

## Reviews

### **Leprosy in India**, Vol. VIII, No. 2, April 1936.

This issue includes an article by J. Lowe on “Modern Thought on Leprosy and its Bearing on Mission Work in India”. He states:—

“It is now being realised that the control of leprosy is an exceedingly complicated problem, quite as much a social and economic problem as a medical one. Leprosy is a disease not only of individuals but of the community, and its control demands measures involving the whole community, and not merely the sufferers from leprosy. Its control means better hygienic conditions, better food, better housing, better sanitation, better education, particularly in health matters. All these mean more money, but a still more vital need is a real social awakening of the people. India will not be free from leprosy until the people of India have a really earnest desire to free their country from the disease and are prepared to work to that end. This day is not yet, and until these things are brought about, we can do a certain amount of valuable work but we cannot really get to grips with the leprosy problem of India.”

In the July number (Vol. VIII, No. 3) is a very useful article by Lowe on “Macules in Nerve Leprosy”, which we hope to reprint in the next number of the Review.

Dr. Dow reports on “Late Results of Nerve Decapsulation in Leprosy”. He concludes as follows:—

"In the light of the results which have followed upon operation in thickened nerves, we now feel justified in resorting to surgery only in cases of nerve abscess, and only exceptionally in these cases is it necessary to decapsulate the nerve."

### **Batavian Leprosy Conference.**

This conference was held in the Leprosy Research Institute on 18th February, 1936. In a paper by Dr. Lampe, the Director of this Institute, he says:—

"The development of progressive leprosy is not governed exclusively by infection or superinfection. It is possible that also local conditions exercise an influence upon the generation of leprosy foci. This deserves further inquiry. An extensive investigation, therefore, has been initiated on Java, in 6 regions where leprosy is frequent, and in 9 regions where it is rare, covering 150 families chosen at random, comprising about 900 individuals. Particular attention is being directed to the geological character of the soil, the disposition and utilization of the garden compounds, the housing condition, the manner of dress and personal cleanliness, the physical condition of the persons concerned, and their dietary. The investigation of the dietary by daily control is to be continued for fully a year, in order to obtain seasonal and annual averages. Undoubtedly co-incidentals will be established, though it is hardly likely that more definite interpretation will be possible; for in this respect, at least as regards the prophylaxis against progressive leprosy, we are still groping too much in the dark."

Another paper stated that:—

"Amongst the 650,000 inhabitants 654 lepers were observed, which amounts to 0.1 per cent. The distribution of the disease is capricious, nor does it seem to hold any relation to difference in geological conditions. The proportion of male to female lepers is as 2.7 : 1. Classified according to age, there were counted 123 cases below the age of 20, and 408 above that age, whilst 258 individuals stated that they had become affected prior to their 20th year. The investigation proved that of 1398 contacts 93 had contracted the disease through infection, and of these very early cases 66 individuals stated that they had already been affected with leprosy before they were 20 years of age. As regards the source of infection in these 93 contacts, it was particularly remarked that infection transmitted by brothers or sisters was quite frequent (in 40% of these cases)."

An interesting paper on "*Rat Leprosy*" by Lampe and de Moor, mentions that their "efforts to cultivate the originator of rat leprosy were unsuccessful. Cultures of acid-resistant micro-organisms were isolated on the medium of Löwenstein out of the subcutaneous lymph nodes of 200 wild rats with rat leprosy and out of the subcutaneous closed granulations of 30 white rats with experimental leprosy or with 'soil leprosy,' in 20% of the cases. Cultural investigation and animal experiments proved that these were cultures of acid-resistant saprophytes that very probably had entered the inoculation material from the skin and the hairs of the

rats at the time of preparation. Out of 30 mud samples—with which 'soil leprosy' could be produced—similar cultures of acid-resistant saprophytes could be isolated in 100% of the cases, by means of Söhngen's method." In an analysis of 225 autopsies in the Semarang Leprosarium the causes of death were mostly tuberculosis and pneumonia. The distribution of the causes of death were almost the same as in the general population.

