

REVIEWS

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J. N. Rodriguez and H. W. Wade begin a series of important articles in which cases examined and described in detail five years ago are reported on as to their present condition. During that time they have been living in their own homes and have had little or no treatment. The skin lesions of 52 neural cases are described, dividing them according to the condition of lesions when first seen. The changes are summarized in a table as follows:—

Lesion Group	Cases		Changes of lesions			
	Original number	Number seen in 1938	Residual or gone	Improved not residual	Stationary	Worse
1. Anaesthesia only ...	3	3	3 ^b	—	—	—
2a. Residual, without atrophy	7	7	7 ^c	—	—	—
2b. Residual, with atrophy ...	6	5	5	—	—	—
3a. Simple, quiescent ...	8	7	2 ^d	1 ^e	1	3
3b. Simple, active ...	11	10	3	1	1	5
4. Papulate ...	9	8	7 ^f	1 ^g	—	—
5. Minor tuberculoid ...	4	4	1	—	1	2
6. Major tuberculoid ...	4	2	1	1	—	—
TOTALS ...	52	46	29	4	3	10

- Not including cases followed for from one to three years.
- Not considering purely neural changes.
- In one instance (Case 4) the original lesion is gone but a slight new one present in 1938. Two cases (Nos. 7 and 9) with aggravated polyneuritis.
- Lesion removed entire in one case (No. 24).
- New recent lesions have developed (Case 20).
- Including Case 42, now with a new solitary lesion.
- Case 44; only a little left, but not wholly inactive.

It is considered that “whether the lesion be simple or tuberculoid, there is a much better chance that a case will clear up when there are only one or a very few leprids (i.e. the lesser *Nr* cases) than when such lesions are multiple and extensive. That is rather strikingly brought out in the active simple group, in which four of six with solitary lesions have cleared up or are really improved, while only one of the four with multiple ones has improved.” “An intriguing though common feature of the process of improvement in this form of leprosy is the way in which forces favourable and antagonistic to the disease process vary locally in various parts of the skin. Inactivation and healing in one lesion may occur simultaneously with progression in another, and such differences occur even in different parts of the same lesion.” It is remarked that “workers in India lay much stress upon thickening of the cutaneous nerves that supply the areas of the leprids, due

to direct extension upward of the tuberculoid process. In our 1936 examinations we gave particular attention to this matter and our findings confirmed previous experience that, in the Philippines, important thickening of the cutaneous nerves in relation to the leprids is uncommon. In only one of the major tuberculoid cases was a notably affected superficial nerve found; histologically it was typically tuberculoid, with caseation." "A related feature that we have encountered is polyneuritic affection of a single extremity, on which there has been a leprid. In such an event the question arises whether the deep nerve trunk was affected by continuity through the cutaneous nerve and lateral spread from that part of the trunk to parts that supply the muscles, or by accidental metastatic seeding from the blood stream. If the latter course is the actual one, it seems a strange coincidence that in not less than four of our cases there is unilateral polyneuritis of the same members that have had macules, and not a single definite instance of that affection in a limb without a macule. If the lesion does reach the trunks by way of the cutaneous nerves it often, if not usually, does so—in Philippine cases—without producing gross enlargement of those nerves."

A. A. Stein writes a second article on the *Morphology of the Lepra Reaction* and describes especially the histological changes in existing lepra lesions when they become activated.

A valuable practical paper by G. A. Ryrie describes *Plantar Hyperalgesia and the Prognosis and Treatment of Leprosy*. "Plantar hyperalgesia does not appear to be a significant feature of general, nonleprotic disease. It is, on the other hand, a usual feature of lepra reaction except where the disease itself has caused impairment of sensation. It occurs in a large number of non-reaction lepromatous cases, in general among those whose histories show that they are not doing well. In twelve cases where reaction was carefully induced with potassium iodide, it proved to be the earliest objective evidence of activity." . . . "What may be termed the P.A. method of determining individual dosage in lepromatous cases is now being tentatively employed in Sungei Buloh. When deep plantar sensation is normal, the dose is pushed up to what is considered to be a satisfactory maximum, and it is lowered when there is the slightest indication of hyperalgesia. When plantar hyperalgesia is elicited, patients are examined for concomitant ailments—pyorrhoea, helminthiasis, anaemia, septic foci, etc., and prophylactic antireaction treatment is given. In addition, resistance is reinforced as far as possible by diatetic

means. The aim is to get the patient back to a state of normal plantar sensation. The assumption is made that every patient with PA+ or PA++ is to be regarded as in danger until by general and specific methods his hyperalgesia is lowered." Hyperalgesia was found in varying degrees in 477 out of 1,117 lepromatous cases which on further analysis indicated that they formed at least four separate groups :

(1) Cases with plantar analgesia and anaesthesia of varying degrees; these are classified as PA —. This group was found to be a heterogeneous one, which can be put aside for the time being.

