the condition of two different groups of patients, one group (1 indeterminate, 6 tuberculoid, and 8 lepromatous) living in the colony with a higher standard of living but without physical labor, and the other group (33 lepromatous and 16 tuberculoid) living in the village with a lower standard of living and participating in physical labor. Sulfone was given to both groups. At the end of 6 months, clinical improvement was observed in 82% of the laboring group and 73% of the nonlaboring group. On the basis of these findings, the author concludes that a certain amount of physical labor might exert a beneficial effect on the course of leprosy.—[From Luiza Keffer's bibliography, taken from *Excerpta Med.* **15** (1961) 748.]

✓ RIDLEY, D. S. and JOPLING, W. H. A classification of leprosy for research purposes. *Leprosy Rev.* **33** (1962) 119-128.

It is attempted in this paper to define a 5-group classification of leprosy in which the groups represent 5 grades of resistance to infection by the patient. The definition was made by assessing the significance of clinical, histologic and other characteristics by reference to the bacteriologic response to treatment. In a tabulation (not reproduced here in full) the five groups are designated and compared with the terms in general use.

<i>Described</i>		<i>General Use</i>
Tuberculoid (TT)	}	Tuberculoid
Borderline-tuberculoid (BT)		
Borderline (BB)		Borderline
Borderline-lepromatous (BL)		
Lepromatous (LL)	}	Lepromatous
Indeterminate		
		Indeterminate

"The application of a classification such as the one described will be strictly limited." [Few, if any will disagree with this statement.]—H. W. W.

✓ JAMES, D. G. and JOPLING, W. H. Sarcoidosis and leprosy. *J. Trop. Med. & Hyg.* **64** (1961) 42-46.

There is evidence that sarcoidosis is relatively common in colored races and is therefore of particular interest in the tropics. It is a systemic granulomatous disease of undetermined etiology and pathogenesis, affecting mediastinal and peripheral lymph nodes, lungs, liver, spleen, skin, eyes, phalangeal bones, and the parotid glands. Sarcoid tissue consists of follicles of epithelioid cells with occasional giant cells but little or no central necrosis. It thus resembles the tuberculoid type of leprosy. The first step in differentiation is to test for anesthesia, present only in leprosy. The examination of sections shows that the main difference is the presence of cellular infiltration inside the cutaneous nerves in leprosy of the tuberculoid type; but this is not so marked in the borderline form of leprosy, though in this form bacilli will generally be found. In both diseases the mucosae,



hair, eyes and reticuloendothelial system are affected, but thickened nerves are found only in leprosy. In leprosy bone changes are common while in sarcoidosis there are only "innocent punched-out phalangeal cysts." There may be sarcoidal changes in the lungs, but seldom if ever are the lungs affected in leprosy. Reactional states are distinct in the 2 diseases; in sarcoidosis, the erythema nodosum lesions do not occur in crops and are usually confined to the legs. The Kveim test provides strong evidence of sarcoidosis. Corticosteroids cause temporary or permanent suppression of the signs of sarcoidosis, but only when the disease is active. In leprosy they are effective only in the reactional phase.—[Abstract by E. Muir in *Trop. Dis. Bull.* **58** (1961) 696.]

[EDITORIAL] Sarcoidosis and tubercle bacilli. *Tubercle* (London) **42** (1961) 252-254.

Evidence accumulated in recent years supports the view that at best some cases of sarcoidosis are due to infection by tubercle bacilli, but the idea of the tuberculous etiology of sarcoidosis in general is, of course, not accepted by all. It has been held that sarcoidosis is most prevalent when tuberculosis is most rapidly declining, but there are no adequate data to support this view. Sarcoidosis is frequently a symptomless condition. The highest incidence will be recorded in countries where x-ray examination of symptomless people is most widely practiced, and it is in these countries where tuberculosis is most rapidly declining. A more convincing argument against tuberculosis infection as a common cause of sarcoidosis in the United States is its geographic distribution, certain states where sarcoidosis is most common (e.g., Connecticut, Rhode Island, Georgia and Arkansas) being low in the list for tuberculosis. Although the hypothesis of a relationship with pine tree pollens cannot at present be rejected, it does not carry as much weight in Great Britain as does the tubercle-bacillus hypothesis.—[From abstract in *American Rev. Resp. Dis.* **85** (1962) 611.]