**Revista de Combate á Lepra**, Vol. 1, No. 1, Sept. 1936.

This is the official organ of the Federation of Leprosy Relief and Prophylaxis Societies, whose function is to co-ordinate all the work done by the different leprosy relief agencies throughout Brazil. This is the first number of the Review, which is to be published quarterly with the collaboration of all the chief Brazilian leprologists, such as E. Rabello, de Souza-Araujo, etc.

In a leading article Prof. E. Rabello particularly emphasises the necessity for the proper organisation of the campaign for *saving the children*, and for the care and control of the families from which lepers have been isolated. Details are given of antileprosy work in the various states of Brazil. Whereas in the states of Pará, Sao Paulo and Minas Geraes the State Governments and private agencies have provided leper colonies, dispensaries, hospitals, etc. of the most modern types, practically no leper work has been done in most of the other States. A report is given of a 60 days propaganda campaign in Parahyba, Pernambuco and Bahia which resulted in £2,000, £3,000 and £2,500 being raised in these States respectively. It is estimated that there are about 50,000 lepers in Brazil of which 19,734 are registered and 5,914 are segregated. The chief leprosy foci are in the States of Sao Paulo 15,000, Minas Geraes 15,000, Pará 4,000. There are in Brazil 20 leprosaria with 8,675 beds, but they calculate that they require hospital accommodation for over 23,000 cases. There are 8 "Preventoria" but only some 500 children have so far been collected into them. A programme of the courses in leprology to be given in the Faculty of Medicine at Rio de Janeiro by Prof. H. C. de Souza-Araujo is given. J. W. LINDSAY.

**Sodium Thiosulfate in Treatment of Scabies.** Scabies is so commonly an accompaniment of leprosy that this form of treatment described by G. V. Kulchar and W. M. Meininger in the *Archives of Dermatology and Syphilology*, Vol. 34, No. 2, Aug. 1936, may be of interest.

"The treatment is carried out as follows: The patient is directed to take a soap and water bath. After he is thoroughly dry, a 40 per cent. aqueous solution of sodium thiosulfate is applied over the entire body except the head and face; particular attention is paid to the areas between the fingers, flexural surfaces of the wrists, breasts, abdomen, buttocks, thighs and external genitalia. Fifteen minutes later 4 per cent. hydrochloric acid is applied in a similar way, and one hour later the applications are repeated in the same order. The procedure is repeated the next day; on the following day the patient again bathes and changes to fresh clothing. All bed linen, sleeping garments and clothing previously used are sterilised by boiling for five minutes. As the solutions are stable, they may be made up in large quantities and dispensed as needed. Four ounces (118.92 cc.) of each solution is sufficient to carry out the treatment.

"We used sodium thiosulfate in treating fifty patients with scabetic infestations of all degrees of severity. As a control, fifty patients were treated with an ointment prepared in the manner described in Greenwood's article. The diagnosis was made on the basis of the morphology and distribution of the lesions, the presence of burrows and the history of nocturnal itching. The ages of the patients who were treated by the use of sodium thiosulfate varied from 7 months to 62 years. On examination of the patients in this group one week after completion of the treatment, all were found to be free from evidence of scabies, although one patient returned with a relapse or a reinfection five weeks after the treatment, having been free from lesions during the intervening period. Contrary to instructions, five patients repeated the regimen of treatment two times and one four times before returning for examination. In the latter instance a mild sulfur dermatitis occurred after the eighth application of the solutions. No other dermatitis reactions occurred.

"The ages of the patients treated with the ointment varied from 1 year to 73 years. Thirty-one of the patients showed no evidence of scabies after one application of the ointment. For eleven, two applications, and for three, three applications, were necessary to effect a cure. For one patient four applications of the ointment were required before a cure was attained. For four patients treatment was not effective, although two of them used the treatment only once and one twice, and one carried out the routine three times without success. Ten of the patients acquired a sulfur dermatitis, six after one application and four after two applications of the ointment.