(2) Patients with normal plantar sensation, on testing first with cotton wool and then by heavy stroking; these are classified as PA+.

(3) A group in which varying degrees of definite hyperalgesia were elicited by heavy plantar stroking; these are classified as PA+ and PA++, according to the degree of pain.

(4) Leprosy reaction cases with severe pain on heavy stroking; these are marked cases, PA+++.

The method used to elicit the plantar response is as follows:

"With a coarse wisp of cotton wool, brush lightly and without pressure over the plantar surface to determine if tactile sensation is intact. Hyperkeratosis if present has to be allowed for. Then with the wooden end of a pen or some similar instrument, stroke firmly and evenly along the plantar surface from heel to toes. It helps if an assistant talks to the patient while this is being done. The normal sensory response is a feeling of pressure and ticklishness.

"There are certain minor difficulties connected with the test. In some languages and with some patients 'pain,' 'ticklishness' and 'normal sensation' are not easily differentiated. This is especially the case where interpreters are employed, because of the almost universal tendency of interpreters in the East to avoid giving an exact translation of what has been said. It also arises when doctor and patient are using a *lingua franca* foreign to both. Nervous withdrawal of the foot sometimes occurs, more frequently, with Indians than with Malays or Chinese, and this can be a real obstacle with some patients. The nervous effect may be marked—rarely there may be uncontrollable laughter, and in two instances I have seen the test cause spontaneous micturition.

'Nervous withdrawal of the foot occurs immediately on the first touch or pressure; pain on the other hand occurs during the actual stroking. Response to pain varies considerably in different races and individuals, and this has to be allowed for. A Chinese patient, for instance, may state quite truthfully that the test has caused considerable pain although there has not been the slightest flicker of muscular response to indicate it. A Malay or Indian, on the other hand, may display a marked motor response to a lesser degree of pain. Another minor difficulty in practice is that patients in a queue tend to imitate the person previously examined, in their anxiety to do what is apparently expected of them.

"Patients with anaesthesia of the foot are difficult to assess, and each case must be considered individually. Obviously anyone with anaesthesia of the soles and algesia on heavy stroking is beyond the reach of this test; the prognosis, however, at this stage is usually obvious. On the other hand a patient may have anaesthesia but be PA+ on heavy stroking. Here the overlying anaesthesia may have dulled a response that might have otherwise been acutely painful. This has been observed in cases of actual reaction. The patient's statement that his feet are not anaesthetic is no criterion; it is surprising how many patients are unaware of anaesthesia of the soles. Such cases may be masked PA+, and would then have to be treated accordingly. A little practice enables one to form a fairly accurate judgment of them.

"The results of this test in advanced cases require further elaboration. The prognosis and the response to treatment of L₃ cases is unfortunately only too well known, without any test. It is, however, desirable to

know if an advanced case is likely to develop a reaction. The results of the test in these cases are somewhat confusing to begin with. For instance, an L₃ case may show obvious clinical activity and yet be PA₊. In general the more advanced the case the more feeble does the pain response or intensity index become. A PA₊ in the L₃ case must usually be interpreted as PA₊₊, and the PA₊ must often be regarded as PA₊. As stated, the test is mainly of value in the L₁ and L₂ cases.

"Although a PA₊ or PA₊₊ reaction indicates a poor prognosis so long as the patient remains in that state, normal plantar sensation should not be interpreted as indicating a hope of cure. I believe that condition to be an indication that the progress of the disease is slow, or that it is quiescent for the time being, or that there is improvement. Clinically normal plantar sensation indicates that the patient will stand a good deal of therapeutic interference without any special risk of harm. Patients with plantar hyperalgesia may improve, but as long as they remain PA₊ they are in the danger zone and improvement cannot mean much. The case with more or less continuous plantar hyperalgesia is on the reaction threshold all the time; he has accelerated the pace and will probably reach the burnt out stage more quickly.

"Plantar hyperalgesia may be elicited in the tuberculoid variety of neural leprosy, but this has not been found to be of practical value. In such cases anaesthesia and deformities are much more common than in lepromatous cases, which renders the test more difficult. But to the experienced eye tuberculoid activity is at once obvious, without any test. Furthermore, the treatment of that condition in practiced hands is so much more satisfactory than that of the lepromatous type of leprosy that special tests are not of the same value.

