

Report on the treatment of leprosy with gurjun oil and other remedies in hospitals of the Madras Presidency.

Contributors

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Royal College of Surgeons of England

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No. LII.

REPORT

ON

THE TREATMENT OF LEPROSY

WITH

GURJUN OIL AND OTHER REMEDIES

IN

HOSPITALS OF THE MADRAS PRESIDENCY.



PUBLISHED BY AUTHORITY

By Edward Balfour

MADRAS:

PRINTED BY E. KEYS, AT THE GOVERNMENT PRESS.

1876.

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No. 415.

OFFICE OF SURGEON-GENERAL,
INDIAN MEDICAL DEPARTMENT,
FORT SAINT GEORGE, 17th July 1876.

From

SURGEON-GENERAL E. G. BALFOUR,
*Surgeon-General, Indian Medical Department,
Fort St. George.*

To

THE CHIEF SECRETARY TO GOVERNMENT,
Public Department, Fort St. George,

SIR,—With reference to G.O., No. 937, dated 24th August 1874,
and the orders as per margin, I have the honor
G.O., No. 1,017, of 12th August 1875, Public Department. to submit to His Grace the Governor in Council
G.O., No. 1,296, of 25th October 1875, Public Department. précis of the results of the treatment of Leprosy
in this Presidency with gurjun oil, as also the
reports in full of such medical officers as have
had opportunities of treating patients with the remedy.

2. *Leper Hospital, Madras.*—Surgeon Thompson of the 1st Madras District is in charge of this institution. He bears testimony to the improvement in the general health of patients, and to the comfort which they derive from the use of gurjun oil. He states, however, that the course of the disease is divided into various stages, each of which is characterised “by a group of symptoms or appearances,” and that the absorption of tubercle and temporary return of sensation to parts previously numb may be “simply passing changes incidental to the natural course of the disease.” He then gives a brief summary of his experience in the use of the oil and concludes by saying, “that the gurjun oil does not possess any intrinsic value in the cure of leprosy. As a cheap and unctuous oil, it is well adapted to carrying out the principle of daily exercise instituted by Surgeon-Major Dougall, which, with other hygienic conditions included in his mode of treatment of this disease, has done much good in improving the health, condition, and general comfort of the patients. Internally administered it is a useful purgative, described by the patients as producing a very pleasant

feeling of lightness and inclination for exertion, but if frequently repeated it ceases to have this effect."

3. *Triplicane Dispensary*.—Surgeon-Major Andrews treated two cases of leprosy with the oil, but as one of them was imperfectly developed and complicated with a syphilitic eruption, he draws no conclusions from the results of its treatment. The other was a well marked case of tubercular leprosy, and judging from the results in this case he is of opinion, "that though gurjun oil may be an excellent remedy for stimulating and healing leprosy ulcers, thereby improving both the mental and physical condition of the patient, yet it has no power over the constitutional disease."

4. *Surgeon Macrae, A.M. & M.D.*, gives a brief statement of some cases of leprosy which he treated with the oil, and states "that there was some improvement in every patient who was able to go on with it without interruption." He further observes that if in charge of a leper hospital he would feel inclined to try "pure olive or any other bland oil" on a few patients, prescribing it in the same way as Dr. Dougall does the gurjun, and disguising it so that they might think they were using something new. It may be stated that this officer was for some time in charge of the Leper Hospital, Madras, and his final conclusion is, that "it is just possible that the chief virtue in all the treatments above mentioned lies in the prolonged frictions of the skin with the healthy exercise involved, coupled, of course, with cleanliness, fresh air, regular diet, and *hopefulness*."

5. *Chingleput Dispensary*.—Surgeon E. A. Trimnell treated 64 in-patients with gurjun oil, and gives in a tabular form a brief history of each case. As to the results he says: "from the following table it will be seen how efficacious the treatment has been; although there were not more than two entire cures, still there is hardly a patient who has been any length of time under treatment who has not greatly benefitted by it." The cases which seemed to benefit least by the use of the oil "were those in which the anæsthesia was only in patches, often lighter colored than the rest of the body." "Besides these in-patients there were between thirty and forty out-patients, all of whom profitted more or less by the gurjun oil treatment."

6. *Guntoor Dispensary*.—Surgeon S. M. Tyrell treated 6 in and 32 out patients with gurjun oil and observes that "it has in my experience effected a vast deal of good in the general condition and health of these sufferers. He also remarks: "It has not, however, as yet effected a thorough cure," and again "the progress of the disease has, in my opinion, been stayed."

7. *Berhampore*.—Surgeon-Major Beach treated twenty-two cases of leprosy according to Dr. Dougall's method, and of this number

three are reported to have been cured, and nineteen relieved and absented.

8. *Bimlipatam Dispensary*.—Assistant Apothecary Xavier had five in-door and twenty-one out-patients under treatment with gurjun oil. He was, however, unable to give the remedy a fair trial, as for want of funds no separate accommodation could be provided for in-door patients, and as they had no means to support themselves they had to be taken off the books to make room for other patients. The general results were as follows:—The five in-patients were discharged unrelieved. Of the twenty-one out-patients nine were discharged relieved, six no better, and six absented themselves.

9. *Cuttack, 41st Regiment N.I.*—Surgeon-Major J. S. Ridings had one case of leprosy in a sepoy of the corps. It was of the mild anæsthetic form, and after a course of gurjun oil the man was discharged cured. A follower of the regiment, who was also affected with the disease, was treated by one of the Hospital Assistants with beneficial results.

10. *Secunderabad*.—Deputy Surgeon-General Burn, when forwarding the reports of regimental medical officers, as to their experience of the results of the treatment of leprosy with gurjun oil, states that he does not think that such trials dispose of the question at issue, which can only be decided in leper hospitals under proper direction and supervision. He adds that Surgeon-Major Trimnell had under his care in the *Cantonment Hospital* a private of the K. Company, Sappers and Miners, suffering from leprosy, and that after being about two months under the gurjun oil treatment the progress of the more prominent symptoms was arrested, and the man was able to return to duty. Eight cases in the *3rd Regiment* were treated by Surgeon McNally, M.D., and all, with two exceptions, were more or less benefited by the use of the oil. Two reports on these cases, submitted by this officer at different periods, will be found recorded. One case was treated by Surgeon Rogers-Harrison in the hospital of *29th Regiment*, but the oil disagreed with the patient and had to be discontinued. In the *40th Regiment* one case was treated by Surgeon Levinge, and in this instance the use of the oil proved beneficial.