"With the exception of the slight odour of sulfur detectable for about fifteen minutes after the application of the sodium thiosulfate and hydrochloric acid solutions, patients were not in any way inconvenienced by the therapy. Patients who had been previously treated with ointments of various kinds containing a sulfur expressed a decided preference for the therapy with sodium thiosulfate."

**A Study of Nerve Leprosy**, by Muir, E., and Chatterji, S. N., Indian Journal of Medical Research, Vol. 24, No. 1, July, 1936.

As the result of a detailed investigation, clinical, pathological and histological of 81 cases of leprosy, the authors are able to throw much light upon the *path of infection* in nerve leprosy, the nature of the *pathological processes* inside

the nerves, and the bearing of these upon the various *clinical manifestations*. The article is well illustrated with photographs and drawings.

Location of bacilli—M. Leprae. In definitely neural cases acid-fast bacilli were found not in the skin but in one or more nerves: in all the cutaneous cases bacilli were found both in the skin and in the nerves.

In affected thickened nerves large masses of bacilli were found, but little sign of any cellular response and practically no destruction of nerve fibre. In the nodules and globular swellings of affected nerves bacilli were found in the caseous matter and in the pus of the abscesses.

Smears of the skin from patches or anæsthetic areas in such cases were invariably negative for bacilli.

Evidence is given to show that the *route of nerve infection* from the skin upwards is through the neuro-vascular plexuses of the skin, in which there may or may not be any clinical lesion. In recently infected skin it is in connection with these plexuses that M. Leprae is found. It is probable that the bacilli are propelled up the course of the nerve bundles by the lymph flow and that they multiply as they pass up. Wherever they meet with any obstruction in their course as at branching of the nerves or the passage of the nerve over bone, there result *accumulations of the bacilli*. The bundles of peripheral nerves are found to form a more favourable medium for the multiplication of M. Leprae than do the skin and the connective tissue sheaths of the bundles, so that whether it is due to mechanical obstruction of the bacilli or to some *neurotropism* on the part of the M. Leprae, the fact remains that such accumulations of bacilli in the nerves do occur. Additional proof of neurotropism is seen in the fact that with the passage and presence of M. Leprae among the nerve fibres there is comparatively little or no cellular response by way of reaction against the presence of the organisms. On the other hand the cells most concerned in the reaction to M. Leprae are the endothelial cells of the capillaries in both skin and nerves. "In the latter the bacilli are isolated from the endothelial cells of the centrally-placed capillary by the medullated nerve fibres, and thus may escape phagocytic destruction, whereas in the skin the bacilli lie in close proximity to the endothelial cells and are thus more liable to be phagocytosed."

*Caseation and abscess formation* seem to be determined by a combination of two factors: a considerable accumulation of bacilli at one point as mentioned above and high resistance of the patient to M. Leprae and consequently powerful cellular response in what is called "*recovery reaction*." It has been shown that the most marked signs of leprosy are due more to the intensity of *cellular reaction* to the bacilli than to the actual number of bacilli present in the body. It is well known that it is on the condition of the general health of the patient that there depends the continuance of any *specific resistance* he may naturally have to M. Leprae. With depression of general health and consequent lowering of resistance the bacilli tend to multiply in the body. With restoration of health there is coincident "*recovery reaction*" in the lesions within which the bacilli had multiplied during the temporary depression, with the appearance then of markedly raised and erythematous skin lesions of the tuberculoid type. There may, indeed, occur such violent cellular reaction in the affected nerves as to result in extreme cases of caseation and abscess formation, the

"*recovery reaction*" even being sometimes sufficient to destroy the bacilli in the nerves.