"In actual application in Sungei Buloh the test has proved extremely satisfactory. With a little practice it gives patient and doctor confidence in the individual dosage. It takes little time, calls for no special equipment, and can be done by any reasonably intelligent and careful patient. Where the staff is limited it is a quick method of selecting those patients who need special attention."

In a short paper R. C. Germond writes on *The Differential Diagnosis of Circinate Tuberculoid Leprides and Polycyclic Syphilides*. He summarises the following morphological features as the most characteristic:

"Tuberculoid leprotic lesions are not strictly polycyclic. They may consist of interrupted rings, but these are never formed by the more or less close juxtaposition of small semi-lunar elements.

"The surfaces of raised tuberculoid 'rings' are nearly always granulated, either finely or coarsely, though in some cases where infiltration is more deeply seated it may become smooth, as in syphilis.

"The coexistence of polycyclic syphilides with black pigment. This pigmentation may be uniform or finely punctate; it may be situated on the sites of 'healed' lesions, or it may run along the base of active, raised syphilides, forming, as it were, a shadow of the lesions. Such a disposition I have not observed in leprosy.

"The crinkled 'tissue-paper' appearance of healed tuberculoid leprides is pathognomonic. It is very exactly comparable to the film which gathers on the surface of a cup of tea or coffee as it cools. Both appearance and colour are identical. The syphilitic scar is very different, while the leprotic scar often coexists with active leprides, which thus betray their nature."

F. A. Johansen and J. A. Trautman write on *Fever Therapy in Leprosy*. Fever was induced in the Kettering hypertherm, in most instances the temperature of the patient being maintained at 105° or 106° F. for five hours. In 15 out of the 18 cases complications caused the termination of treatment in less than scheduled time.

Since receiving the fever treatment 13 of the patients have become worse, 2 have remained stationary, 1 has been paroled, 1 died of pneumonia and 1 died of carcinoma. "It is our opinion that fever therapy has been of no benefit in the treatment of these cases, the disease having progressed as would have been expected otherwise, without interruption in its course. The treatment was helpful in clearing up secondarily infected ulcers and mycotic infections of finger nails and toe nails."

R. G. Cochrane, C. G. Pandit and K. P. Menon give *A Preliminary Note on Inoculation of Monkeys with Human Leprosy Material after Splenectomy*. Of the eight *Macacus sinicus* monkeys used, two died of complications. The results in the other six were not conclusive. It was considered that there was a greater chance of success if the animal was splenectomised two months after insertion of the nodule intra-abdomenally, with re-inoculation at the time of the second operation. "These experiments reveal the possibility of individual variability of the factor of resistance, and many monkeys may have to be used before one is found that is actually susceptible to the infection. Monkey No. 1 in our Series A may have been such an animal."

An article by E. Muir on *Leprosy in East Africa* is a precis of the findings of the tour in East Africa which appeared in *Leprosy Review*, January, 1939.

A valuable editorial by Dr. Wade appears on *Mycobacterial Diseases*. This editorial has been called forth by a publication, by the section on Medical Sciences of the American Association for Advancement of Science. Nineteen papers have been published in a volume entitled *Tuberculosis and Leprosy*. Abstracts from these papers are published under *Current Literature*, and the whole subject is discussed in the Editorial. The outstanding features of what is called "mycobacteriosis" are that the organism, whichever it may be, thrives inside the macrophages, and "that upon these cells depends the localisation of the process, as in the lungs in tuberculosis and in the skin and nerves in leprosy" . . . "Among other conclusions that have been arrived at through studies of the effects of different chemical fractions in animals, one is that the bacillary lipids act as stimulants for the mononuclear phagocytes. This is undoubtedly true, and the reaction of the tissues to a foreign substance or organism which gives rise to the 'tuberculoid' change has long since been called the 'lipoid reaction.'" A particularly interesting example is drawn from one of the articles.

" That of intravenous inoculation of rabbits with the avian tubercle bacilli, which produces for a time a condition—the Yersin type of infection—that is reminiscent of lepromatous leprosy. That condition, however, is not maintained, for if the animal survives the diffuse condition is replaced by one characterised by discrete tubercles; to carry the analogy to leprosy again that condition would suggest, however distantly, the neural tuberculoid form. Since more or less similar differences of infections can be produced with mammalian tubercle bacilli under proper conditions, Lurie asks if it may not be that these two phases—the diffuse (nontoxic, nonsensitized) and the nodular (toxic, allergic)—are developed in all of the mycobacterial diseases, in different degrees and at different rates."

Leprosy in India, Vol. XI, No. 4, Oct. 1939.