11. *Calicut Leper Hospital*.—Surgeon-Major Roberts, M.D., instituted the gurjun oil treatment in this lazaretto, and states that the results of the trial lead “to the conclusion generally that it is beneficial and in some instances curative, but really not more so than many other modes of treatment that have from time to time been advocated and tried.” He considers that it has not proved “so paramountly successful as at the Andamans,” and observes that this may be partly owing to the treatment having been less continuous in the Lazaretto than in the convict settlement, as the mendicant leper can come and go as he

pleases, and is impatient of control. He also assumes that the success in the Andamans may have been partly owing to a superior diet to that allowed in the Leper Hospital. He concludes by saying, that he has no faith in any specific for leprosy, "nor indeed is it in the nature of things to find a specific for this fell disease." Appended to his report are two statements showing, in detail, the results of treatment of twenty cases of leprosy.

12. *Cannanore Jail Hospital*.—Surgeon-Major F. Fletcher had under his care three leper convicts whom he treated with gurjun oil, and he says regarding them: "I was struck by the manifest amelioration of the symptoms of leprosy brought about by the gurjun oil. It is probable that the remedy will be found to be particularly valuable in the early stages of the disease, and beneficial in all."

13. *Pallipott Lazaretto*.—Surgeon-Major Doyle states that he was only able to put three patients under the gurjun oil treatment, as all the others, with the exception of one hopeless case and four using cashew-nut oil, were undergoing fumigation with carbolic acid. Of the three above mentioned one left at his own wish, one was discharged for hard drinking, and on readmission had to be discharged for theft, while the third deserted as he did not like the treatment. He also states, that there is great difficulty experienced in getting the patients to submit to any treatment.

14. *Madura Dispensary*.—Fifteen cases of leprosy were treated in this institution with gurjun oil, and a tabular statement is submitted of the results. From this it appears that the treatment was generally beneficial. Surgeon Mark Robinson, who was in charge, expresses no opinion as to the efficacy or otherwise of the remedy.

15. *Salem Dispensary and Jail*.—Surgeon-Major Pearse communicates the results of the treatment under his own care of four cases *viz.*, two dispensary patients and two convicts, and of two which were treated by subordinates in dispensaries in the Salem District. He considers the number of cases insufficient for any confident opinion, but regards "the experiment as, up to a certain point, successful."

16. *Trichinopoly Jail and Dispensary*.—Twenty-six cases of leprosy were subjected to the gurjun oil treatment by Surgeon-Major (now Deputy Surgeon-General) Wilson, *viz.*, three of a trifling nature in the prison, and 23 of a severe character in the Civil Hospital. He joins in the general complaint, as to the difficulty experienced in getting mendicant lepers to remain for any length of time under treatment, but observes that when they did remain the symptoms were mitigated, but in no case entirely removed. He concludes by saying "on the whole I am well satisfied with the results of the gurjun oil treatment."

17. In submitting my own views briefly on the above summary I will arrange the reports in three groups, as follows:—

- A. Reports of the officers in charge of the three Leper Hospitals.
- B. Reports of the officers in charge of Civil Dispensaries and Jails.
- C. Reports of Regimental Medical Officers.

Those in the first group are the most important, as the medical officers have had large and special opportunities for making themselves acquainted with leprosy in all its phases, and superior facilities for carrying out the experiments. It is to be regretted, however, that circumstances prevented a fair trial being given to the oil in the Palliport Lazaretto.

18. (A.) *Reports of the officers in charge of the three Leper Hospitals.*—As the treatment with gurjun oil imposes a good deal of regular exertion on the leper, in the shape of rubbing the remedy into the skin, and as this process has to be continued regularly for a long period to be of any use, it is not to be wondered, considering the mental hebetude of the confirmed leper, that difficulty was experienced in getting some patients to persevere in the inunction for a sufficient length of time. In the report of the Madras Leper Hospital no allusion is made to any such difficulty, but Surgeon-Major Roberts states that, in the Calicut institution, the treatment was, from this cause, not so continuous as that pursued in the Andamans. In reference to this point it is remarked by Surgeon-Major Macrae, who was for some time in charge of the Madras Leper Hospital, that “lepers are far too indolent to take the trouble of rubbing themselves for long periods every day, and unless there is some one present to see them do it, the work is very slipshod.” In spite of this obstacle, the gurjun oil treatment had a fair trial in the Madras and Calicut Lazarettos and the medical officers of both institutions agree in thinking, that although the oil alleviates the symptoms it possesses no specific virtue as a remedy in leprosy. Surgeon Thompson says “it does not possess any intrinsic value,” and Surgeon-Major Roberts “that it is beneficial, and in some instances curative, but really not more so than the other methods of treatment.” Surgeon-Major Macrae suggests the use of some other bland oil used in the same manner, and thinks it possible, that the chief virtue of the gurjun treatment lies in the prolonged frictions of the body, coupled with a carefully regulated personal hygiene. It will be observed, therefore, that the officers in the department best qualified to judge of the value of gurjun oil as a remedy, do not consider that it possesses any particular efficacy.

19. (B.) *Reports of Officers in charge of Civil Dispensaries and Jails.*—The reports from these institutions are on the whole favourable

as regards the efficacy of the oil, and several cures are reported. As regards the cures, it would be most desirable to learn something of the future history of the patients, as it is possible that merely the more prominent symptoms of the disease were subdued for the time. As pointed out by Surgeon Thompson leprosy passes through successive stages, each of which has distinguishing symptoms, and it is probable that the supposed cure was simply an interlude between two stages, or some change incidental to the course of the disease. It must at the same time be remarked, that these reports show that gurjun oil is capable of effecting much improvement in the condition of lepers, and thereby of greatly alleviating their suffering both bodily and mental. And even this much must be a great comfort to the unfortunate leper, who is regarded with loathing by his fellow creatures, and for whom there are none of those social pleasures, which lighten the sufferings of such as are afflicted with other forms of incurable disease.

20. (C.) *Reports of Regimental Medical Officers.*—The cases under this head were necessarily few, as declared leprosy is considered to render the subject of the attack unfit for further service, and he is discharged accordingly. The reports show that the gurjun oil was useful in alleviating the more prominent symptoms of leprosy. One case in the 41st Regiment is said to have been cured, but it will be interesting to watch the future medical history of this man.

