

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.

LEPROLOGICAL STUDY IN BRAZIL

The course of study in leprology given under the auspices of the National Leprosy Service of Brazil comprises six main topics, details of which have been furnished through the courtesy of Dr. Ernani Agricola.

- A) Introduction to dermatology
- B) Etiology and pathology
- C) Diagnosis and clinical characteristics
- D) Therapeutics
- E) Epidemiology and prophylaxis
- F) Organization and administration

Each topic is approached from theoretical and practical angles. The following synopsis indicates the scope of the instruction:

A) **DERMATOLOGY:** *Theory* — (1) General dermatological symptomatology; methods of examination; (2) cutaneous anatomy, physiology and pathology; (3) cutaneous syndromes of leprosy; (4) cutaneous neurological changes. *Practice* — Examination of patients; histopathological examination.

B) **ETIOLOGY AND PATHOLOGY:** *Theory* — (5) *Mycobacterium leprae*, the determining cause; possible predisposing factors, including malnutrition, poor hygiene, previous infections; influence of race, sex, and age; (6) sources of infection; modes of transmission; (7) portal and mode of entry; contagion; inheritance; (8) pathogenesis (incubation, lymphatic and blood stream propagation) latency; resistance; allergy and anergy; complicating diseases; (9) pathological research in leprosy. *Practice* — Obtaining and examining material from nares, skin, gland and sternal puncture; staining of bacillus; biopsies; serological reactions; Mitsuda test.

C) **CLINICAL:** *Theory* — (10) Typical and atypical forms, with emphasis on tuberculoid leprosy; (11) evolution of the disease; lepra reaction; (12) ocular and laryngeal lesions; (13) differential clinical diagnosis. *Practice* — Examination of dispensary and hospital patients; histamine, pilocarpine, and other tests of sensory innervation; classification.

D) **THERAPEUTICS:** *Theory* — (16) History of subject; mercury, arsenicals, other drugs; (17) chaulmoogra oil, origin and preparation; (18) dosage, mode of treatment with chaulmoogra preparations; (19) surgery and physiotherapy; (20) other general and local treatment. *Practice* — Technic of "plancha" and other modes of treatment; record keeping; physiotherapeu-

tic methods; preparation of chaulmoogra derivatives; examples of surgical treatment.

E) **EPIDEMIOLOGY:** *Theory* — (21) Bacteriological studies; (22) experimental transmission; leprosy in animals; (23) history of leprosy; (24) favorable conditions for endemic leprosy today; (25) geographic distribution; (26) epidemiological inquiries; (27) notification; importance of early diagnosis; (28) role of leprosaria in control; (29) isolation; (30) observation at home; (31) prophylactic treatment; conditions of parole; (32) precautions by healthy attendants; (33) popular education. *Practice* — Analysis of epidemiological records.

F) **ADMINISTRATION:** *Theory* — (34) Legislative program; social measures; (35) importance of the census and of epidemiological inquiries; (36) organization of a leprosy service; (37) leprosaria and hospitals; (38) preventoria; (39) dispensaries; (40) private agencies in leprosy control; (41) assistance to families of patients; (42) national and international aspects. *Practice.* — Demonstrations of organizational and administrative methods; making a census of an area.

LEPROSY FELLOWSHIPS: 1944-1945

Five physicians were selected for special study in the United States from June 1944 to June 1945 by the Office of the Coordinator of Inter-American Affairs. Those selected and their official positions are as follows:

Dr. Rubem David Azulay of Brazil, Assistant Professor of the Faculdade Fluminense de Medicina, Rio de Janeiro.

Dr. Luiz Marino Bechelli of Brazil, Physician in the "Departamento de Profilaxia da Lepra," São Paulo.

Dr. Jacinto Convit of Venezuela, Director of Leprosario Cabo Blanco.

Dr. Antonio Jascón of Colombia, Epidemiologist of the Anti-leprosy Dispensary, Santander.

Dr. Jorge Suárez of La Paz, Bolivia, Director of the Leprosy Campaign in Bolivia.