Dharmendra and S. N. Chatterji write on *Total Excision of Early Neuro-Macular Lesions*. They summarise their results as follows:—

" Neuro-macular lesions in 22 cases of leprosy have been completely excised. It has been possible to keep only 18 of these cases under observation. In all but one of these 18 cases the only macule the patient had was the excised one. Out of the 18 cases kept under observation there have been signs of relapse in four cases—relapse at the site of excision in three cases and new lesions appeared elsewhere in the fourth case. There has been no relapse in 14 cases. Of the 14 cases showing no relapse 9 have been under observation for 1 to 7 months only, the remaining 5 having been under observation for 14 to 32 months. In most of the cases the period of observation is too short to allow any definite conclusion to be arrived at. It can, however, be said tentatively that, if cases are suitably selected, the complete excision of a lesion is not likely to be followed by a local recurrence of symptoms or by the development of lesions elsewhere, at least in a certain percentage of cases. It is considered that the procedure would have a definite place in the treatment of very early cases of leprosy even if it did good to a small percentage of the cases so treated. Anyhow, it is quite clear that the operation is free from any harm and there seems to be nothing against its being given a trial in suitable cases."

D. P. Rishi gives the results of re-examining cases discharged as "disease arrested" from the Chandkuri Leprosy Hospital, Central Provinces. As many as 324 cases were declared "disease arrested" during the years 1928-37. 128 of these were children and they had been periodically re-examined. 13 of these children relapsed, the relapse-rate being 10%. Of the cases declared arrested from time to time 202 were available for re-examination this year. Out of these 22 had relapsed, giving a relapse-rate of 10.89%. The relapse-rate in 154 neural cases was 8.5% while that in 48 lepromatous cases was 18.5%. In this series there was practically no relapse in cases arrested with slight or no deformity, while the relapse-rate in cases arrested with marked deformity was 20%. Chances of relapse beyond 10 years after arrest appear to be rare.

J. S. Narayan reports on *Neem Oil in the Treatment of Leprosy*. Sixteen cases were selected and the oil from the seeds

of *Melia azadirachta* was injected intradermally and intramuscularly. Clinical improvement was apparent in 6 of these 16 cases, 4 were slightly improved, 3 did not improve and 3, though improving, did not complete the treatment.

An article by J. Lowe is reprinted from the Indian Medical Gazette of August, 1939, on *Leprosy and Tuberculosis*. The following are some abstracts:—

“ In tuberculosis much work has been in recent years on complement fixation and similar work has also been done in leprosy. For complement fixation in leprosy we find that the best available antigen at the present moment is what is known as the WKK antigen which is prepared from tubercle bacilli, and there is considerable evidence to show that the immunological reactions of these two diseases have very much in common and that the two bacilli are antigenically related.

“ You will have heard about allergic reactions in tuberculosis and their significance, how they may produce a temporary increase in the clinical signs, and how the occurrence of these reactions is not necessarily a bad sign, for in some cases (but perhaps not in all) allergy goes hand in hand with immunity, and allergic reaction may be followed by quiescence and arrest of the disease. Similar reactions are also seen in leprosy and they may produce alarming symptoms which, however, always subside in time without any special treatment. These reactions are not infrequently followed by long inactivity and sometimes by arrest of the disease. The failure to recognise allergic reactions in both leprosy and tuberculosis, and the failure to attribute to these reactions their proper significance, is one of the commonest causes of errors of clinical judgment in dealing with these two diseases.

“ There are some indications that these two diseases are occurring in India in the form of long-period epidemics, and there are certain things which suggest that the epidemic of leprosy may be past its height, while the epidemic of tuberculosis may be now on the up grade. The available evidence is based on information concerning the incidence and severity of the two diseases.

“ Let us first consider leprosy. Statistics in India are very inadequate and unreliable, but such as they are, they do not suggest that the incidence of leprosy is increasing in India as a whole. The number of lepers reported in India in the census of 1871 was about the same as was reported in 1921 in spite of the very large increase in population during this period. (Recent census figures are nearly 50% higher probably as the result of more accurate enumeration). Another point is that work in recent years has shown, I think, conclusively, that the average case of leprosy seen in India is much milder than the average case seen in some other countries. These two facts, the mild form of the disease and the available statistical evidence, poor though it is, suggest that leprosy may be past the epidemic peak and may be on the downward grade. This does not mean that anti-leprosy work is not needed in India. On the other hand, it may mean that conditions are favourable and that we may be able to accelerate any natural tendency in the decline in the leprosy rate.