21. In conclusion I have to observe generally, that the results of the trial of gurjun oil have been encouraging. Although it cannot be regarded as a specific it is of great benefit in relieving the more distressing symptoms of leprosy, and as its use is associated with various valuable hygienic measures, I regard it as one of the best modes of treatment that have hitherto been brought to the notice of the profession. It is evident, however, that its actual efficacy can only be ascertained by prolonged use in selected cases. I have the honour therefore to recommend that a careful trial be continued for another year, subject to a second special report at the end of that period.

I would also add my conviction that the internal use of the chaulmoogra oil merits a careful and long-continued trial.

I have the honour to be,

Sir,

Your most obedient Servant,

EDWARD BALFOUR, Surgeon-General,

Surgeon-General, I.M.D.

MADRAS TOWN.

REPORT UPON THE TREATMENT OF LEPROSY AT THE LEPER HOSPITAL, MADRAS, WITH GURJUN OIL.

ALL those patients who remained in hospital on the 15th December 1874 were placed under treatment on that date, and have since been taking the Gurjun oil, on the plan recommended by Surgeon-Major Dougall. When any patient fell ill, the oil was stopped until he recovered.

There are other patients, too, under the treatment of Gurjun oil who have been only a short time in hospital, as they were admitted subsequent to the 15th December 1874; and there are a third class who were placed under treatment at the commencement, but are not a full year under the influence of the Gurjun oil, as they had left the hospital and returned after varied periods of absence.

These interruptions, to the original intention of obtaining results from observations, extending over twelve months, have not been without advantage, as they afforded opportunities for noting the changes which occurred when the treatment was discontinued for a time, and of contrasting the effects of a year's treatment with that of a few months.

After carefully reading Surgeon-Major Dougall's report upon the success which attended his practice at Port Blair by the Gurjun oil, I find that, when it is compared with the experience afforded at this hospital during the past year, the improvement in the general health of the patients and the comfort which they derive here is very much what followed the treatment at the former place, but the results in regard to the disease itself are apparently very different; in short, they are so marked that it is difficult to account for them, as I feel there has been no mistake made in strictly carrying out the instructions given in Surgeon-Major Dougall's printed paper on the subject.

Judging from the report itself, however, it does not seem unlikely that, as Dr. Dougall did not possess a very extensive experience regarding the nature of leprosy, he might have misinterpreted the very great improvement in the general health of those he had treated for signs of removal of the disease.

On page 7 of the printed report Surgeon-Major Dougall acknowledges that he knew but very little about leprosy; to use his own words, he says: "I took up the subject entirely free from any theories regarding the origin, propagation, or transmission of this disease, or the principles upon which a cure ought to be looked for."

Having thus, as it were, begun the treatment empirically, it is not unreasonable he should have believed that such changes as the absorption of tubercle and the temporary return of sensation in parts previously numb proved to be signs that the disease was cured, when they were simply passing changes incidental to the natural course of the disease.

From all that can be gleaned from the writings on the subject, leprosy is clearly shown to be a constitutional disease, characterised by a special symptomatology, which is divided into stages, each stage being recognized by a group of symptoms or appearances, which, after existing for some time

and then fading or passing away gradually, would lead the casual observer to conclude that the disease was cured. Thus during the stage of the macular eruption, when it is in its incipient state, sensation in the affected part of the skin is often more acute than when in the normal state; after a time this becomes blunted, and in some parts is entirely lost; soon, however, the patches fade, the thickened and indurated skin becomes soft and flexible and regains its natural state, but this does not continue so for any continued period; other patches form in the same part and pass through the same changes until sensation is permanently blunted. When in the tubercular stage or variety of the disease the tubercles are liable to rapid, and sometimes, great changes, according as the predisposition, bodily debility, and changes of weather and season influence the general health of the patient. The life-term of a tubercle is always limited, and earlier or later, softening and absorption of their entire mass takes place. Again, the tubercular form frequently changes into the anæsthetic variety, and this happens not unfrequently too, when the patient and his friends have been long buoyed up with hopes of returning health.

Dr. Vandyke Carter, in describing the course of the disease, states: "So far as I know the natural course of the eruption in leprosy is to spread to a certain extent and then to fade. Leprous nodules or tubercles, which are more accumulated formations than the patches, also tend to disintegration and final absorption. The nerve disease is more permanent, but is as well liable to spontaneous subsidence."

Such are the natural tendencies of this disease, or the changes through which it passes in its course from bad to worse, and they are exactly what I have witnessed in many of the patients who have been under observation here.

I have carefully watched from day to day in those who are affected with the simpler or eruptive form of the disease patches with their reddened elevated edges and deeply discolored surfaces, gradually fading away as the oil was perseveringly rubbed in, and then becoming less and less distinct; would at last completely disappear and lead me to believe the skin had permanently returned to its normal state, when, after longer or shorter intervals, another patch would appear in the same place, and, as it heightens in color would involve a larger area of surface than the first patch did; would increase in intensity, and then gradually as before fade and disappear, or, as frequently happened, would involve more of the surrounding skin and go through similar changes; whilst these local changes were going on the patient was in perfect health.

Then in regard to tubercles, I have seen these shrivel and dwindle away by absorption, or after softening they would burst and disappear, leaving the patient greatly relieved, and to all appearances on a fair way to recovery from the disease; but after a period of longer or shorter duration, the oil being the while perseveringly rubbed in, a paroxysm of febrile symptoms would attack the patient, not unlike that which precedes the eruption of small-pox; and after continuing for three or four days, would subside as soon as a fresh crop of tubercles broke out on the skin. Many of the patients in hospital have had two, and a few even three, outbreaks of tubercle during the past twelve months. One patient, a boy of about twelve years of age, I noticed was most anxious to be cured of the disease, and his exertions were a contrast to many others far

his senior in age. Yet he is at this time not much improved; he has had three outbreaks, and is still very much disfigured by the disease.

A young woman aged twenty years, who is an out-patient, and most anxious to get well, comes to hospital very regularly every fortnight to obtain a fresh supply of medicine, which I feel certain she takes great care in using; this patient has had the tubercular form of the disease, and although she had three outbreaks of tubercles, I hoped, and the poor thing appeared delighted, that she would soon be well. She is almost free from tubercles now, and has not had any return for a long time. At her last visit I was surprised to find her looking so well and in such good spirits. She said she had no return of tubercles, but felt perfectly well, and had no feeling of numbness any where. I observed, however, that she had had a large bulla on the right palm, which left a shining and shrivelled scar, and that the whole surface of both feet had so lost sensation that she could not feel the prick of a pin any where on it. When she first came under treatment she had only lost sensation in the last phalanges of the toes. In this case the tubercular form of the disease was apparently passing away, and, instead of leaving the patient in a more hopeful state, it was replaced by the anæsthetic or more permanent stage of the disease.