The entire group attended the language school at the University of Michigan and visited classes of particular interest. They then proceeded to the New York Post-Graduate Medical School for work in pathology, mycology, allergy, and dermatology. This period was temporarily interrupted for three months' study at Western Reserve University in biostatistics, epidemiology, and immunology, after which all but Dr. Jascón returned to New York.

Dr. Jascón is spending the last two months at the National Leprosarium, Carville, and at Tulane University. The others will join him for the last two weeks of their stay, and all will return to South America in late June.

A similar fellowship was granted Dr. Wallace Crawford of London, Ontario, Canada, by the Leonard Wood Memorial. He is Professor of Hygiene and Public Health at West China Union University in Changtu, Szechwan,

West China. Dr. Crawford joined the South American physicians in the program at the Post-Graduate Medical School and at Western Reserve University. Following this period he went to Carville for one month of study. He expects to return to his post in China as soon as possible thereafter.

WHO WALK ALONE

Harry E. Elias, Secretary of the American Leprosy Foundation (Leonard Wood Memorial) reports in the August 1944 number of the National Legionnaire that more than one thousand applications for Mr. Burgess' book *Who Walk Alone* had been received as a result of a story in a previous number of the Legionnaire, and that 12,000 copies of the folder, telling of the work of the Memorial, had been requested by Legion department adjutants for distribution to posts.

KALAUPAPA

With the permission of the Honolulu Advertiser and the United Feature Syndicate, obtained through the interest of Dr. Eric A. Fennel, the entertaining and instructive articles on Kalaupapa and its patients written in 1937-38 by Ernie Pyle have been mimeographed for limited distribution especially among patients and staff of the institution.

LEPROSY IN HAWAII: BRIEF STATEMENT OF ACTIVITIES FOR THE FISCAL YEAR ENDED JUNE 30, 1944

The Board of Hospitals and Settlement is gratified to report *the continuing decline of the disease of leprosy in the Territory to a new low of 378 active cases: 25 at Kalihi Hospital and 353 at Kalaupapa Settlement, as of June 30, 1944.* This is a decrease of 245 cases or 39.3 per cent, from the total of 623 on July 1, 1931, the date of the organization of this department.

New cases of leprosy certified for the year number 34, this figure corresponding to the average for the five year period.

Patients on temporary release increased from 176 to 179 during the year.

Non-leprous children of leprous parents, wards of the Territory during their minority, number 90 at the end of the year, a new decrease of 6 for the period, with but one birth.

The following *census of all groups* under the jurisdiction of the department is taken as of June 30, 1944:

Active patients—(Kalihi Hospital, 25; Kalaupapa, 353)	378
Patients on temporary release—(Kalaupapa, 30)	179
"Kokuas"—(Kalaupapa only)	7
Non-leprous children of leprous parents	90
 Total	 654

The exigencies of the war have greatly emphasized the isolation of Kalaupapa Settlement, but despite this condition with its various ramifications, the morale of the people is high and the cooperative spirit splendid.

For the Fourth and Fifth War Loan Drives, the total subscription at Kalaupapa amounted to \$35,700.00.

Notable activities include: a sharp increase in the raising of poultry and hogs, and of fruit and vegetables which are now sufficient for local needs; improvement of the cattle herd; and a greater and more effective participation by the patients in work activities throughout the Settlement under an improved wage scale.

The medical service at Kalaupapa has been broadened in scope, and hospital facilities improved by the transfer of equipment from Kalihi Hospital and certain additions to the hospital buildings.

The foregoing activities and improvements will definitely be of continuing benefit in the postwar period.

Present plans for work to be undertaken after the war call for the further development of agricultural and industrial features, to the end that a greater degree of self-sufficiency may be established on a permanent operating basis.

Kalaupapa is unique on two counts, first, *no housing shortage exists* due to the continuing decline of the inmate population and, second, wartime rationing has not been odious as rationing has been in force for many years. —H. A. KLUEGEL, *Superintendent of Hospitals and Settlement*. [From KALAUPAPA, a mimeographed booklet, privately printed by Dr. Eric A. Fennel in Honolulu in 1944.]