“ A study of leprosy in families shows that of young children living in contact with open infectious cases, a high proportion, sometimes between 50 and 80 per cent or more, sooner or later develop signs of the disease, and the disease tends to be severe; whereas of adults living under similar conditions, only about 5 per cent develop the disease, and the disease is often in a mild form. These findings indicate that children are more susceptible to leprosy than adults and that most serious infections are acquired early in life. Even when the disease appears relatively late in life it is often the result of an infection acquired early in life, an infection which has long lain latent.

“ I believe that similar studies of tuberculosis in families have given somewhat similar results. It is found, for example, that if a mother

is an open case of tuberculosis, she may infect child after child and the children often get severe tuberculosis, but the husband who is living with such a wife usually does not get the disease at all, or else gets it in a relatively mild form. These facts show the relatively high degree of immunity in adults. I have been interested to read that an increasing number of workers on tuberculosis is tending to regard adult tuberculosis as often being the late result of an infection acquired in childhood, although some workers think differently. At any rate it is clear that adults get the disease much less readily than children, although the difference may not be so marked in India as it is in Europe. The relative immunity of adults to tuberculosis is usually attributed to repeated subliminal infections early in life. It is, however, very difficult to explain the relative immunity of adults to leprosy on this basis. It appears to be a common natural development with age.

"I have given you some of my ideas about these two diseases, the 'twin diseases' as they have been called, leprosy and tuberculosis. My knowledge of tuberculosis is very limited and some of my ideas about this disease may be wrong. I do hope, however, that I have been able to do one thing, namely, to show how tuberculosis and leprosy are linked together and to the whole realm of medicine and public health. What does this mean in practice? It means several things. It means, firstly, that those of us who are specialists in one subject should keep in touch with other subjects, particularly allied subjects, and as far as possible with the whole realm of public health work. It means secondly that anti-tuberculosis and anti-leprosy work and other similar activities should not develop entirely independently of public health activities in general. They may be started by special organizations but they should keep in touch with general public health work and in course of time they may be incorporated in them. Thirdly, it means that the public health system should ultimately include anti-leprosy and anti-tuberculosis work as an integral part of itself. There is far too often a tendency on the part of medical and public health authorities to regard these two diseases, and particularly leprosy, as something apart from their general sphere."

Treatment of Leprosy by Oxygen under High Pressure associated with Methylene Blue, by A. C. de Almeida and H. M. Costa. *Revista Brasileira de Leprologia*, Vol. VI, 1938.

The authors describe their method of treatment which consists of some 6 intravenous injections of a one per cent solution of methylene blue, followed by 6 applications, totalling about 8 hours, of oxygen at 3 or 3.5 atmospheres. The immediate clinical effects are described as follows:—

"Immediately after the applications, on coming out of the apparatus, all the lesions appeared congested and slightly edematous; around the reddish tubercles, a very dark halo could be seen. On the days following, in some cases one could ascertain a decrease in the elevation of the infiltrated areas, increased softness of the lesions, some tubercles with a small scab in the centre, while others were in full suppuration period with partial elimination. After a lapse of time varying from 3 to 11 days, on an average after one week, on all patients the appearance of small, red pruriginous and short-lived patches was noted, located on the lesions or on apparently healthy skin. When these patches occur over a tubercle, this tubercle immediately shrivels or suppurates as a result. These patches appeared successively, at times overlapping, at others spaced at long intervals, and in some cases took the form of rashes."

The following clinical improvements occur in stages:—

"A marked decrease of the infiltrations, with consequent wrinkling of the skin, a softening of the lesions, a decrease or disappearance of the

tubercles through shrinkage or atrophy of the skin, leaving a crater-like aspect, or by inflammation and elimination leaving dark scars, which remind one of treated impetiginous or ecthymiform lesions. Although naturally incomplete owing to the insufficient lapse of time during which the cases have been observed, these results are in many instances of great interest, since they would have been difficult to achieve by any other means of treatment, the more so if the severity and extension of the disease in our cases is taken into account."

Much stress is laid on staining changes (diphtheroid and other forms) which are described as taking place in the bacilli after treatment, and the significance of these changes is discussed. Two opinions are contrasted: one indicating that these changes indicate destruction and elimination of the bacilli in a healing process; and the other that they occur in an exacerbation of the disease and are resistant, spore-like forms, indicating that the disease is increasing.