DANIEL, T. M. and SCHNEIDER, G. W. Positive Kveim tests in patients without sarcoidosis. *American Rev. Resp. Dis.* **86** (1962) 98-99.

Using a contributed spleen antigen which was said to have been previously evaluated in about 200 sarcoidosis patients (more than 90% positive) and a somewhat larger number of nonsarcoid patients with various diseases (about 2% positive), the authors had obtained a higher rate of false reactions. The test group comprised 18 cases, 5 of them sarcoid and the others with granulomatous disease of known causation, most of them (10 of the 13) with tuberculosis. One sarcoid case gave a negative reaction, while 8 of the other 13 gave false positives. "These findings are reported in the hope of stimulating further investigation of this interesting reaction."—H. W. W.

HURLEY, H. J., CLOSE, H. P. and ENGLISH, R. S. Soil extracts as antigens in sarcoidosis. *American Rev. Resp. Dis.* **86** (1962) 100-102.

It has been reported that a relatively high incidence of sarcoidosis is correlated with the distribution of red-yellow podzolic soil in the southeastern United States, but there has been no further exploration of the subject. Because sarcoidosis remains a disease of unknown etiology, the authors undertook a direct investigation of the soils of South Carolina, using extracts of representative samples as skin-test antigens in patients with sarcoidosis and controls. The use of these materials was based on the belief that sarcoidosis may be the result of a special, delayed form of allergic hypersensitivity which is manifest as a sarcoid granuloma—like zirconium deodorant granulomas, the tuberculin skin-test granulomas, and possibly others [see *THE JOURNAL* **29** (1961) 88-98]. No such reactions were obtained. This supports the view that soil from "endemic" areas does not contain the causative agent of sarcoid.—H. W. W.

BROWNE, S. G. and HOGERZEIL, L. M. "B 663" in the treatment of leprosy; preliminary report of a pilot trial. *Leprosy Rev.* **33** (1962) 6-10.

This is a report of a trial in 16 patients of a synthetic Rimino-compound derived

from the anilino-aposafranine molecule. All the patients developed a ruddy skin and some became hypermelanotic, but there were no signs of serious toxicity. The results were encouraging because all patients, whether given "B 663" alone or combined with DDS, showed considerable improvement in the lepromatous clinical condition, and marked reduction in the bacterial index. There was a 49% reduction in patients treated with both DDS and "B 663." There was 28% reduction in patients treated with "B 663" alone. Some patients were given ditophal in addition to "B 663" but the results of the addition of ditophal must be regarded as capricious.—[From editorial.]

SCHALLER, K. F. and SERIÉ, C. Ditophal in the treatment of leprosy. *Leprosy Rev.* **33** (1962) 52-61.

The observation period in this investigation, being slightly more than one year, does not permit any final conclusion as to the lasting effect of the treatment with ditophal (Etisul, I.C.I.). The results so far indicate that the combined treatment with DDS and ditophal yields more rapid results than DDS alone. No evidence of drug resistance has been encountered. The patients will continue to receive DDS alone when they have completed the course of combined treatment, and will continue to be kept under observation as outpatients.—[From authors' summary.]

KIM, J. S. and TOPPLE, S. C. Initial results of a trial of CIBA 1906 in DDS-intolerant and reaction-prone leprosy cases in Korea. *Leprosy Rev.* **33** (1962) 20-24.

Results of an initial trial of Ciba 1906 in 33 lepromatous leprosy cases, either DDS-intolerant or in a state of chronic reaction, are reported. One-third of these patients showed good response, with definite clearing of signs and symptoms. This again points up the important role that this drug can play in the management of a very difficult and critical problem of medical management in lepromatous leprosy.—[From authors' summary.]

KRADOLFER, F. and SCHMID, K. The chemotherapeutic activity of injected DPT (Ciba-1906). *Leprosy Rev.* **33** (1962) 11-19.

A study carried out with mice infected with tubercle bacilli, against which (it is said) the tuberculostatic activity of DPT has been established.—H. W. W.