POSTWAR ANTI-LEPROSY PROGRAM

At a luncheon sponsored by the American Mission to Lepers at the University Club, New York, plans were announced concerning the postwar anti-leprosy program, involving the expenditure of \$500,000 over a five year period to launch a planned and concerted attack on the disease. According to an announcement from the American Mission to Lepers, the educational and training aspects of the problem concern every religious denomination and health or social agency that comes into contact with any of the millions of leprosy victims throughout the world. Among the speakers at the luncheon were William Jay Schieffelin, Ph.D., Emory Ross, D.D., Dr. Eugene R. Kellersberger, all of New York, and Dr. Jean Alonzo Curran, Brooklyn. The program will include the establishment of training centers for native Christian personnel in India, China, Burma, Belgian Congo, Ethiopia, Korea, Thailand, and Liberia. The centers will be located wherever possible near leprosariums already in existence or awaiting construction. The trainees will receive thorough instruction on the subject of leprosy and will then move out into the towns and villages to carry on a program of health education, personal and community hygiene, medical care and treatment among the population.

These workers, comprising a steadily growing army to fight the disease, will be drawn from schools and colleges, from among patients in whom the disease is arrested and from among healthy children of infected parents. They will be given scholarships and salaries. The medical consultants for the program appointed to date are Dr. Harold W. Brown, professor of parasitology, Columbia University College of Physicians and Surgeons, New York; Dr. Jean Alonzo Curran, Brooklyn; Dr. Howard Fox, New York; Dr. Victor G. Heiser, Bantam, Conn., medical consultant, National Association of Manufacturers, formerly president, International Leprosy Association; Dr. George W. McCoy, New Orleans, professor of preventive medicine and public health, Louisiana State University School of Medicine; Janet Welch Mackie of the Health and Sanitation Division, Office of Coordinator of Inter-American Affairs; Dr. Henry E. Meleney, New York, and Col. Richard P. Strong, M.C., adviser on tropical diseases, Army Medical Center, Washington, D.C. The sum of \$450,000 is considered the minimum needed for the establishment and maintenance of the training centers for a period of five years. Increasing support from within the respective countries will be sought, with the expectation that the work will eventually become self-supporting and indigenous. The remaining \$50,000 will be used for a campaign of mass education through audiovisual materials adapted to the special needs of each area. Each project will be under the sponsorship of an established church agency. The denominations cooperating directly or indirectly include the Church of the Brethren, Congregational Christian Churches, Disciples of Christ, Evangelical and Reformed Church, Lutheran Church, Mennonites, Methodist Church, Northern Baptist Convention, Presbyterian Church in the United States of America, Protestant Episcopal Church, Reformed Church in America, Society of Friends, United Church of Canada, and United Presbyterian Church of North America.—[From the *J.A.M.A.*, vol. 126 (1944) p. 1161.]

CONFERENCE ON LEPROSY HELD AT PRETORIA
LEPER INSTITUTION ON SEPTEMBER 18-19, 1944
MINUTES

This Conference, held at the instigation of the South African Leprosy Advisory Council was attended by Dr. P. Allan (Secretary for Public Health and Chairman of the Leprosy Advisory Council), Prof. W. Craib, Prof. E. H. Cluver, Prof. A. Pyper (all members of the Leprosy Advisory Council); Drs. P. Thornton (Medical Officer, Emjanyana Leper Institution), Drewe (Mkambati Leper Institution), de Wet (Amatikulu Leper Institution), Drewe (Swaziland), Nixon (Basutoland), Gelfand and Burnet (Rhodesia), du P. le Roux (Assistant Health Officer, Capetown, ex-officio member Leprosy Advisory Council), Wood and P. A. Winter (Pretoria), A. R. Davison (Superintendent, Pretoria Leper Institution).

DR. ALLAN welcomed the members of the Conference and invited free discussion of the problems associated with leprosy with special reference to the correctness or otherwise of the present policy of early discharge of patients in whom the disease was apparently arrested.

DR. DAVISON then presented a series of 29 patients in whom the disease had been classified as 4N. Were they fit to be discharged or not? Twenty-two were found fit to be probationally discharged. In the ensuing discussion DR. CLUVER felt that the discharge of females of child-bearing age should be stricter owing to the possibility of infecting children if recrudescence should occur. DR. DREWE (Mkambati) stated that in his experience cases did recrudescence as a result of pregnancy and child-birth. DR. DAVISON stated that of 53 patients at the Pretoria Institution only 12 showed signs of recrudescence as a result of child-birth.