Possibly both views are to a certain extent correct. These changes are found in reacting major tuberculoids where the disease is being definitely eliminated, as many of these cases heal up spontaneously. In the reacting lepromatous case the irregularly-staining forms may also indicate destruction of bacilli; but in the latter the resistance of the patient is often brought to such a low ebb that fresh bacilli spread rapidly by multiplication and take the place of bacilli destroyed. In studying the details of the nine cases one notices that cases III, V, VII and IX, described respectively as C₃, C₃, C₂N₁ and C₂, have all negative skin findings before treatment. It is surely usual to find bacilli in the skin of cases classed thus. These negative findings are somewhat perplexing in trying to form an independent estimate of the effects of this treatment. In judging whether the changes described as taking place clinically and in the bacilli are different from those produced by a moderate dose of potassium iodide, one would require a more detailed description of the cases.

Alfon. We have before us a copy of a lecture delivered by Dr. J. M. Gomes, of the Instituto de Higiene, Universidade de Sao Paulo, Brazil, entitled *Three Months' Treatment of Leprosy with "Alfon."* Claims are made for the efficacy in Leprosy of Alfon, which is described as "a new therapeutic substance, a carotinoid, probably carotene 3 beta." It is made up according to the formula Carotin 0.1, Eucalyptol 15.0, Cotton seed oil 100 c.c., and 5 c.c. is injected thrice a week to begin with, and, later, every day. After 30 injections there is a rest of 10 days. It is stated in somewhat vague terms that great clinical improvement is made, but the chief claim is that

"Fifty-six of the 332 patients examined had shown negative results alternated with positive ones, when we began the new treatment. With

'Alfon' the negative results continued to be observed, while 60 more showed similar results, making up a total of 116 negative cases.

'In the third month there were 19 relapses, three of which had been negative in the hospital, with one, two or three bacilli in the whole smear. This is a remarkable result in the short space of three months, and the more so since besides a negative examination there was also a markedly improved clinical condition.'

A report of the Sao Paulo Leprosy Association on *Efficacy of Alfon in the Treatment of Leprosy*, appearing in *Revista Brasileira de Leprologia*, VII, 4, Dec. 1939, p.456, is not so reassuring. The following is an English abstract from the Portuguese made by Dr. J. W. Lindsay:—

"Alfon" is the trade name of a "Carotene" product prepared in the Pharmaceutical Laboratory of Mr. Renato Fonseca Ribeiro, a State official of the Public Health and Food Control Department. In August, 1938, the Sao Paulo Leprosy Prophylaxis Service received a request that a certain number of leper patients be placed at the disposition of Dr. José Maria Gomes, of the Institute of Hygiene, for the application of his new treatment by "Alfon." The Director of the Leper Colony of Santo Angelo (Sao Paulo) complied with this request and a total of 640 cases were submitted to the treatment. The experiments were begun the following month, September, 1938.

It was noticed that from the very beginning the experimenter, Dr. José Maria Gomes, was always accompanied on his visits to the Leper Hospital by the Laboratory Proprietor, Sr. Fonseca Ribeiro. Within twelve days of the beginning of the experiments, "Alfon" began to be advertised in the public press and broadcast on the wireless as a most marvellous specific for the cure of leprosy. Public lectures on the subject were also given in different parts of the country. So intense was this propaganda that the medical authorities began to wonder what it meant, and the Director of the Leprosy Prophylaxis Service published a protest against "a scientific experiment" being converted into a "commercial enterprise." Extraordinary and sensational claims were being made for the efficacy of "Alfon," "a remedy," it was said, "that could raise up in twelve days lepers who had been bed-ridden for months." This article does not reproduce the favourable reports that must have been given of the many cases that had been quoted to support the claims of the efficacy of "Alfon." After a year's trial (August, 1939) the Director of the Leprosy Prophylaxis Service ordered the suspension of the experiments because of the many disastrous results of the treatment, that were stated to have been observed.

In reprisal the promoters of the "Alfon" treatment threatened legal proceedings against the Director of the Leprosy

Prophylaxis Service and began a campaign against the methods of the recognised Leprosy Institutions.

In this article are given the names of over fifty Brazilian Leprosy specialists subscribing to the conclusions arrived at as the result of the observations made by them during the year of experimentation with "Alfon" in the Santo Angelo Leper Colony. They found that the experimenter had not exercised due care in the initial examination of the patients and no proper records were kept. No routine examination had been made or recorded during the course of the treatment; only subjective symptoms were recorded. Their findings were as follows:—

(1) That the "Alfon" treatment is distinctly "reactivant" of the disease, especially in its cutaneous form.

(2) Contrary to what the experimenter himself published, 'Alfon' was found to have no effect upon leprosy reaction or the neurites—rather did it promote these complications with more frequency, and sometimes with unusual virulence.

(3) Violent reactions were produced in the eye affections, very grave cases of ocular lesions occurring, and a percentage of 2.93 cases of blindness.