A third patient also raised my hopes at the onset that the gurjun oil would prove a means of curing leprosy. He was a young robust East Indian aged twenty-six years. When I first saw him he had tubercles on the face, ears, and a few on the upper part of the chest, a small ulcer on the right cheek, and the nails of the fingers were softening. After persevering for two months with the gurjun oil the tubercles disappeared and the ulcer healed, but the degeneration of the nails continued to increase. At this time Surgeon-Major Dougall, in company with the Deputy Surgeon-General, visited the Leper Hospital, and I was glad to point to this case as one which I thought would be cured. A week or two after this the patient left the hospital and was absent for about a month, and had evidently been dissipating, combined with which the want of the sufficient and regular diet he had been used to in the hospital, and other hygienic conditions, lowered his general health and tone of body to such an extent that the disease returned in a severer form, and he was not long ago (when obliged to leave the hospital on account of his unsteady habits and quarrelsome disposition) suffering also from anæsthesia of the feet and degeneration of toe nails, and altogether in a bad way.

The next two cases are of particular interest, as the patients derived more benefit from the chaulmoogra oil.

W. Daly, aged 36 years, has had leprosy about twelve years, his fingers and toes having sustained considerable mutilation, but the disease has not been in an active form for the past two years.

On the 15th December 1874 he was put on the gurjun oil treatment, as he was then suffering from two large patches on the right side of the body. He used the oil very perseveringly until the 15th November last, during which time the patches increased in thickness and spread almost all over the trunk, and the edges were often so irritable that he was obliged frequently to scratch them with a knife.

Since the 15th November 1875 he has used the chaulmoogra oil, and the benefit derived from it has been very great; the patches have faded, and the

irritation entirely subsided. Whether it will return is left to time and further observation to determine. He says the numbness he has had from the hips downwards has not been in any way relieved by the gurjun oil.

Cullen, European, aged 51 years, has had leprosy for three years, no mutilation, but has had sores on both hands; three fingers of right hand and the little finger of left shrivelled and firmly contracted.

Has been using gurjun oil since February last for large patches which were present on the thighs and back. During the use of the gurjun oil the patches faded and re-appeared three or four times, but on the 15th November 1875 they were so large and irritable that he begged me to give him the chaulmoogra oil. He now says he feels greatly relieved, the numbness which he had from elbows downwards has considerably lessened, and he can move the fingers and hand about much more freely; the patches are now scarcely discernible, but further treatment is necessary.

The foregoing are the circumstances and facts elicited during this inquiry, and the cases which have been the subject of special remark illustrate the results generally that have followed the gurjun oil treatment at this hospital.

From my own experience I am of opinion that the gurjun oil does not possess any intrinsic value in the cure of leprosy. As a cheap and unctuous oil it is well adapted to carrying out the principle of daily exercise instituted by Surgeon-Major Dougall, which, with the other hygienic conditions included in his mode of treatment of this disease, has done much good in improving the health, condition, and general comfort of the patients.

Internally administered it is a useful purgative, described by the patients as producing a very pleasant feeling of lightness and inclination for exertion, but if frequently repeated it ceases to have this effect.

MADRAS,
15th December 1875.

(Signed) D. R. THOMPSON, M.D.,
Surgeon, 1st District.

TRIPLICANE.

Extract from the Annual Report by Surgeon-Major C. A. ANDREWS.

Leprosy (tubercular).—Mulliappen, æt 16, male, Hindu, October 1st, 1874. This boy is a pauper suffering from well-developed leprosy, but the disease has not proceeded to the stage of ulceration, and, as the patient is young, it is a most favorable case for testing the curative properties of gurjun oil, especially as the patient is willing to remain as long as he gets dieted.

States that his parents were healthy, but the paternal grandfather had leprosy, so that the disease may be hereditary. A diseased condition of the skin was first observed about the knee-joints, which slowly extended to the legs and thighs; was then stationary for some time, but during the last two years the whole body has become affected. There is no anæsthesia or altered sensation; the skin on the cheek, nose, and ears is paler than the rest of the body, and very much thickened; the skin of the trunk and arms is shining and thrown into small wrinkles; the legs and thigh present many small cracks which give them a honeycombed appearance, and the feet and hands are thick and rough; the toes and fingers are thickened, contracted, and shining as if on the point of ulceration. Hair short and dry, nails dried up and broken, expression of voice and countenance typical. Function natural.

Treatment.—

R Gurjun oil, 3j.

Lime water, 3j.

Aqua 3jss bis die.

R Gurjun oil 3j., lime-water 3j ; mix and rub well into the body twice daily. Full diet.

He remained under treatment by gurjun oil used both externally and internally till December 13th, in all seventy-four days, during which the oil was most assiduously applied all over the body. Another leper was under treatment at the same time, and these two rubbed the liniment into each other in the parts which they could not themselves reach. They were both thoroughly saturated with the oil, and were well fed, but in neither was there the slightest improvement or alteration, considering that in the case above related those grave nerve changes had not taken place, of which anæsthesia is a symptom and ulceration a result ; there could hardly have been a case selected more likely to be amenable to treatment ; but although the remedy was applied under the constant supervision of Mr. Moideen Sheriff and myself, the effect was nil.

The other case derived no benefit from the remedy, but as it was one of imperfectly-developed leprosy with complications of syphilitic psoriasis, no conclusions are drawn from the result. The first was a typical case of tubercular leprosy, and although it may not be fair to judge from the results of one case, the impression left upon my mind is that though gurjun oil may be an excellent remedy for stimulating and healing leprosy ulcers, thereby improving both the mental and physical condition of the patient, yet it has no power over the constitutional disease.

MADRAS,
5th October 1875.

(Signed) S. B. HUNT,
Surgeon, 4th District.

The Gurjun Oil method of Treatment.—No attempt has been made to improve upon Dr. Dougall's method. The effort has been to carry it out as strictly as possible, and the results, in spite of the drawbacks already referred to, have been very favorable.