From the neurotropism of the *M. Leprae*, as suggested by the histological findings of the authors, it is probable that the peripheral nerves form the *principal reservoirs* for *M. Leprae* in the body, at least in incipient cases. So long as there is adequate general resistance of the patient the bacilli tend to be sealed up inside the infected nerves and no generalized infection may occur.

The *two types of anæsthesia* in nerve leprosy are described, the primary and the secondary, the former due to destruction of small nerve branches in the skin and subcutaneous tissue, the latter due to the infection invading the larger sensory and mixed nerves and causing pressure upon bundles of fibres which supply healthy skin.

The distinction is drawn between *lepra fever* or *lepra reaction* occurring in patients in poor general health or in connection with inter-current diseases, and the *recovery action*, due to the restoration of the temporarily depressed power of the cells to react to *M. Leprae*.

Whether or not these reactions, one or other or both, are of the allergic type, as seen in diseases of a more toxic nature, does not seem to have been decided.

J. W. LINDSAY.

### **Boletin de la Oficina Sanitaria Panamericana, July, 1936.**

*Climatology of Leprosy in Tropical and Sub-Tropical America.* (Extracts from the Spanish by J. W. Lindsay).

At the Third Pan-American Conference of Directors-General of Public Health held in Montevideo in April, 1936:

Dr. McCoy stated that in the U.S.A. the only region where leprosy shows a tendency to spread is in the States on the Gulf of Mexico.

General Siurob of Mexico said that most cases of leprosy were found in the States that have a heavy rainfall, and almost no cases were reported from the central high tableland, where the climate is cooler, confirming thus the "law of Rogers."

Dr. Paz Soldan of Peru pointed out that leprosy does not exist in his country outside of the forest regions bordering on Brazil, and that even there only a few cases have been found.

Dr. Sussini of the Argentine stated that the greater number of lepers are found in the provinces of the basin of the great River Parana-Plate, between latitudes 25° to 35° South. In the more central hilly province of Cordoba (30° South) there are some 200-250 lepers, while in the northern hilly provinces, of latitudes 23° to 27° South, Jujuy, Salta and Tucuman, there are only some 25 to 30 lepers. In the Audine provinces with small rainfall there is no leprosy, and it also does not exist in the cold windy regions of Patagonia. In the Province of Santiago del Estero

in latitude 28° South, low-lying country within view of the Andes, but the hottest place in the Argentine, the summer sun in January and February registering 110°F. there is no leprosy.

*The Leprosy Outlook in Brazil.*—Dr. Barros Barreto in speaking of the 30,000 lepers in Brazil said:—"The illusion of the possibility of isolating all the lepers is being dissipated, and efforts are being concentrated on what is practicable, viz., in the provision of the necessary Lazarettos in the separate States, the establishment of dispensaries for treatment, the early diagnosis of the disease, and the systematic examination and following up of cases.

**International Journal of Leprosy**, Vol. IV, No. 1, Jan.-Mar., 1936

*Castious Swelling of Nerves in Leprosy* is the title of a paper by N. de S. Campos. He describes in 15 patients this now well-known condition in leprosy. He confirms the opinion of others that it is always an index of a mild and residual form of the disease and shows a high degree of immunity in the patient. Several interesting photos are given.

J. N. Nolasco writes on *Calcification and Osteoid Changes in the Nerve in Leprosy*—a very real condition.

M. Paul describes *Surgical Measures in Leprosy* recommending strapping with adhesive plaster for superficial ulcers of the foot and excision of the metacarpus when this bone is involved.

H. P. Lie writes on *The Classification of Leprosy*. He advises the following:—

M for the macular form, the degree being shown by M<sup>1</sup>, M<sup>2</sup> or M<sup>3</sup>.  
NM when these are accompanied by anaesthesia, the degree being indicated at N<sup>1</sup>, N<sup>2</sup> or N<sup>3</sup>.

MO where there have been macules which have disappeared.