DEGOS, R., LORTAT-JACOB, E. and REY, M. Action très rapidement favorable de la sulfaméthopyrazine sur une poussée réactionnelle de lépre lépromateuse. [Very rapid favorable action of sulfamethopyrazine on the reactional outbreaks of lepromatous leprosy.] *Bull. Soc. française Dermatol. Syphiligr.* **68** (1961) 865-868.

Modern chemotherapy of leprosy offers a choice among many medicaments, but it must be admitted—the authors say—that since the introduction of the sulfones no decisive progress seems to have been made. The authors report on the use of sulfamethopyrazine (7522RP, or Sultirene), used by Schneider and associates at Bamako, in a thoroughly-studied and fully-described case of lepromatous leprosy in reaction with high fever. Treatment with sulfamethopyrazine alone (3 tablets of 250 mgm. each every 2 days) had no evident effect until the 9th day, when the fever suddenly decreased and the condition rapidly improved. At the end of a month of this treatment no bacilli were to be found in the nasal mucosa or the earlobes, and by the 10th week the skin lesions had entirely disappeared. The authors do not know of an effect as spectacular in the treatment of leprosy.—H. W. W.

ADIAO, A. C. and DEL MUNDO, F. Does sulphone therapy in leprous mothers affect their offspring? Observations among 167 newborns at the Tala leprosarium nursery. *J. Philippine Med. Assoc.* **38** (1962) 35-45.

Blood studies were performed on a total of 167 newborn children of leprous

mothers who had been on sulfone therapy during the first 7-8 months of pregnancy. These studies were repeated periodically at weekly intervals up to the age of 6 months. Blood sulfone levels were determined concurrently on both mothers and newborn infants. Anemia was found in 92.5% of the infants. However, after considering the prenatal history of the mothers under study, and after comparing these blood pictures with those of newborn infants of supposedly normal mothers who have never received sulfone therapy, it was concluded that sulfone therapy of pregnant leprosy women does not have deleterious effects on the blood of their offspring. The drug apparently does not have teratogenic effects.—[From authors' summary and conclusions.]

✓ TERCICIO, J. El ACTH y los corticosteroides en la lepra. [ACTH and the corticosteroids in leprosy.] *Rev. Leprol. Fontilles* **5** (1961) 249-258.

Of the many corticosteroid products which have been found beneficial at Fontilles in the control of reactions, the one which seems most satisfactory is dexamethasone (Millicorten, Ciba). The dosage is 3-4 mgm. for 3 days, 2 mgm. for 3 days, and 1 mgm. for 5 days. Dexamethasone has also received a favorable report from Melamed and others. The action is described as a marked antiphlogistic and "antistress." Intolerance such as that due to sodium retention, edema, arterial hypertension, or potassium depletion has not been encountered. The author has seen no serious side-effect, although in 3 cases of continuous reactional state he saw steroid obesity, gastric disturbances, purpuric symptoms, and edema. If the patient already has suprarenal insufficiency and is treated for a long time with corticotropin, he will reach a grave state difficult to resolve.—[From abstract by J. R. Innes in *Trop. Dis. Bull.* **59** (1962) 266-267.]

✓ MILLE, R. and PAPA, F. Contribution à l'étude des modifications humorales dans la maladie de Hansen; les glycoprotéines sériques. [Contribution to the study of the humoral changes in leprosy; the serum glycoproteins.] *Arch. Inst. Pasteur Martinique* **14** (1961) 24-29.

This investigation is based on 14 tuberculoid and 53 lepromatous cases, 7 of whom had received no treatment of any kind. No difference worthy of note in the serum glycoproteins was found according to the type of the disease or to the length of treatment. An increase of serum glycoproteins was observed in approximately 75% of the cases, and the normal content of the total polysaccharides—the hexose and fucose—does not exceed 10-15% on the average. There is markedly high incidence of hexosamines, to as much as 35-40%. These are very modest increases in comparison with those observed in other diseases, and they cannot be ascribed to the evident activity of the infectious process. A study of the perchlorosoluble seromucoid may result in interesting findings, if we take into account the absence of parallelism seen in the behavior of different glycoprotein fractions.—E. MONTESTRUC

✓ MAZZITELLI, L. Sull'aspetto istologico della lebbra in trattamento sulfonico. [The histologic features of leprosy after sulfone treatment.] *Acta Med. Italica Mal. Infett.* **14** (1959) 180-186.