There was none of the oil in store in November 1874, and it was not till the 15th December that I was able to start it. Seventeen Eurasians and 46 Natives were then made to use it, while on the 11th March 1875 the numbers were 1 European, 20 Eurasians, and 60 Natives. Besides these there were some out-door patients using it, but there is very little satisfaction in treating patients at their own houses. Lepers are far too indolent to take the trouble of rubbing themselves for long periods every day, and unless there is some one present to see that they do it, the work is very slipshod.

There would be nothing gained by detailing every case that adopted this treatment, but I can positively assert that there was some improvement in every patient who was able to go on with it without interruption. As already stated, many were prevented from doing so by intercurrent attacks of fever, &c.

Native, aged 47, mixed case.—Had been using chaulmoogra for some of the earlier months of 1874 without apparent benefit.

December 15th.—Skin and subcutaneous tissue of lower half of legs much thickened and scaly ; feet elephantoid ; loss of pain and touch sensations in upper and lower extremities.

February 25th.—Skin of legs healthy, and no thickening of right foot ; sense-touch returned in upper extremities except right hand and left little finger. A little pain also on pricking arms and forearms ; touch-sensation also returned to inside and front of thighs and inside of legs.

The following case improved as regards tubercles, but not in sensation :—

Native, aged 30, mixed.—December 15th.—A few tubercles on nose, ears, and nipples ; hair of outer half of eyebrows gone ; mutilation and distortion of fingers and toes ; some ulcers about the feet ; loss of touch and pain sensations in backs of both forearms and in both legs throughout.

February 25th.—Hardly a trace of tubercles about ears and nose ; hair of eyebrows growing. Not improved in sensation.

Native, aged 35 mixed case.—December 15th.—Scaly condition of skin generally ; thickened earlobes ; touch and pain sensations lost in hands, partly in forearms and from the knees downwards.

February 25th.—Skin generally smooth ; earlobes much reduced ; touch and pain sensations restored in hands and forearms and upper ends of inner aspect of legs.

Native, aged 45, anæsthetic case.—December 15th.—Loss of touch and pain sensations in upper extremities except inner aspect of arms and the whole of the lower extremities.

March 3rd, 1875.—Sensation restored to whole of arms and upper ends of inner aspect of forearms ; also restored in thighs and over the knees.

Two of the patients who were placed under gurjun on the 15th December 1874, and who had several attacks of fever between that date and the end of February, were found to have got worse as regards touch and pain sensations.

If in charge of a Leper Hospital for a long period I should feel tempted to try pure olive or any other bland oil on a few patients, prescribing it in exactly the same way as Dr. Dougall does the gurjun. It would be necessary to disguise it in some way so that they might think they were using something new. It is just possible that the chief virtue in all the treatments above mentioned lies in the prolonged frictions of the skin with the healthy exercise involved, coupled, of course, with cleanliness, fresh air, regular diet, and *hopefulness*.

MADRAS,
25th March 1875.

(Signed) W. MACRAE, A.M., M.B.,
Surgeon.

CHINGLEPUT.

Report upon the Treatment of Leprosy by Gurjun Oil (*balsam dipterocarpi*) in the Civil Dispensary, Chingleput.

The first case was admitted on the 11th of February 1875, and on his leaving the hospital he reported the benefit he had derived from the treatment he had received ; the next case was admitted on the 16th of March, and then as the remedy became known lepers began to flock to the dispensary for treatment. There have been 64 admissions up to the 24th of September and 15 admissions since. A great number of these lepers have put in their

time in hospital in two or even three different periods, as they often express a wish to return for a short time to their homes and come back for treatment. A large number of lepers left the hospital on account of a cholera patient having been admitted. For this and the previous reason the time under treatment in many cases was too short for much benefit to be derived. To show at a glance the benefit conferred in each case, I have drawn up a resumé of the history of each patient in a tabular form, showing the length of time under treatment, condition on admission and on discharge, and also how the disease was contracted, and the distance from which each patient came for treatment. From the following table it will be seen how efficacious the treatment has been; although there are not more than two entire cures, still there is hardly a patient who has been any length of time under treatment who has not greatly benefited by it. In nearly all the cases psoriasis when present was cured in a few days, the anæsthesia gradually diminishing, beginning to diminish from above downwards; for instance, the arms, as a rule, would recover before the forearms or hands, and the thighs before the legs and feet. The most obstinate cases, and which appeared to benefit less by the gurjun oil treatment, were those in which the anæsthesia was only in patches, often lighter colored than the rest of the body. With regard to the origin of the disease it was hereditary in sixteen cases—two by grandmothers, one by grandfather, two by a great-uncle, two by mother, six by father, one by father's sister, and two hereditary, but exact relationship not known. Three of the cases had brothers also affected with the disease. Fourteen lepers had a venereal history. One leper attributes the disease to gonorrhœa and bubo, two attribute it to gonorrhœa, one of them stating that he had heard that the woman from whom he contracted it had leprosy. Another leper contracted gonorrhœa when he was young, this being followed by anæsthesia in different parts of the body. Another contracted gonorrhœa twenty years ago, this being followed in two years by anæsthesia in the left thigh, which gradually spread. One contracted a chancre about the time the disease made its appearance; one had a bubo three years ago, followed by anæsthesia in left hand; one attributes the disease to connexion with a leprosy woman; one had a bubo and gonorrhœa eighteen years before the leprosy made its appearance. Another contracted gonorrhœa about a year after the leprosy appeared, this gonorrhœa being followed by an increase of the leprosy; one lived with a leprosy woman for four months, and the disease made its appearance two months subsequently. Another had gonorrhœa twenty years before getting leprosy. One lived with what he supposed to be a leprosy woman for six months, and the anæsthesia first came on a year after connexion. One had gonorrhœa four years before the appearance of leprosy.

Besides these in-patients there were between thirty and forty out-patients, all of whom profited more or less by the gurjun oil treatment.

(Signed) E. A. TRIMNELL,
Zillah Surgeon, Chingleput.