N<sup>3</sup>MO would thus indicate old patient with considerable mutilations, who in the past had pronounced macules which have now disappeared.

T to indicate tuber or nodule would cover the present C or cutaneous form, degrees being indicated by T<sup>1</sup>, T<sup>2</sup> and T<sup>3</sup>.

"t" added to M would indicate that the macules were of the tuberculoid variety.

NMt would thus be the symbol of tuberculoid leprosy with anaesthesia, 1, 2 and 3 being added to show the degree.

Nt would indicate that the tuberculoid condition was confined to the nerve trunks.

MtNt would signify the affection of both.

TN or TNM would indicate the mixed form.

TNMP would signify that there had primarily been macules but that the disease was now of the nodular and nerve type.

TpNM or TpN would indicate the reverse process, primary nodular having given place to the neuro-macular or neural form.

B+ added to any of the above would indicate that bacilli had been found.

[This is perhaps the most rational and complete symbolism that has yet been invented. It seems however to ignore one common condition, viz., the diffuse form of the disease in which the greater part of the skin is infiltrated with leproma, without either macules or nodules appearing. The letter D for *diffuse* might perhaps in these cases be substituted for T, or DT when nodules appear on the diffuse lesions. Also B + + or B + + + might indicate a larger number of bacilli found. Ed.].

*Juvenile Leprosy* gives a description by E. Muir of a form of leprosy common in young children.

Mrs. R. C. Richardson writes on *Experience with Children of Lepers*.

Out of 46 children of lepers only 4 "have developed evidence of leprous infection so far as is known". She concludes as follows:—"It is realised that no general conclusions can be drawn from so few cases, but they may be of interest particularly as they indicate that in this country at least a very large proportion of the children of lepers, even those who have had long exposure to the more infectious type of the disease, remain free from evidence of infection if removed to favourable surroundings before such evidences appear. It may be added that the records of this Home show that no other children of these parents were infected. It is indicated in Table 1 when two or more children were of the same parents."

C. J. Austin writes on *A Study of Leprosy in Fiji*. We have recently given (*Leprosy Review*, Vol. VII, No. 3) a similar article by this writer.

*Compulsory Segregation of Leprosy* is the title of an article by J. Knott, writing on Saint Croix in the West Indies, where there are 99 known cases of leprosy. "Twenty-five years of trial of compulsory segregation of all known cases of leprosy in St. Croix has not resulted in any appreciable decrease in the incidence of the disease."

A. C. Howard writes on *Leprosy in Nigeria*, giving a general description of the disease in this colony.

*Lepra Bubalorum* is the title of a reprinted article by L. W. M. Lobel, which is summarized as follows:—

"It can be said that the resemblance between the buffalo and leprosy bacilli is very close, both as regards their individual morphology and the important feature of grouping. The tissue reaction on the part of the host is in many respects the same. The important pathognomic vacuolation and fat-production are outstanding phenomena. The multivacuolar form of the Virchow lepra cell is not formed, but the univacuolar form is produced. In the buffalo disease coagulation



necrosis, calcification and formation of Langan's giant cells occurs frequently. The clinical phenomena of the buffalo disease and nodular leprosy also shows close agreement. The negative results of the biological examinations constitute important evidence of the close relationship between the organisms of these two diseases. On account of the close agreement between human nodular leprosy and the buffalo disease, the name "lepra bubalorum"—buffalo leprosy—is given to the latter. Or, if it is desired to give special emphasis to the particular nodular feature of this disease as it has been observed it might be called "lepra tuberosa bubalorum"—nodular buffalo leprosy. *Lepra bubalorum* is a chronic infectious disease of the water buffalo caused by an acid-fast micro-organism. It shows very close resemblance to human nodular leprosy. The question whether its causative organism is entirely identical with that of human leprosy, and whether mutual infection is possible, cannot be answered." Some very fine photographs are given.

