LEPROSY NEWS AND NOTES

Information concerning institutions, organizations, and individuals connected with leprosy work, scientific or other meetings, legislative enactments and other matters of interest.

CLASSIFICATION AT THE HAVANA CONGRESS

PORTION OF THE REPORT OF THE CLASSIFICATION COMMITTEE REJECTED BY THE FINAL PLENARY SESSION

[The following matter is the second part of the Committee's recommendations, taken verbatim from the mimeographed report as submitted to the final plenary session but rejected thereby. (See editorial in this issue.)—EDITOR.

CLINICAL SUBDIVISIONS OF CLASSES

It is proposed, by certain members of the committee, that the following clinical subdivisions of the two polar types and the indeterminate group may be employed for such purposes as comparing the effects of treatment on different clinical varieties of cases and tabulating group of cases.

Tuberculoid type (T)	
Elevated { major major	(TE) (Te)
Maculoanesthetic	(Tm)
Polyneuritic	(Tp)
Lepromatous type (L)
Macular	(Lm)
Infiltrative	(Li)
Diffuse (pure)	(Ld)
Nodular	(Ln)
Polyneuritic	(Lp)
Indeterminate group	(I)
Macular	(Im)
Polyneuritic	(Ip)

DEFINITIONS OF CLINICAL SUBDIVISIONS

Tuberculoid, elevated (TE or Te).—Cases of the kind already recognized generally as of the tuberculoid variety, identifiable as such by their essential morphological characters.

This group corresponds to the Nt group of the Cairo classification. The word "elevated" expresses the essential criterion

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for its inclusion within the tuberculoid type. The subdivision into major and minor is as specified in the Cairo scheme.

Tuberculoid, maculoanesthetic (Tm).—Cases essentially of the classical maculoanesthetic form. The lesions are macules in the dermatological sense, without elevation, usually hypopigmented, less often erythematous or hyperpigmented; they are usually well-defined, though irregular in outline and frequently becoming confluent. The macules exhibit the positive feature of nerve damage, evidenced by localized anesthesia or the results of the histamine and/or sweating tests. Histologically, these lesions are almost invariably tuberculoid in some degree when active, though in those which are regressing that change may be difficult to find and may require the study of serial sections. The lepromin reaction is almost invariably positive. These cases may arise by evolution from the indeterminate group.

Tuberculoid, polyneuritic (Tp).—Cases manifesting peripheral neuritis with or without skin changes of the kinds which characterize the two preceding varieties. Those without skin lesions, which correspond to the Na group of the Cairo classification, must usually be classified primarily on clinical grounds, including the history; some may be found bacteriologically positive in the nasal mucosa. In this variety the lepromin reaction is almost invariably strongly positive. Histological examination of the nerves is seldom practicable, but when it is done tuberculoid changes may or may not be found, according to the activity of the condition.

Lepromatous, macular (Lm).—Cases presenting lesions essentially of macular type, typically less defined in outline than those of the tuberculoid macular variety, without or with hypopigmentation but characteristically with some degree of erythema; bacilli are regularly present in greater or smaller numbers, often in typical globar groups; the lepromin reaction is as a rule negative; the histology is of lepromatous character. These cases may arise as such *de novo* or may evolve from the indeterminate group.

Lepromatous, infiltrated (Li).—Cases essentially presenting a further development of the lepromatous macular variety, with infiltrated and more or less elevated lesions.

Lepromatous, nodular (Ln).—Cases in which there are lesions of the nodular form.

Lepromatous, diffuse (pure) (Ld).—Cases of purely diffuse cutaneous infiltration as described by Lucio, histologically of

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lepromatous nature, without circumscribed skin lesions of any sort except for the lesions of so-called erythema necrotisans.

Lepromatous, polyneuritic (Lp).—Lepromatous cases in which there have appeared sequelae indicating involvement of the peripheral nerves. This group, practically speaking, corresponds to the old and erroneous concept of "mixed leprosy," and that of "complete leprosy" (Leloir), accorded in the Cairo classification the symbol LN. Cases presenting purely polyneuritic manifestations, without evidence of previous lepromatous involvement of the skin, will almost invariably be of the tuberculoid polyneuritic (Tp) variety, but it has been held that lepromatous involvement of the peripheral nerves may occur alone, without skin lesions; such cases will be difficult to identify without histologic evidence.