DR. NIXON stressed the propaganda value of discharging patients in whom the disease was arrested, as early as possible.

DR. DAVISON then demonstrated 12 patients who had been regarded as fit for discharge but had been kept in the Institution on humanitarian grounds. There had been 15 such patients and of these 12 had recrudesced. They had routine attention and feeding but no specific treatment. Twelve patients from Ermelo were shown. They had been found to be recrudescence on a recent reexamination of 38 discharged patients in the Ermelo district.

DR. DAVISON then read a paper: "Criteria of Cure."

DR. LE ROUX referred to the previous policy of discharging only patients in whom the disease was burnt-out. The introduction of treatment with chaulmoogra oil had made a difference to the discharge rate. Increased rate of discharges had led to voluntary admissions and a decrease in the average duration of disease before admission. It was unfair to the individual to extend the period of segregation if symptoms had disappeared. He advised that robust individuals like mine boys should be traced to find out if they recrudesced.

DR. WINTER said that the observation of recrudescence in the Institution pointed to specific treatment being a greater factor in preventing relapses than good food and environment. He suggested that some discharged patients be given injections experimentally, say once monthly, by district surgeons.

DR. CLUVER on ascertaining from DR. LE ROUX that we had no evidence that recrudescence cases were a public health danger suggested that the criteria for discharge should not be made stricter.

DR. DREWE outlined his policy at Mkambati. Patients coming for surgical treatment and showing new macules were not readmitted but allowed to go home after treatment. Patients finding conditions at home difficult often relapsed. They came back to the institution and a month's or 6 weeks' treatment cleared symptoms and they were discharged thus saving the expense of continuous detention.

DR. CLUVER agreed with this policy stressing the fact that if patients knew they could come for only a few weeks they would come more readily and also encourage others to come.

DR. DREWE, Swaziland, inquired regarding the machinery of control of discharged patients quoting an instance where a discharged patient worked in a bakery for a number of years.

DR. LE ROUX said that a patient was discharged only on the undertaking that he would not handle food, etc. It was very difficult to maintain contact with such a person and suggested that a small grant of say five shillings be made to attract such a person to report to the magistrate.

DR. GELFAND raised the question of tests for a cure and stated that if the sedimentation rate showed a figure of more than 10 the patient should be regarded as ill and not fit for discharge. The iodide test and the Wassermann reaction should both

be negative before discharge. In his opinion the recognition of leprosy in the field should be a function of medical men and not of native orderlies.

DR. LE ROUX quoted from the *Tropical Disease Bulletin* of October 1943, relative to the policy of compulsory segregation. He suggested that a survey be made to ascertain whether recrudescence is associated with the stage of the disease or with evidence of malnutrition.

The first session thereupon adjourned for lunch.

The afternoon session was held at the Film Bureau in Pretoria. A color film suitable for medical students and doctors was shown.

PROF. PYPER emphasized the great value of these films for teaching purposes. PROF. CRAIB asked that the film be shown to medical students every year at the various universities. DR. DAVISON explained that the color film was an original and until such time as a copy could be made it was unwise to allow the film to pass through too many hands. It was shown to students who attended for instruction at the Pretoria Leper Institution. DR. CLUVER remarked that the film position was becoming easier and a copy should be made as soon as possible.

A working copy of a black and white propaganda film suitable for showing to native audiences was then shown. Criticisms were made to which attention will be given in revising the film. DR. GELFAND asked if a copy of the film could be obtained for the Southern Rhodesia Government.

The meeting adjourned at 4:55 p.m.