**International Journal of Leprosy**, Vol. IV, No. 2, Apr.-June, 1936.

The first paper is a *Field Study of Leprosy in Cebu*, by J. A. Doull, J. N. Rodriguez, R. Guinto and F. C. Plantilla. In a population of 6063 persons, 104 cases were found, making an incidence of 17.2 per thousand. Of these 43 were already in segregation and 16 others on parole. It is calculated that if the same ratio between segregated and non-segregated can be assumed throughout the Philippines, the total number would be 20,000. Of the 30 newly discovered cases, only 3 were bacteriologically positive. Close contact could only be traced in 38.5 per cent., and 26% others gave a history of family contact, but it is suggested that further enquiries may raise that percentage. In a high proportion the "primary" lesions were situated on those parts of the body most exposed to injury. There was no obvious associated infectious disease except yaws and parasitic skin diseases, nor any obvious dietary deficiency; but overcrowding was a suggestive association.

*Leprosy in New Guinea* is an article contributed by E. M. Holland. He states that:—

"The evidence that leprosy was introduced into New Hanover only during this century is conclusive, and although the spread of the disease has been rapid, in the majority of cases it has been mild, which is against the experience of other countries. Although the New Hanover language has a rich vocabulary it has no name for leprosy but has adopted names for the different manifestations. Thus *kal* (a smooth pigmented scar) has been given to the early neural patches, *tapok* (a dead tree with falling limbs and bark) to advanced neural cases, and *karigot* (a vine with a nodular stem) to nodular lesions.

"In contrast to this is a group of islands, the Squally Islands, located in this district but somewhat isolated, near the equator. In

a population of nearly 2,000 we have collected in recent years 12 lepers, all early neural cases. The natives denied all knowledge of the disease and we concluded, erroneously, that it had been introduced recently. Since then, however, the natives have become more communicative, and have told us that the disease has been known among them from time immemorial. They have one word covering all the different lesions of leprosy, but everything connected with the disease was *tambu*, the death penalty being inflicted for merely uttering the name. They state that strict isolation was carried out on the first appearance of lesions, and lepers were not allowed to marry. They recognise the communicability of the disease from man to man. These natives have a strong Malay strain in them, and it is possible that the disease was introduced by Malays many centuries ago."

N. C. Wayson contributes an article on *Early Diagnosis of Leprosy*.

He advocates the study of leprosy in its earlier stages. Emphasis is placed on the fact that in the early stages of the disease there may be only minor neurological findings, and that the skin lesions which may or may not be evident in these stages are often of short duration and cannot be regarded as specific to leprosy. One hundred and eight children born of leprous parents, and subsequently maintained in an institution segregated from contact with leprous persons, were observed for a period of three years. Ten of these children have developed leprosy. The first clinical findings are exemplified by notes of three cases.

*Leprosy and Childbirth* is discussed by I. Tajiri.

Of 112 leprous women at Aisei-en who have had children, 39 (34.8 per cent.) developed the disease during pregnancy or shortly thereafter. In 100 pregnancies that occurred in women with leprosy, exacerbation of the disease occurred 48 times, the remaining 52 being uneventful in this respect. Though the initial symptom of leprosy is usually a simple macule, or anaesthesia, the symptoms that appear in pregnancy or childbirth are usually acute lesions, the so-called "rash", often appearing as numerous active macules and frequently with edematous, erysipelas-like swellings of the face. In the case of abortion there usually is little advance of the disease, though occasionally a case becomes worse in spite of it. It is evident that for women who are in the incubation stage of leprosy, pregnancy and childbirth are liable to precipitate the development of the disease, and for those who have leprosy childbearing is apt to lead to its exacerbation and extension.