Name.	Age in Years.	Occupation.	Date of Admission.	Length of Time under Treatment.	Condition on Admission.
Vadagery (Male).	30	Cooly..	11th February 1875.	Three months.	Has had leprosy for four years. Anaesthesia of the upper and lower extremities. Body covered with psoriasis. Shortening from ulceration of great and second toe of right foot. The man was emaciated and anæmic.
Shaik Esmall (Male).	40	..	16th March 1875.	Three months and fourteen days.	Has had leprosy for seven years. Face covered with tubercles and body with psoriasis. Anaesthesia of left leg and right foot. He had also quotidian fever.
Ponnappa Moodelly (Male).	40	..	27th March 1875.	Eighteen days.	Has had leprosy for two years. Had anaesthesia of legs and arms. Face covered with tubercles. Has lost the tips of nearly all the toes. Thickening of the fingers. Skin of the feet hypertrophied. He was weak and anæmic.
Chinniah Naidu (Male).	40	..	Do. ..	Four months and fifteen days (still under treatment).	Has had leprosy for seven years. Anaesthesia of both legs and forearms and outer side of right thigh. Has shortening of all the fingers of left hand. All the fingers of right hand deformed, and he has lost the greater part of right index finger. Has an ulcer on palm of right hand. All the toes deformed. Shortening of right great toe for more than half its length. Two deep foul ulcers on sole of foot.
Ethoorajah Pillay (Male).	37	Cultivator.	Do. ..	Forty-one days.	Has had leprosy for four years. Has anaesthesia of legs and arms and on chest. Hypertrophy of toes of both feet, also fingers. Body covered with psoriasis. The man is weak and anæmic.
Cunni (Male).	40	..	3rd May 1875.	Three months and eight days.	Had leprosy for one and a half years. Anaesthesia of both legs and arms. The left forearm was but slightly anæsthetic. Toes of both feet hypertrophied.
Nagappa Nair (Male).	35	..	7th May 1875.	One month and three days.	Has had leprosy for one year. Has anaesthesia of both legs and arms, from elbows to hands. Body covered with psoriasis. Ulcer on sole of right foot. Tubercles on face.
Yellen, Pariah (Male).	40	..	25th May 1875.	Three days ..	Had leprosy for twenty years. Anaesthesia all over the body with shortening of toes and fingers. Psoriasis on different parts of the body.

Amount of Benefit conferred by Treatment on Discharge.	Disease how contracted. Hereditary or otherwise.	Distance from which Patient came for Treatment.	Treatment.	Remarks.
Psoriasis was cured in about a month. Sensation was restored to the anæsthetic parts with the exception of one foot, and he was nearly well when he left hospital. His general health was much improved.	He attributes the disease to gonorrhœa and bubo which he contracted before the disease made its appearance.	..	Balsam diptero-carpi, according to Dr. Dougall's system.	Was under treatment at one period for about a month and subsequently for two months.
The psoriasis was cured after a month. The anæsthesia got much better, and the tubercles disappeared from the face. He expressed himself greatly benefited by the gurjun treatment.	Attributes the disease to gonorrhœa, and states that he heard that the woman from whom he contracted it had leprosy.	..	The leprosy was treated according to Dr. Dougall's system. The fever was treated with quina, &c.	He got frequent attacks of fever; had also diarrhœa from the use of the balsam, which had to be suspended internally, but was still used externally.
He was somewhat benefited, but left the hospital before much improvement was possible.	No hereditary or venereal taint.	..	Balsam diptero-carpi, according to Dr. Dougall's system.	..
The anæsthesia has much diminished; the ulcers are nearly well, and his general health is much improved. Professes to have received immense benefit.	Do. ..	..	Do. ..	Has put in his time in hospital on two different occasions.
Psoriasis was cured in thirteen days. Sensation entirely restored except to great toes.	Do. ..	..	Do. ..	Both this and the preceding case left the hospital on account of a dead body being brought in. This man again returned for treatment.
The anæsthesia was almost entirely cured.	His two grandmothers had leprosy.	..	Do. ..	..
Anæsthesia diminished. Psoriasis cured. Tubercles on face diminished.	No hereditary or venereal taint.	..	Do. ..	Left the hospital before he had time to benefit much from treatment. Left the hospital without leave.
Was too short a time in hospital to derive any benefit.	The disease was hereditary.	..	..	..

Name.	Age in Years.	Occupation.	Date of Admission.	Length of Time under Treatment.	Condition on Admission.
Putchummal (Female).	30	..	29th May 1875.	Three months.	Has had leprosy for about ten years. Anæsthesia of both legs and fore-arms. Several large tubercles on nose, right arm, right breast, back of left arm, and on both sides of back, and on both legs, where there was also psoriasis.
Mungey (Female).	17	..	29th May..	Three months and fourteen days.	Has had leprosy for a year. Anæsthesia of legs and upper extremities. Contraction of two fingers of right hand.
Kader Saib (Male).	57	Salt-fish merchant.	6th June ..	Nearly two months.	Has had leprosy for four years. Anæsthesia of hands and feet and legs. Tubercles on face, ears, and abdomen.
Fathma Bee (Female).	12	Child..	Do. ..	Do. ..	Has had leprosy for one year. Has anæsthesia in scattered parts of the legs and foot and of left hand. No tubercles or deformity.
Soobroya Naiken (Male).	30	Cultivator.	7th June 1875.	Two months and one week.	Has had leprosy for five years. Anæsthesia of both upper and lower extremities, which were covered with psoriasis. Shortening of both great toes and contraction of all the fingers. Tubercles on ears, back, thighs, and fore-arms.
Yagambram (Male).	29	Weaver.	Do. ..	One month and one week.	Has had leprosy for three years. Anæsthesia of both legs and fore-arms. Psoriasis on left leg. Tubercles about face and ears. Thickening and ulceration of right great toe, and a deep ulcer on left great toe. Ulcer on right fifth toe.
Hoosman Khan (Male).	60	Pensioned Peon.	12th June 1875.	Three months.	Has had leprosy for five years. Has anæsthesia of both legs and feet and left forearm. Hypertrophy of some of the toes and dislocation of some fingers. Face tubercular. Voice characteristic of leprosy. Body covered with psoriasis.
Annamalay ..	40	Play actor.	13th June 1875.	Twelve days.	Has had leprosy for five years. Anæsthesia of right thigh and both legs. Psoriasis on both legs and hands. Shortening of all the fingers, which are stiff and contracted. Shortening of toes. Small ulcers about the toes. Face slightly tubercular.