(4) In nasal cases "Alfon" produced considerable increase in ulcerations and nodules, a result which explains the intense positivity of the nasal mucosa immediately after the employment of the drug.

A detailed analysis is given of the clinical and bacteriological observations made during the period of observation of the 640 cases experimented upon.

Negro's Skin. *The Tropical Diseases Bulletin*, 37, 2, Feb. 1940, p.100, reviews a series of articles on this subject by L. J. A. Loewenthal, appearing in the *Jl. Trop. Med. and Hyg.* As there appear to be differences between the leprosy of dark skinned and that of light skinned people (see *Leprosy Review*, XI, 1, Jan. 1940, pp.4, 46, 70), the racial differences described in the anatomy of the skin may be of interest in this connection.

'No exact definition of a 'negro' is possible nor is it attempted. The term really includes all peoples with deeply pigmented skin, 'kinky' hair and some skeletal peculiarities. In dealing with the anatomy of the skin the following points are stressed. There is some relative thickening of the horny layer whilst the corium has a richer blood supply and the vessels lie nearer to the surface than in white skins. Most noticeable, however, are the large numbers of sweat and sebaceous glands; indeed the apocrine glands are three times more numerous than

they are in the white skin. The sebaceous glands are often independent of follicles, even attaining a very large size when connected merely with lanugo hairs. Actually lanugo hair is sparse and the coarse hairs of the body, scalp and beard show a 'frizzy' appearance consequent on elliptical cross-section and the fact that the follicles are themselves curved with the concavity directed towards the surface. Pigmentation in the nails is diffuse and increasing years often result in its appearance in longitudinal strips. Certain physiological functions receive special notice and among these the question of heat regulation is perhaps of greatest importance, for black surfaces absorb heat more readily than do others. Yet the negro stands tropical heat better than does the European. The relative abundance of subcutaneous fat, the superficial position of the vessels and the numbers of sweat glands suffice to explain the adaptation. The pigment protects against the effects of excess of actinic rays and additional fluorescence is given by increased sebum. The problem of actual colour and tinting shows considerable degrees of variation. It may be said that the darkest tribes are those who have lived on poor soil for generations whilst groups that have led forest lives tend to have lighter skins. The blood mixtures of immigrant tribes modify all the considerations, whilst in mulattoes the colour varies in a way by no means proportional to the blood mixture but rather as though the higher grades of pigmentation are incompletely dominant over the lower. The difference in depth of colour in different parts of the body is well-recognized but this inherited factor follows two general rules: the trunk is dark dorsally and light ventrally, the extensor surfaces of the limbs are dark and the flexor aspects are light. It is obvious that the degree of laxity of the skin is of importance, *e.g.*, bending the knee lightens the colour by reducing the amount of pigment per square inch as the skin is stretched. Normally paler areas are the palms, soles, back of the heels, clavicular region, the sternal area, the midline of the back, the supraorbital ridge, upper eyelids, malar prominences, tip of nose and chin, in front of and behind the ears and, lastly creases. Increased colour is seen in the nipples, the genitalia, back of neck, lower part of belly, lower eyelid, upper lip and the centre of the cheeks. The pigment concerned is of course melanin and it is surprising that the total amount thereof is yet less than one gram. The mode of its formation, chemistry and distribution are fully discussed. Its presence in mucous membranes is interesting, thus 89 per cent. show patches in the centre of the gum surface, 40 per cent. show pigment in the cheeks, 38 per cent. on the hard palate, 33 per cent. on the tongue, 30 per cent. on the lips and 26 per

cent. on the soft palate. Many children have a distinct rufous tinge in their hair which may not be lost until puberty, although it never persists after that age.

‘ Certain dermatoses are particularly common among negroes. A fibroplastic diathesis is seen in the ease with which keloids are formed, the hypertrophic scarring formed round chronic ulcers and in the perineum in uncomplicated gonorrhoea. Lichenoid lesions occur because the lichenoid papule is a common reaction to many different stimuli, a change which often renders exact diagnosis almost impossible. As a consequence few cases of prolonged irritation escape lichenification. Dermatitis papulosa nigra is naevoid and has never been reported in an individual of non-negro descent. On the other hand certain dermatoses are definitely more rare. Resistance to external irritants is increased, trauma from light is unusual and a natural resistance to certain diseases is believed to exist. Thus psoriasis, rosacea, eczema and seborrhoeic dermatitis are uncommon, whilst alopecia senilis and prickly heat are definitely rare. It is obvious that these people are less subject to cancer consequent on light and other external factors, but statements that melanoma and other forms of internal carcinoma are less common are much open to doubt. The author believes that individuals react to itching as diversely as do whites. The detection of the simpler lesions may be fraught with difficulties. A macule is easily overlooked but pure erythema can be seen to darken the affected area whilst local epithelial oedema lightens it. Often purpura cannot be diagnosed unless the mucous membranes or other organs are affected. Papules tend to be paler than the surrounding skin and post-inflammatory changes may include depigmentation, most marked in the achromia seen after yaws. A greyish appearance is given when the superficial layers are disturbed by scratching. Other colour changes may be due to fungi *e.g.*, the darkening seen in the presence of *T. nigrum*.”