J. Lowe writes on *Tuberculoid Changes in Leprosy, as seen in India*. After describing various forms of this lesion he says:—

"The question arises as to whether we in Calcutta are dealing with a local peculiarity of the disease, or whether such cases are common in other parts of India and in other countries. A survey of the literature of the subject of the tuberculoid condition in leprosy (which is extensive, for I traced over fifty references to it) shows that such lesions are apparently much more common in some countries than in others. They are commonly seen in Japan, North India, and parts of Africa, but seldom in most other countries. However, there seems to be records of such lesions in practically every country in

which leprosy exists, even in Norway where it is said to be very rare; Lie reported having observed three cases. It is interesting to observe that when such cases occur in countries where they are rarely seen there often seems to be considerable difficulty in diagnosis, and I have seen several records of such patients being shown for diagnosis before dermatological societies where there was much discussion as to whether the condition was leprosy or tuberculosis of the skin."

G. A. Ryrie, writing on *The Therapeutic Effects of Phthalic Acid Salts*, summarizes his observations as follows:

"The magnesium, calcium, potassium-hydrogen and cotarnine salts of phthalic acid have been tried out, on twenty patients each, over a period of six months by intravenous injections twice a week. Intravenous injections of magnesium, calcium and potassium-hydrogen phthalate appear to have no therapeutic effect in leprosy in doses of 20 cc. of a 1 per cent. solution. Out of nineteen cases treated with intravenous injections of cotarnine phthalate, in 20 cc. doses, first of a 1 per cent. solution and later a 2 per cent. solution, twice a week, twelve showed marked improvement, four slight improvement and three no change. The improvement in these cases occurred only during the first three months of treatment. The clinical improvement appears to be accompanied by a general increase in resistance as indicated by a drop of over 25 per cent. in the sedimentation rate of twelve of the patients. It is suggested that the effect of the phthalate group in leprosy is dependent to some extent on the length of time the drug is retained in the body."

P. C. R. Pereira applied the reaction of Witebsky, Klingenstein and Kuhn to the blood of 107 cases of leprosy.

"It was found that it was positive in 100 per cent. of 12 cases of the cutaneous type and 35 mixed cases, and in 80 per cent. of 60 neural cases. Of 84 sera of persons who had had continued contact with leprosy, the greater part of them being children and mates of lepers, 53 gave negative reactions, 4 doubtful and 27 positive. Nine of the negative cases were found to present symptoms that might be due to leprosy, but which actually did not seem to depend on that malady. As for the positive reactions, excluding those cases which were probably leptotic, with beginning or atypical lesions, and a few cases that were tuberculous, there remain nine in which an explanation of the positivity of the reaction is not evident. In view of the foregoing it seems justifiable to conclude that (1) The reaction of Witebsky, Klingenstein and Kuhn gives the highest number of positive reactions, in all forms of leprosy, of any test yet known. (2) It should always be employed in cases difficult of diagnosis and in latent leprosy. (3) It is indispensable to make as complete an examination of the case as possible to avoid errors and confusion."

J. W. MacKenzie writes on *Leprosy Work in Korea*.

R. C. Germond, dealing with *The Last Six Years of the Leprosy Campaign in Basutoland*, states:—

"The present stage in the campaign began in 1929 with the appointment of two leprosy inspectors, one for the north and one for the south. The result of this experiment was so satisfactory that four more inspectors were appointed in the following year. The employment of these specially trained workers marks the beginning

of a new and more hopeful era. It has resulted in such all-round improvement that, after six years, it is possible to offer concrete evidence of a large measure of success. The immediate result of the new measure was a sudden and important increase in the number of admissions. This somewhat exceeded the 1920 figures and brought the population to its highest level since 1914. For the first time in the history of the campaign the increase in population continued uninterruptedly for no less than five years. It was not until 1934 that a slow decline began, and this has continued to the present date. The employment of four additional inspectors in 1930 did not result, as might have been expected, in further increase in the number of admissions. To the contrary, the unexpected happened, namely, a large and sudden fall. It is certain that this would not have occurred if there still had been a considerable number of lepers in the territory."