Indeterminate, macular (Im).—Cases manifesting macular (flat) lesions, which may be of three varieties: erythematous, erythematodyschromic, and hypochromic. The erythematous macules usually present themselves as congestive lesions, light pink or reddish in color, of variable size, sometimes with relatively sharp borders but generally not very sharply outlined. The erythematodyschromic macules are generally more diffuse, and their borders poorly defined; they consist of a mixture of erythema and hypo-, or sometimes hyper-, pigmentation, occasionally with a pink peripheral halo, with or without a sharp border. The hypochromic macules may be relatively sharply circumscribed, or they may be relatively diffuse; and it is not rare to see a macule of which one portion is sharply delimited and other portions have only a poorly defined border.

Indeterminate, polyneuritic (Ip).—Cases presenting one or more of the following lesions: zones of anesthesia, enlargement of nerves, muscular atrophy, and trophic alterations. In cases presenting zones of anesthesia, the disease is manifest by anesthetic areas with or without anidrosis. These differ clinically from examples of tuberculoid polyneuritis, in lacking the palpably enlarged nerve twigs which are often felt in the latter. In cases presenting enlargement of nerves, classification requires lepromin reaction, puncture for bacilli, or biopsy of the nerves. If the lepromin reaction is negative, doubtful, or weakly positive, and the puncture is negative for acid-fast bacilli, the case should be classified as Ip, unless histological examination demonstrates to the contrary. If the lepromin reaction is negative, and bacilli are numerous, the case probably belongs to the Lp category unless histological examination demonstrates to the contrary. Cases presenting muscular atrophy or trophic alterations are generally difficult to classify, but the diagnostic criteria are the same as for the cases already described.

OTHER CONSIDERATIONS

Degree of severity or extent.—The symbol of each clinical subdivision may be followed by the number 1, 2, or 3, to indicate the relative severity or extent in the particular case being described, as: Te 2, Tp 3; or Lm 1, Lp 2; or Im 2, Ip 1.

Evolution.—This may be designated as slow or rapid, stationary or progressive, reacting, etc.

Reactional conditions.—Among the different modes of evolution of the disease are the reactional states, the effects of which vary according to the type.

(1) Lepromatous reaction, of two main varieties: (a) classical lepromatous reaction, and (b) lepromatous reaction with erythema nodosum or other varieties of erythema multiforme, or the erythema necrotisans described by Lucio.

(2) Tuberculoid reaction, again of two main varieties: (a) the classical acute or subacute reaction (Wade) and (b) the more severe "reactional tubercuiold" (Souza Campos) or "borderline" reaction (Wade).

It should be pointed out (1) that the second variety of tuberculoid reaction is a prolonged condition, usually resulting from repeated reactions, the condition being susceptible to reversion to the quiescent state; also (2) that as a result of repeated severe reactions, a case may exceptionally undergo transformation to the lepromatous form, though often with stigmata which differentiate it from the primarily lepromatous condition. There is a possibility that a lepromatous case may, under exceptional circumstances, transform to the tuberculoid condition; but adequate evidence of this transformation has not yet been produced.

APPENDIX; INVESTIGATIONAL PROCEDURES

[The following material was prepared independently by certain members of the Committee and submitted by the chairman for inclusion in the report to the plenary session. It was overlooked in the preparation of the mimeographed report, but it is reproduced here by agreement of the chairman and other members.—EDITOR.]

BACTERIOLOGICAL EXAMINATION

1. Collecting material.—(a) From the skin: We recommend Wade's scraped-incision technique. (b) From the nasal mucosa: A speculum

should be used so that the lesion from which material is to be collected can be properly visualized.

2. Staining.—The commonly used Ziehl-Neelsen technique, or any modification dictated by practice, is recommended.

3. Results.—(a) Negative: When no bacteria can be found in at least 100 separate fields of the oil immersion objective. (b) Positive: When it is desired to indicate the number of bacilli found, the following scheme is recommended.

- (1) Rare (+): One bacillus, or less than one, per microscopic field.
- (2) Numerous (++): Bacilli seen in all microscopic fields.
- (3) Abundant (+++): Large numbers of bacilli or globi seen in all microscopic fields.

When the nasal mucosa is positive and there are no other manifestations of leprosy, the results should be interpreted with caution.

When special bacteriological examinations are made, the following should be considered: (a) Number of bacteria (degree of positivity); (b) morphology (granular or coccothrix forms, etc.); (c) disposition (isolated or in groups); (d) acid resistance (preserved, lessened, or lost).