SECOND SESSION: SEPTEMBER 19, 1944

DR. DAVISON opened the session by replying to the previous day's discussion on "Criteria of cure." It was intended to do a controlled experiment on 4N cases detained at the Institution with the object of ascertaining the value of continuous treatment in preventing recrudescence. He suggested that the district surgeon at Pretoria might be requested to give monthly injections to discharged arrested cases. He stated that male patients becoming recrudescence were just as liable to spread disease as females. Those who had to be readmitted for recrudescence were usually cripples in low state of health. Healthy mine boys do not tend to recrudescence after discharge. He also felt that patients in whom the disease has shown recent activity should not be discharged immediately signs cleared up. He then stated that in his experience the sedimentation rate had no relation to the degree of activity of leprosy. As regards the Wasserman reaction: Many lepers were Wassermann-fast so that it did not serve a useful purpose as a criterion for discharge. He agreed that the potassium iodide test for arrest should be investigated.

DR. LE ROUX replied that he had used potassium iodide with disastrous results in some cases. He felt that better control of patients outside the Institution should be aimed at and suggested a yearly examination by a leprologist.

DR. CLUVER pointed out that patients outside the Institution were supposed to be under the control of the district surgeons but that this service was apparently not satisfactory and he therefore suggested that some scheme be thought out whereby district surgeons would have better facilities for seeing patients.

DR. DREWE said that in Swasiland they intended to appoint leprosy inspectors, i.e. to have people who know leprosy go into the field. It was agreed to recommend that:

- 1) further investigation be made of a series of probationally discharged patients to determine the frequency of recrudescence,

- 2) tests of arrest be investigated,
- 3) better control of probationally discharged patients be instituted, preferably by periodic examination by a leprologist,
- 4) district surgeons' courses be resumed as soon as possible,
- 5) district surgeons be informed of the rate of recrudescence and of the signs,
- 6) the stipulation that district surgeons revise their knowledge of leprosy be enforced,
- 7) the question of native inspectors be investigated,
- 8) a copy of the color film on leprosy be made available for universities and medical association meetings,
- 9) the universities be asked to devote more time to the study of leprosy,
- 10) framed photographs of leprosy lesions be issued to the universities.

DR. WINTER then demonstrated the routine subcutaneous and intradermal injections as used at Pretoria Leper Institution.

DR. DREWE demonstrated his method of injection. He passed a long thin needle under a macule subcutaneously and injected as he withdrew, using seven cc. of ethyl esters at a time. He usually injected 14 cc. per patient at weekly intervals provided they showed no sign of reaction. Normally the macule injected showed an inflammatory reaction for a few days. If a sterile abscess formed it was aspirated. No instance of sloughing had occurred. Macules disappeared in two to three weeks. The injections were painful but the patients came back for more treatment because they saw results. He considered the advantage of the method to be the local attack on the bacilli in the nerves leading to the lesion. The Conference was impressed by the technique and agreed that the high dosage was a correct policy.

DR. DAVISON demonstrated a case in a European male who had been admitted from the army with brown macules on his back which showed no anesthesia. The peculiarity of the case was that anesthesia of his fingers varied from week to week. As a result of these observations it was proposed to investigate this phenomenon of variable anesthesia more fully.

A case of *Erythema nodosum leproticum* was shown in a female. Nodules repeatedly appeared and disappeared on the face, forearms, and legs. There was a relationship between the appearance of nodules and the menses.

DR. DAVISON then demonstrated the classification of leprosy and explained the system used in South Africa at present.

A European female was demonstrated to the Conference with reference to home segregation. The type of disease was lepromatous and bacillary positive. Strong representations had been made to have her segregated at home. He also read some notes on compulsory segregation.

DR. LE ROUX gave a résumé of the history of leprosy in South Africa mentioning how home segregation was first granted in 1879. Leprosy had been known since 1726 but only since the beginning of this century had good control been applied.

A discussion followed with reference to the granting of home segregation to the European female demonstrated earlier in the proceedings. In this particular instance the patient was intelligent, and home conditions were of a sufficiently high standard to allow such a procedure. However, in the five cases to which home segregation had been granted previously there had been instances of disobedience of the rules.

DR. CLUVER felt that, though he was against the principle of home segregation, it was morally indicated that this case should be granted such facilities since they had been granted to the others.

PROF. CRAIB felt that inquiry should be held whenever any question arose of breach of the rules. He asked that the whole matter of home segregation be again brought up at the next meeting of the Leprosy Advisory Council.