The author reports his findings in biopsy specimens from 10 patients, for each of whom he gives a short case note. Three of the patients had long-standing disease, but they had been receiving sulfone treatment only for a comparatively short period and their lesions were fairly active. Four other patients who had been under sulfone treatment for a considerable time showed an advanced stage of sclerosis of their lesions. The 3 remaining patients were recent cases who were undergoing intensive treatment, and their lesions showed active sclerosis with little inflammation. A high content of reticulin was found in those lesions which showed evidence of marked reaction, and a reduction of reticulin in the sclerosing lesions. Neither leprosy bacilli nor lepra cells were found in any of the lesions. [What kind of leprosy did these patients have, to carry (some of them) "fairly

active" lesions without bacilli or lepra cells?—H. W. W.].—[From abstract by J. Cauchi in *Trop. Dis. Bull.* **59** (1962) 267.]

TISSEUIL, J. La lèpre et la tuberculose ne sont pas deux maladies antagonistes. [Leprosy and tuberculosis are not antagonistic diseases.] *Rev. Méd. d'Hyg. d'Outre-Mer* **33** (1961) 134-136.

The author refers to a paper by G. Girard on the supposed antagonism between leprosy and tuberculosis, and states again the biologic reactions and epidemiologic facts which in his opinion contradict the hypothesis of antagonism. The former include allergic reactions (which are not reinoculable), the Koch phenomenon, the reaction of acceleration, the Weill-Hallé test vaccination, the tuberculin reaction, and the Mitsuda reaction. Epidemiologic arguments are that the statistics of the two diseases are too recent or too incomplete to be used to support any theory in favor of or against an antagonism between them. Tuberculosis does not protect against leprosy, as indicated by Dutrouleau in 1863 in French Guiana, and Ortholan in 1899 to 1910 in New Caledonia. Also in Brazil, de Souza-Araujo and de Albuquerque [*THE JOURNAL* **13** (1945) 148] gave further proof that tuberculosis does not protect against leprosy, in that the frequency of leprosy diminishes with age in the Brazilians, but in immigrants the proportion is reversed. Adults who originate in countries which are free of leprosy but have endemic tuberculosis, are as sensitive to leprosy as young people born in Brazil. The author notes that Girard raises the interesting possibility of mutations. Also the point that contamination of lepromatous tissues by tuberculosis or paratuberculosis bacilli must have an influence on the Mitsuda reaction when that is carried out with lepromin prepared from such contaminated lepromatous tissues.—[From abstract by J. R. Innes in *Trop. Dis. Bull.* **59** (1962) 264-265.]

TISSEUIL, J. Quelle est la portée de la réaction de Mitsuda positive provoquée par des lépromines contaminées de bacilles tuberculeux et para-tuberculeux. [What is the significance of the positive Mitsuda reaction provoked by lepromins contaminated by tubercle and paratuberculosis bacilli?] *Bull. Soc. française Dermat. Syph.* **69** (1962) 22-24.

This article starts off by saying that, contrary to the idea of the "auteurs anciens" explaining the disappearance of leprosy and the development of tuberculosis that the leprosy bacillus changes into the tubercle bacillus, the "auteurs moderne" hold that tuberculosis gives a certain immunity against leprosy. For this idea they find support in the fact that the Mitsuda reaction changes from negative to positive after BCG vaccination. They hold that the lepromin reaction is an allergic response, and that BCG sensitizes to the leprosy bacillus and protects against leprosy. In reality, the author holds, the lepromin reaction is *not* one of allergy, and it seems possible to explain positivity of lepromin reactions after BCG on the ground of the presence of tubercle or paratubercle bacilli in the lepromins. Tuberculosis is at least as common among leprosy patients as among the general population, and they may also be bearers of paratuberculosis bacilli. These bacilli, carried by the blood, contaminate the lepromas. Consequently, lepromins made from such lepromas contain a certain number of these bacilli, with consequences dependent upon their numbers. BCG does not sensitize to the leprosy bacillus, but to the contaminating bacilli in the lepromin. [No experimental proof of the supposed contamination of lepromin is offered, nor is there any suggestion as to what procedure should be followed to produce uncontaminated lepromin.]—H. W. W.