Amount of Benefit conferred by Treatment on Discharge.	Disease how contracted. Hereditary or otherwise.	Distance from which Patient came for Treatment.	Treatment.	Remarks.
The anæsthesia diminished and the psoriasis was cured, but there was but little effect upon the tubercles. Had anæsthesia only up to about four inches above the wrists on discharge, but the amount of benefit was but slight on the whole.	No hereditary or venereal taint.	..	Balsam diptero-carpi, according to Dr. Dougall's system.	..
Sensation restored to the left upper extremity. There was still anæsthesia of the right forearms, but not of arm. Sensation restored to left leg. Still had anæsthesia of right leg.	Hereditary. This woman is daughter to the preceding patient.	..	Do. ..	..
Sensation partially restored to right hand; no benefit otherwise.	No hereditary taint. Contracted gonorrhoea when young, which was followed by anæsthesia in different parts of the body.	20 miles.	Do. ..	Had frequent attacks of fever, which interfered greatly with treatment for leprosy.
Anæsthesia slightly diminished. Not much benefit.	Hereditary: her father has leprosy.	Do. ..	Do. ..	..
Sensation restored to arms and upper part of forearms, also to thighs. Psoriasis cured. Was much benefited by treatment.	No hereditary or venereal taint.	60 miles.	Do. ..	
Sensation restored to the upper extremities, and nearly so to legs. Psoriasis cured. Much benefited by treatment.	Do. ..	12 miles.	Do. ..	..
Appeared to benefit greatly at first, and the psoriasis was cured, but the anæsthesia was not much benefited. His health improved, and he expressed himself much benefited.	Contracted gonorrhoea twenty years ago; this was followed in two years afterwards by anæsthesia in the left thigh, which gradually spread.	18 miles.	Do. ..	Says he has had leprosy for five years, but that he had anæsthesia two years after contracting gonorrhoea twenty years ago.
Was in too short a time to benefit by treatment.	No hereditary or venereal taint.	14 miles.	Do. ..	..

Name.	Age in Years.	Occupation.	Date of Admission.	Length of Time under Treatment.	Condition on Admission.
Thoolkanam ..	40	Cultivator.	26th June..	Two months and four days.	Has had leprosy for eight months. Anæsthesia of both forearms. Body covered with psoriasis. No tubercle or ulceration. Itch in several parts. Skin hypertrophied about the ankles.
Ummeappen ..	30	Shepherd.	4th July ..	Fourteen days.	Has had leprosy for three years. Anæsthesia of left forearms and shortening of the first and second fingers of left hand; also loss of tips of all the fingers of righthand. Psoriasis all over the body, and especially on left hand, which is contracted.
C. Yellen ..	40	Cooly..	6th July 1875.	Nearly two months.	Has had leprosy for five years. Has anæsthesia of both lower and upper extremities. Psoriasis about the thighs, back and upper extremities. Shortening of index finger of left hand; also of the two first fingers of right hand, which are not much more than half their proper length. Contraction of third finger and shortening of fourth. All the toes are shortened. Ulcers about the feet.
Rajoo.. ..	20	Cooly..	7th July ..	One month and twenty days.	Has had leprosy for three years. Anæsthesia of both lower extremities and both forearms. Skin of left thigh and leg much hypertrophied, and covered with a thick crust of psoriasis. Skin of right leg also hypertrophied. Contraction of all the fingers of both hands. Shortening of several fingers.
Munesawmy (Male.)	19	Cooly..	9th July ..	One month and twenty-four days.	Has anæsthesia in left upper extremity and in patches in different parts of the body. Contraction of three last fingers of left hand and of two last of right hand.
Mahomed Ibrahim.	30	Bandy driver.	9th July ..	One month ..	Had leprosy for twenty-five years. Has anæsthesia of both upper and lower extremities, slight in the thighs. Has shortening of the second and third fingers of right hand, and shortening and contraction of three last fingers of left hand. Shortening of three toes of right foot and an ulcer on left leg.
P. Yellan ..	30	Cultivator.	14th July..	Eleven days ..	Had leprosy for four years. Has anæsthesia more or less all over the body. Contraction of all the fingers of left hand and retraction of some fingers of right hand. Has patches of morphea about the fingers. Hypertrophy of skin of feet. Psoriasis in different parts.

Amount of Benefit conferred by Treatment on Discharge.	Disease how contracted. Hereditary or otherwise.	Distance from which Patient came for Treatment.	Treatment.	Remarks.
No anæsthesia. Leprosy cured. Psoriasis cured.	Contracted a chancre about the time the leprosy made its appearance.	..	Balsam diptero-carpi, according to Dr. Dougall's system.	This is almost the only case of perfect cure.
No benefit	Had a bubo three years ago; this was followed by anæsthesia of left hand.	18 miles.	First treated with balsam diptero-carpi, but on account of fever took quinae omitting the gurjun oil.	Was only under gurjun treatment for six days, as he got fever and took quinae.
Psoriasis cured. Sensation restored to the arms, but not to the forearms. Partial sensation restored throughout the lower extremities.	Hereditary; by his father.	30 miles.	Balsam diptero-carpi according to Dr. Dougall's system.	Left the hospital with a number of other lepers on account of a case of cholera having been brought to the hospital.
Psoriasis cured; not much decided benefit otherwise, though the anæsthesia has undoubtedly diminished.	Hereditary; his grandmother had it.	22 miles.	Do. ..	Attended hospital very irregularly, but in his time in three successive periods.
Sensation restored to the left arm, not forearm. The anæsthesia in patches continued. Not much benefited.	Great-uncle had the disease.	15 miles.	Do. ..	Put in his time in hospital in two periods.
Sensation partially restored to the arms. Anæsthesia of forearms continues. Sensation restored to thighs, not legs. Can move his fingers almost better. Was too short a time under treatment.	His great-uncle had it.	15 miles.	Do. ..	....
Psoriasis nearly cured. No benefit to anæsthesia. He was too short a time under treatment to derive much benefit.	Grandfather had it.	7 miles.	Do. ..	....