PROF. PYPER was definitely against the granting of home segregation since people naturally do not abide by the regulations; this particular patient constituted a real danger to the public because of her positive bacillary condition. After much discussion in which the dangers of letting lepromatous cases out was emphasized, the Leprosy Advisory Council went into committee.

DR. LE ROUX moved that: Mrs. V. (the patient under discussion) be granted home segregation provided that it be for only one year; that her 16 year old daughter be not allowed to live in the house; that the patient use only a discharged case from the institution as a maid; and that all other cases on home segregation be reviewed. PROF. PYPER voted against; DR. CLUVER and DR. LE ROUX for; PROF. CRAIB did not vote.

The second session then adjourned for lunch.

DR. DREWE, Mkambati, opened the afternoon session by reading a paper on "Some of the problems of leprosy." In the discussion that followed DR. DAVISON endorsed DR. DREWE's observation that the lepromatous lesions cleared up in a patient dying from pulmonary tuberculosis.

PROF. CRAIB stated that on the basis of this observation large doses of tuberculous endotoxoid should be tried.

DR. GELFAND observed that the figures of blood pictures which DR. DREWE showed were the same as those for non-lepers in Rhodesia.

DR. DAVISON thanked DR. DREWE for his good paper and for his demonstration of technique which was certainly most stimulating.

A paper of DR. MOISER on cockroaches as possible vectors in the transmission of leprosy was read by DR. WINTER, DR. MOISER not being present.

Discussing this, PROF. CRAIB said that it should be ascertained if the scar left by the bite of the cockroach alone were positive and the surrounding skin negative and also if the scar were positive for bacilli in neural cases.

It was decided not to read DR. THORNTON's paper but to circulate it.

DR. DAVISON then read a paper on the "Decolourising of *M. leprae*." (See the *Journal*, vol. 11, p. 49.)

PROF. PYPER agreed that mistakes were often made with diphtheroids and that smears should be carefully decolourised.

DR. LE ROUX then suggested that the proceedings of the Conference should be published in the *International Journal of Leprosy* and the *Tropical Diseases Bulletin*.

PROF. CRAIB expressed the opinion that this type of conference should be held yearly at different venues.

DR. LE ROUX stated that it should be done by the Leprosy Advisory Council and arranged to be held in conjunction with boards.

The meeting concluded its business at 4:30 p.m. DR. WINTER kindly officiated as Secretary to the Conference.

ABSTRACTS OF PAPERS PRESENTED

CRITERIA OF CURE

We first became uneasy about our criteria of cure when in the course of a routine examination we found that there were 15 probationally discharged cases in the institution detained on humanitarian grounds and of these 15 cases 12 had become reactive.

Present criteria of cure. At present we have not laid down any standard of cure or arrest but our Annual Boards are guided by two principles: A) Bacteriological, B) Clinical.

A) Bacteriological: The patient must have a minimum of 12 negative smears taken at monthly intervals. This must include skin smears taken according to the method described by Wade as well as nasal smears. This bacteriological standard is rigidly adhered to except in the case of a new admission who is obviously an "old burnt-out" leprosy patient.

B) Clinical: The patient must show no raised or red macules. The macule must not show signs of having spread. No new macules must be evident. In short the case must appear quiescent when examined by the Board though activity may have been evident even a short while before.

Reactivity. We consider a case to be clinically reactive if, after a stage of quiescence, new lesions break out or if old lesions become red or raised.

Our probationally discharged patients are reexamined by the district surgeon every six months for the first three years and then every twelve months for the next three years.

In the Ermelo area there were 51 patients on the register. I examined 38 and found 12 to be recrudescant, *i.e.* approximately one-third of the patients examined.

Practically all the cases I examined were ill-housed, ill-clothed, and ill-fed. I found evidence of vitamins A and B deficiency in the families, particularly the children, though this was not marked in the patient.

If further investigation shows that such a high proportion of patients become recrudescant it is certain we will have to take steps to correct the position. I suggest the problem will have to be approached from two angles: A) Our criteria of cure or arrest must be made stiffer; B) The supervision of the probationally discharged patient must be stricter.

A) *Criteria of cure.*

1) No patient should be considered for discharge if any trace of clinical activity has been found during the previous twelve months, *i.e.* the discharges should come entirely from our 3N group. This group comprises patients who show no activity when seen by the Annual Board.