ROSEMBERG, J., DE SOUZA CAMPOS, N., AUN, J. N. and DA ROCHA PASSOS, M. C., FILHO. Da relação imunobiológica entre tuberculose e lepra. X. Estudo comparativo dos resultados da lepromino-reação em indivíduos submetidos a injeções seriadas antígeno de Mitsuda, a curto prazo, e vacinados com BCG oral. [Immunobiologic relation between tuberculosis and leprosy. X. Comparative study of the



results of the lepromin test in subjects submitted to serial injections of Mitsuda's antigen and to oral BCG vaccination.] *Rev. brasileira Leprol.* **29** (1961) 67-78.

[This is the same paper, in Portuguese, as appeared in *THE JOURNAL* **28** (1960) 271-283.]

SCHMIDT, H. Further studies on seroreactivity in leprosy by means of a lecithin-free cardiolipin antigen (Cardchol) and other antigens ordinarily used in the serodiagnosis of treponematoses. *Bull. Wld. Hlth Org.* **25** (1961) 189-195.

In a previous study the reactivities of some lipoidal antigens in sera from patients with different types of leprosy were investigated. In continuation, the present paper deals with some 300 sera from leprosy patients in India. In particular, the reactivity of cardchol (a complement-fixing, lecithin-free, cardiolipin antigen, inferior with treponemal sera) is compared with that of CWRM (an "ordinary" cardiolipin antigen used routinely in the serodiagnosis of treponematoses). The former has proved to be the more reactive with leprosy sera. Thus it is revealed that the antilipoidal antibodies in leprosy are probably different from those demonstrated in treponematoses. Among nonsyphilitic leprosy patients, the percentage reactivity was significantly higher with cardchol than with CWRM. Thus, by changing the relative proportions of the three components of cardiolipin antigen, it has been possible to produce antigens with reactivities quite different from those ordinarily used for the serological demonstration of syphilis. Cardchol is by no means a specific antigen for the demonstration of leprosy, but it has the ability to fix antibodies in certain leprosy sera that are not fixed by the ordinary CWRM antigen.—[From author's summary.]

MUKHERJI, A. Culture and experimental transmission of *M. leprae* in monkeys. *Indian Med. Gaz.* **97** (1962) 21-26.

The author reports, briefly, success in cultivating *M. leprae* on a medium containing an extract of *M. phlei*, and also success in transmitting leprosy to monkeys by intraneural (ulnar) injection. The manifestations of leprosy are described as follows: (a) Thickening of the infected ulnar nerve, (b) presence of acid-fast rods in various organs far remote from the place of inoculation, (c) marked fibrosis in nerves especially the inoculated ones and in the spleen, (d) reddish-brown lesion in the skin over the nose, (e) claw hand in the same side as the inoculated nerve. This, however, was marked in two monkeys only; in others it was not pronounced. Control monkeys which had received *M. phlei* also through ulnar nerves showed nothing abnormal before or after death.—[From author's summary.]

FITE, G. L. Metachromasia of mycobacteria. *American Rev. Resp. Dis.* **82** (1960) 574-576.

The triphenyl methane dye, Eriochrome Cyanin R, in a formulation similar to that used in acid-fast staining (2 parts of the dye, 5 of phenol, 10 of ethyl alcohol, and water to 100), stains mycobacteria an orange color, whereas other organic matter, including other bacteria, stains deep blue. The phenol chelation is essential, for without it the mycobacteria remain unstained. Microscopic visualization of yellow or orange bacilli is not good, even with filters, and the author feels that there is no promise that this manner of staining will ever prove practically useful.—H. W. W.

TAN THIAM HOK. A simple and rapid cold-staining method for acid-fast bacteria. *American Rev. Resp. Dis.* **85** (1962) 753-754 (correspondence).

The technique calls for covering the smear with Kinyoun's carbol-fuchsin for 3 minutes, washing with tap water, and decolorizing and counterstaining with Gabbett's solution for 1 minute. The results are superior to those of ordinary methods. [Cold-

staining of smears, but in Coplin jars, has been used for many years in the laboratories in the Philippines instead of the excessively messy use of the hot-staining method of treating individual slides over an open sink. The use of Gabbett's solution can be recommended.]—H. W. W.

X DARZINS, E. and PUKITE, A. Action of nucleic acids and plant-growth hormones on the growth and viability of mycobacteria. *American Rev. Resp. Dis.* **84** (1961) 549-554.