Critical Review of Classification of Leprosy by Anatomical Systems
by J. A. Pupo. *Revista Brasileira de Leprologia*, Vol. VII,
No. 4, Dec. 1939.

The author criticises the classification of the Leonard Wood Memorial Conference. “ The Manila Conference, in 1931, unifying the campaigns of prophylaxis against leprosy in the West, adopted a simplified classification distinguishing two primary clinical forms: the cutaneous and the nervous, with mixed or combined types. This classification oriented according to prevalent ideas, mainly on the infection of the cutaneous tegument and the peripheral nervous system, presented the serious drawback of a

simplification that does not agree with the clinical facts. Under the prophylactic point of view the Manila Conference advantageously adopted a method of symbols and numeral expressions for a brief representation of the clinical forms and evolutive stages of the disease. The classifications based on anatomical systems have been maintained for a long time in the mind of clinicians. The initial mistake consists in considering the lesions of the peripheral nerves as a condition non-existing in the tuberculous (lepromatous) form, believing them peculiar to the condition that develops the tropho-anaesthetic form, a misconception evidenced by the modern histo-pathological and immuno-biological studies of leprosy."

He recommends a classification according to histo-pathological findings as a basis of an anatomico-clinical classification. This he bases upon the recommendations of Jeanselme in his work on leprosy, which are as follows:—

" 1. Amorphous uncharacteristic inflammatory changes, often as a perivascular cuff loosely formed, and with a few single bacilli to be found after much seeking. Examples of this type are early lesions and unthickened macules of the skin.

" 2. Neoplasms more or less delimited, not in masses of bacilli and globi affecting, like the miliary follicles of tuberculosis, the skin mucous membranes, nerves and internal organs. It is this that I have in view when describing the typical elements (lepra cells) and the structures of leprous tissue.

" 3. Lesions, the histological appearances of which recall more or less the lupus of Willan, cutaneous sarcoids of Boeck or the subcutaneous sarcoids of Darier and Roussy; they are localised in the skin and the nerve trunks."

The author goes on to say: " Considering the reports presented to the Cairo Congress by Ed. Rabello and Rabello Junior of Brasil, and by Balina and Basombrio of the Argentine, that favour the clinical form of leprosy classification based on an anatomico-clinical criterion, and reviewing our clinical observations of 583 cases of leprosy, we came to the conviction that the three histopathological types described by Jeanselme are the surest base for the orientation of an anatomico-clinical classification that represents the real tendency of the South American leprologists. Now the subject is being studied in Brasil and Argentina and comments are asked for in the *Revista Brasileira de Leprologia* with the following initial base:—

Primary Classification	} Lepromatous Simple inflammatory (undifferentiated) Tuberculoid
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" This classification, including the intermediate and uncharacteristic type, emphasises Rabello's conception of the ' polar forms ' for the lepromatous and tuberculoid cases, on account of the relative stability of the corresponding clinical types. These forms

present very well differentiated clinical aspects, however much they may show early atypical forms, the diagnosis of which depends on histopathological verification.

“ The undifferentiated form, corresponding to the simple inflammatory condition of leprosy, shows less stable clinical aspects. It comprises transitional evolutionary phases towards the polar forms, dependent on the modifications in the process of the defence of the body, with either allergic tendency (pre-tuberculoid) or anergic tendency (pre-lepromatous) constituting combined or transitional forms of the disease.

“ Jeanselme’s histological pictures do not present any preference for anatomical systems, but determine various clinico-morphological pictures in the skin as well as in the peripheral nerves, justifying the sub-classification of clinical forms that have been described.

‘ The present classification adopts the histopathological criterion, admitting the lepromatous as primary form, and including the tuberculoid as a sub-type of the primary neural form: thus the Cairo classification corrected one error of the Manila classification, but did not recognise the clinical and immuno-histological individualization of the tuberculoid form, maintaining the vagueness of the neural or tropho-anesthetic forms of Leloir.’”