2) A minimum of 24 monthly negative smears of which at least 8 should be skin smears.

3) No patient should be discharged unless x-ray reveals no dead bone. (Perhaps untreated bone lesions were the predisposing causes for reactivity.)

4) We intend investigating whether all patients should not be lepromin-positive before discharge.

B) *The supervision of the probationally discharged patients should be stricter.*

1) Patients should be reexamined every 3 months by the district surgeon.

2) The district surgeon should be given the discharge chart so that he can detect new lesions. This chart is sent out with every patient but is apparently filed by the magistrate and never seen again.

3) The district surgeon should be educated by pamphlets, by demonstration, and by films to recognize the signs of reactivity.

4) Every probationally discharged patient should be examined by a leprologist once a year. As these patients cannot be seen in their homes each should be compelled to report to the magistrate on a certain day each month. This will be impracticable unless we give a maintenance grant to attract the patients in at regular intervals.

—A. R. DAVISON

CLASSIFICATION OF LEPROSY

Because the classification recommended at the Cairo Conference of 1938, in which numbers following the capital letters indicate the extent of the lesions, does not indicate the degree of activity, it must be modified for Board purposes. At the Conference of Medical Officers held at the Pretoria Leper Institution in October 1941, a workable modification was evolved: The numerals 1 to 4 were placed in front of the letter to show descending degrees of activity, *e.g.* 1L = advanced active lepromatous; 2L = slightly active lepromatous; 3L = earliest recognizable signs, and 4L = arrested. For neural: 1N = very active neural; 2N = slightly active neural; 3N = apparently arrested, and 4N = arrested.—A. R. DAVISON.

LEPER INSTITUTIONS

This discussion relates to the type and administration of institutions suitable for South Africa where the prevalence is low (1 to 2 per 1,000), segregation is compulsory, and funds are adequate.

The *Out-patient Treatment Center* is not suitable because of distance and sparseness of population. It is also contrary to the policy of segregation. The *Leprosy Village* is subject to objection because of infertility of the soil and increase in opportunity for infection particularly of children; furthermore, crippled patients turn to liquor selling and other objectionable pursuits.

The best type is the *Settlement* with hospital attached. It should house at least 1,000 patients and may be attached to a mission hospital or sanatorium for tuberculosis. The site should be within ten miles of a town. Small holdings should be allocated to patients and their produce purchased by the institution.

The *Staff* should include a medical superintendent, a matron, two medical officers, three sisters, and sufficient additional nurses to train patients as orderlies. There should be a gardener-farm-manager and an adequate staff of clerks, overseers, police, and other necessary personnel. A description is given of the most suitable types of buildings and their lay-out. The final section deals with the administration of such a settlement under tribal conditions, and in detribalized areas such as the Transvaal.

—A. R. DAVISON

COMPULSORY SEGREGATION

This paper emphasizes that while leprosy is usually of low infectivity it may become highly infective under conditions of "—poverty, dirty social habits, and starvation." The outbreaks in the Sandwich Islands (1848), New Caledonia (1865), and Nauru (1920) are cited. The resolutions of the Cairo Congress concerning segregation are quoted. Prevalence in Southern Rhodesia is given as 5.4 per 1,000; whereas in South Africa with a better segregation policy it is less than 2. There were 198 Europeans in South African institutions in 1916; today there are 74. There were 345 Cape Colored in institutions in 1913; today there are 120. The figures for the natives show some reduction also, but not to the same extent.—A. R. DAVISON.

SOME OF THE PROBLEMS OF LEPROSY

After 25 years of experience the speaker finds leprosy more baffling than when he commenced work. The portal of entry may be through the skin but he has never observed leprous lesions spreading directly from cuts which are so numerous on the skin of African patients. If through abrasion of the mucous membranes of the nose, the common practice of snuff-taking among natives gives abundant opportunity. Possibly the tonsils, so often diseased in leprous patients, provide a portal of entry, al-

though numerous smears examined by him have always been negative. Enuclated tonsils should be examined.