HISTOLOGICAL EXAMINATION

1. Collecting material.—We recommend that the biopsy should always be done surgically.

2. Definitions.—(a) A lepromatous lesion is a specific granuloma characterized by vacuolated cells of Virchow. A reactive lepromatous lesion presents a perifocal exudative condition characterized by edema, hyperemia, polymorphonuclear infiltration, and eventually neurosis, associated with the specific granuloma.

(b) A tuberculoid lesion is a granuloma in which are found foci of epithelioid cells, ordinarily surrounded by lymphocytes. A reacting tuberculoid lesion is such a granuloma accompanied by exudative phenomena of hyperemia and edema which changes its characteristic appearance (vacuolization by edema).

(c) An indeterminate lesion is one presenting only slight perivascular, perineural, periglandular, and perifollicular lymphocytic infiltration.

3. Interpretation.—The histological examination is of absolute value in the diagnosis of the lepromatous type, but only of relative value in the tuberculoid and indeterminate types. In the last two the histological examination is of value only when correlated with the clinical diagnosis.

IMMUNOLOGICAL (LEPROMIN) TEST

1. Designation.—Reactions to the intradermal lepromin test, as follows: (a) The Fernandez reaction (early), and (b) the Mitsuda reaction (the classical delayed reaction).

2. *Technique.*—The routine dose to be used is 0.1 to 0.2 cc. In research it is necessary to specify the dose used.

3. Region of test.—Healthy skin, preferably on the anterioexternal surface of the arm, anterior surface of forearm, interscapular surface, anterior surface of thigh, or the anterior abdominal wall at the level of the umbilicus.

4. Antigen.—Insofar as clinical practice is concerned a categorical difference cannot be made between the "integral" (Mitsuda-Hayashi) antigen and "bacillary" (Dharmendra) antigen. We recommend that the latter be used for the reason that it can be standardized. In order to insure comparable results, we recommend that reliable institutions prepare the antigens.

For research purposes we recommend not only the abovementioned lepromins but also others obtained by different techniques (Fernandez-Olmos; purified protein of Dharmendra, etc.).

5. Reading results.—(a) Fernandez reaction: The results should be read 48 hours after the injection. The following interpretation and grading of the reactions observed is recommended:

- (1) Negative (--): Absence of halo, or a halo less than 5 mm.
- (2) Doubtful (\pm) : Halo greater than 5 mm. but less than 10 mm.
- (3) Positive (+): Halo with a good, well-defined erythematous infiltration, not smaller than 1 cm. to 2 cm.
- (4) Positive (++): Same type of reaction, but larger than 2 cm.

(b) Mitsuda reactions: Final reading to be made between 20 and 30 days after the injection. Consideration to be given to size, color, infiltration, and evolution. Interpretation and grading:

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- (2) Positive (+): Elevated, infiltrated reaction-lesion, with a rose to purplish color, progressive and persistent, 3 to 5 mm. in diameter.
- (3) Positive (++): The same, greater than 5 mm.
- (4) Positive (+++): When there is ulceration.

We recommend investigations in different countries as to: (a) Degree of positiveness in both reactions (Fernandez and Mitsuda) in the tuberculoid type, especially in reactive form. [This paragraph evidently incomplete.—EDITOR.]

TUBERCULOSIS AND LEPROSY; THE MYCOBACTERIAL DISEASES

COPIES AVAILABLE

The American Association for the Advancement of Science, in 1938, published under the above title the papers presented at a special symposium held in Denver, Colorado, in June 1937. Including a General Introduction by Wm. Charles White, and a Summary and Unification by Esmond R. Long, the volume contains 21 papers, all by authorities in their fields. Seven are included in the section entitled Pathology and Bacteriology of Tuberculosis, six under Tuberculosis in Animals, and six under Leprosy. This volume was reviewed, with abstracts of all the articles, in the third issue of THE JOURNAL, volume 7, 1939.

The National Tuberculosis Association has on hand a few copies of this book for which it has no specific use and would like to place them where they would be most useful. Doctor Long has suggested that among leprosy workers there may be some who might like to have the book, since it deals with the mycobacterioses in a broad and fundamental way. As long as the supply lasts anyone desiring a copy will be sent one, without charge, on request addressed to The Director of Medical Research and Therapy, National Tuberculosis Association, 1790 Broadway, New York 19, N. Y.