The action of kinetin, 3-indolacetic acid, and gibberellic acid was compared with growth stimulation by commercial ribonucleic acid in ageing BCG cultures refrigerated (5°C) for 3, 7, 10 and 20 months. The highest growth stimulation was by ribonucleic acid. Strain H37Rv was grown in liquid medium for 5 years at 37°C under paraffin oil. A large mass of bacilli was formed which remained pathogenic (for guinea-pigs) for two years; after five years these cultures were dead. BCG was grown for two years in liquid medium under paraffin oil in the presence of  $10^{-3}$  gamma/cc of nucleic acid. There developed an abundant mass of acid-fast bacilli, while controls without nucleic acid showed only scanty growth. "This phenomenon of conservation of life under paraffin oil in the presence of nucleic acid provides a method of ensuring the survival of cultures of BCG and other mycobacteria over long periods of time."—[From authors' summary, supplied by J. A. Robertsen.]

✓ SATO, S., MAYAMA, A. and FUKUDA, M. Inoculation experiment of leprosy in goldfish and crucian. II. Results with murine leprosy bacilli. *Sci. Rep. Res. Inst. Tohoku Univ. Ser. C*, **10** (1961) 234-248.

Inoculations with the murine leprosy bacilli, in animals observed for various periods up to 2 years, resulted in foci of bacilli in various organs, found by smears and in tissue sections. These remained infective for mice for at least one year. Subinoculations, however, were not successful, the bacilli decreasing in numbers.—[From authors' summary.]

FRINK, D. A. Simple directions for photomicrography. *Tech. Bull. Reg. Med. Technol.* **31** (1961) 145-148; reprinted in *American J. Clin. Path.* **36** (1961) 369-372.

X The author's purpose is simply to help the neophyte to begin taking useful pictures with the microscope. Understandable and useful, enough concrete technical detail in "cookbook" form concerning illumination, cameras, film, exposure, and other factors is included to get one started in the proper fashion, so that "your time will quickly become devoted more to selection of appropriate material and less to the mechanics of actually taking the picture. . . . You will wonder why you ever thought photomicrography was so difficult." [Much good scientific and clinical data are being lost simply because workers do not attempt to keep good photographic records, believing them to be beyond their abilities. Modern techniques are relatively easy to master, and photography is much cheaper than in years past. Simple straightforward articles like the above can enable every worker in leprosy who owns a microscope and a camera to add immeasurably to our knowledge.]—J. A. ROBERTSEN

WILTBERGER, B. R. Medical color photography simplified. *Postgrad. Med.* **30** (1961) 274-279.

X A 35 mm. camera is recommended as the most practical for use because of its depth of field. The 20- or 36-exposure film used is economical, of fine-grain emulsion, comes in several varieties, and, most important, uniformity of development is insured. Films may be enlarged for publication, either in color or as black-and-white glossy prints. Color films made in the United States are discussed, including types which may be developed at home, and new high-speed varieties. Factors involving proper light sources for a given type of film, film speeds, and exposures are mentioned. Copying x-ray films and other transparencies, copying textbooks and journal pages, and photomicrography are

discussed. Useful reference tables on the requisites for using three different color films under numerous situations for medical photography are presented. In summary, the author points out that the new fine-grain color films make it possible for the physician to do his own medical macrophotography, photomicrography, and microphotography, and it is said that no one film presently available is sufficiently versatile to handle all medical photographic problems.

[It has long been established that a picture is worth a thousand words—this certainly holds true for good clinical photographs. It is obvious, however, that the picture must be an accurate reproduction of the phenomenon being recorded. Nothing is of less use than an inadequate photograph; worse yet, an inadequate medical photograph may be misleading. Because so many of the changes seen in leprosy are amenable to photographic recording, and because so few really top-drawer medical photographic records are available for teaching and study, despite the wealth of material, this article of Wiltberger's is reviewed here. Its purpose is to discuss several color films which simplify color photography for the physician, give him a means of recording medical discoveries, and provide him with an effective means of illustrating lectures and teaching sessions. It is, however, to be realized that the advantages of the color pictures themselves do not extend to the illustrating of articles, for they are very expensive to publish.]—J. A. ROBERTSEN