The pathogenesis of leprosy is likewise in doubt. Pardo, Castello, and Tiant (*J.A.M.A.* April 17, 1943) stress the variable defensive capacity of tissues. If weak, there results a chronic infiltrating granuloma; if the defense is good, the tuberculoid form results. The whole question is not made simpler by doubt as to what is meant by a chronic infectious granuloma, which the speaker considers equally applicable to the leproma and the tuberculoid lesion. There is only one leprosy (Leloir) and we should view its pathology as varying according to the patient's immunity and resistance.

First there is the small-celled infiltration followed by a battle of the tissues swinging to the tuberculoid on the one hand or to the lepromatous arrangement on the other. What are the underlying factors in determining the outcome? Is it long years of malnutrition? A lack of salts? A deficiency of iron? Dr. Fox (S.A. Institute for Research) maintains that there is a serious lack of calcium in the diet of the natives in the Transkei. Is phytic acid present in the meal and if so, does it combine with calcium and iron making insoluble compounds resulting in greater deficiency?

A curious feature is the disappearance of lepromatous nodules shortly before death when the patient is dying of pulmonary tuberculosis. The explanation of this is completely unknown. It may be, as Dr. le Roux suggests, due to a complete lack of resistance.

The speaker urged that leprosy patients should be treated along the same lines as those with tuberculosis to encourage and strengthen the tuberculoid type of resistance on the part of the tissues. He discusses each type of the disease and the type of therapy which appears rational in each.

In summary:

- 1) An endeavor has been made to review the present position with regard to infection with Hansen's bacillus and the tissue reaction which it incites.
- 2) An attempt has been made to interpret clinical signs in the light of the pathology of the disease.
- 3) A plea is made for treatment on the basis of increasing resistance.

—F. S. DREWE

ACID-FAST OVAL BODIES IN COCKROACHES

It has been found at Ngomahuru that 69 per cent of all cockroaches (mostly of species *Blattella germanica*), whether caught inside the hospital grounds, or taken from Kraals in the native reserve, contain acid-fast oval bodies in the gut, or in the faeces.

These oval bodies are very regular in appearance and outline, about 1/1,500 inch in length. They stain a deep red with carbolfuchsin, and are very acid-fast. They are very numerous in some roaches, and altogether absent or scanty in others. They occur in both male and female roaches. Most of them appear homogeneous in structure, but have a containing envelope, which bursts occasionally, displaying the contents, which are small rods or granules. Some present a dark band longitudinally or transversely. A few are sausage-shaped. Some are vacuolated. Some are ribbed. When treated with 2 per cent HCl, certain of them contract into a rod, with very fine cilia at one or both ends, the cilia being unstained.—B. MOISER.

THE CAMPAIGN AGAINST LEPROSY IN THE TRANSKEI

The type of treatment given at the Emjanyana Leper Institution is not novel and this paper deals only with the result of the campaign against leprosy in the Transkeian Territories, excluding Pondoland, during the past ten years.

The native population is estimated at 1,500,000 (1944). The number of admissions in successive years commencing with 1935 was as follows: 160; 217; 207; 256; 174; 201; 181; 172; 131; 145. That is, 184 fewer cases were admitted in the years 1940 to 1944 than in the preceding five years. This may indicate a real decline or reflect merely the fact that there have been fewer practitioners to weed out the cases.

The number of patients seen by the Board each year commencing with 1935 was as follows: 598; 601; 649; 663; 634; 670; 608; 600; 543; 569. The following numbers were discharged as arrested: 114 (1935); 146; 193; 208; 203; 144; 249; 138; 181; 146 (1944). Recrudescences were as follows: 18 (1925); 8, 4; 13; 12; 31; 26; 23; 30; 35 (1944). Deaths were: 70 (1935); 79; 54; 87; 64; 43; 59; 69; 55; 71 (1944).

The average length of stay outside, in those patients readmitted in the last four years, was from two and a half to three years.

In summary, the author concludes the following: a) the campaign against leprosy in the Transkei (excluding Pondoland) is apparently meeting with a small degree of success; b) the present methods of treatment are fairly successful; c) the number of recrudescence cases is increasing; d) the methods of surveillance of probationally discharged cases needs revision. —P. A. THORNTON.