Name.	Age in Years.	Occupation.	Date of Admission.	Length of Time under Treatment.	Condition on Admission.
Marry ..	25	Shepherd.	14th July..	One month and two days.	Had leprosy for two years. Has anæsthesia of left forearm and of both legs. Skin of ankles and feet hypertrophied. Ulcer about both legs.
Kothandarama Pillay.	25	Cultivator.	16th July..	One month and eleven days.	Had leprosy for eight years. Anæsthesia of left lower extremity and left hand. Shortening of left index finger. Psoriasis on right hand.
Coomaran ..	24	..	17th July..	Two days ..	Had leprosy for four years. Has anæsthesia in patches about the body. No tubercles or psoriasis.
Emam Khan..	12	..	Do. ..	One month and twenty-four days.	Anæsthesia in patches (which are slightly lighter in color than the rest of the body) over the upper and lower extremities. No tubercle or psoriasis.
Coopoo (Female).	20	..	19th July..	One month and a half.	Had leprosy for a year. Anæsthesia of both forearms and feet, and shortening of index finger of right hand. Ulcers about fingers of right hand.
Maria Charee (Male).	40	Stone Mason.	Do. ..	Nearly three months.	Had leprosy for four years. Anæsthesia of both upper and lower extremities with psoriasis in patches. Has shortening and hypertrophy of right thumb. Shortening and contraction of all the fingers. Toes more or less shortened.
Veerasami ..	50	Cultivator.	20th July..	Twenty-four days.	Had leprosy for five years. Anæsthesia of both forearms and lower part of abdomen and of both legs, and shortening of some of the toes. Tubercles about the face.
Thillay ..	45	Do.	Do. ..	One month and two days.	Had leprosy for three years. Anæsthesia of both forearms and legs. Psoriasis in large patches over the body. Dislocation of toes.
Vengadalum..	37	Do.	22nd July..	One month ..	Had leprosy for five years. Anæsthesia of both hands and feet and psoriasis in arms and leg. Small tubercles about the ears and nose.
Bungaroo ..	13	..	Do. ..	Eighteen days	Has anæsthesia in patches about the body. No psoriasis.
Pethoo Naiken	..	Cultivator.	24th July..	Do. ..	Had leprosy for six years. Has anæsthesia of both forearms and legs. Contraction of all the fingers of left hand.
Gundoor Ponnen.	36	Do.	27th July ..	One month and four days.	Had leprosy for three years. Anæsthesia of both forearms, a portion of the abdomen, and of both lower extremities. Body more or less covered with psoriasis. Great thickening of skin of legs and feet.

Amount of Benefit conferred by Treatment on Discharge.	Disease how contracted. Hereditary or otherwise.	Distance from which Patient came for Treatment.	Treatment.	Remarks.
Sensation restored to upper part of left forearm. Has sensation at back of left hand. No benefit to anæsthesia in legs.	Mother had the disease.	7 miles.	Balsam dip-terocarpa, according to Dr. Dougall's plan.	....
Sensation restored to the whole of the left lower extremity, with the exception of a patch on left buttock. Sensation restored to left hand except the fingers. Was nearly cured.	No hereditary or venereal taint.	15 miles.		....
Was only two days under treatment, so derived no benefit.	No hereditary or venereal taint.	..	Do.	....
No benefit	His father has the disease.	..	Do.	....
Sensation restored to forearms and upper part of legs. Hands still slightly anæsthetic. No sensation in feet. Ulcers healing nicely.	No hereditary or venereal taint.	..	Do. ..	Put her time in hospital in two periods.
Sensation entirely restored with the exception of the hands and lower part of forearms. The feet and lower part of legs greatly benefited by treatment.	No hereditary or venereal taint.	20 miles.	Do. ..	....
Sensation restored to arms and hands and abdomen. Still has anæsthesia of legs and feet.	His brother has the disease.	17 miles.	....	Put in time in hospital in two periods.
Psoriasis cured in thirteen days. Sensation restored to left forearm. Not much benefited otherwise.	....	15 miles.	Do. ..	....
Sensation restored to legs except over the knee-joints. Sensation restored to right hand and partly to left. Psoriasis cured in eleven days.	No hereditary or venereal taint.	40 miles.	Do. ..	....
No benefit	Father has the disease.	..	....	Was in too short a time to get benefit.
Was too short a time under treatment to derive much benefit.	Attributes the disease to gonorrhæa.	..	Do. ..	....
Psoriasis much better. Sensation partly restored to front of left thigh. Sensation restored to abdomen. Not much marked benefit.	Attributes the disease to connexion with a leprous woman.	20 miles.	Do. ..	....

Name.	Age in Years.	Occupation.	Date of Admission.	Length of Time under Treatment.	Condition on Admission.
Manicupum Marry.	30	Cultivator.	27th July..	One month and twenty-seven days.	Has anæsthesia of face and both upper and lower extremities, which are covered with psoriasis. Shortening of all the fingers and of great toes. Ulcers about the toes. The nose has fallen in. Ulcers in toes. Hypertrophy of skin about the ankles. Enlargement of inguinal glands.
Vulsy ..	16	....	Do. ..	Twenty-four days.	Had leprosy for nearly a year. Anæsthesia of left forearm, and partially in legs and feet and right forearm. Tubercle on left ear. Psoriasis on both legs.
Annamallay Moodelliar.	58	School-master.	31st July..	Twenty-six days.	Had leprosy for two years. Anæsthesia of both forearms, and legs. Lost great toe of right foot. Two ulcers on left foot. Hypertrophy of skin of both forearms.
Thondroyen ..	59	Cultivator.	Do. ..	One month ..	Has had leprosy for two years. Anæsthesia of both feet and hands, and anæsthetic discolored patches about the body. Hypertrophy of skin about the left foot. Ulcer in heel. Contraction of little finger.
Nullatumbée..	40	Do.	5th Aug. ..	One month and six days.	Had leprosy for eight years. Has anæsthesia of both upper and lower extremities and part of abdomen. Contraction of fingers. Ulceration and shortening of some toes. Hypertrophy of skin of feet. Inguinal glands enlarged.
Veerasawmy ..	55	Do.	Do. ..	Seven days ..	Had leprosy for three years. Anæsthesia of upper and lower extremities, and slightly of chest and abdomen. Psoriasis in small patches. Shortening of some of the toes.
Codoor Vanjee.	60	Do.	8th August.	Twenty-two days.	Had leprosy for a month. Has anæsthesia of both hands and legs. Hypertrophy of skin of right foot. Ulcer on outer side of right foot.
Cheyoor Iya-samy.	30	Do.	Do. ..	Do. ..	Had leprosy for three years. Anæsthesia of both forearms and legs. Slight tubercle on cheeks.
Thoyee (Female).	23	Cooly.	10th August.	Two months and four days. Still under treatment.	Has had leprosy for six years. Anæsthesia of left forearm (which is covered with tubercles), but not of either hand. Anæsthesia of both feet and legs. The lips and skin are covered with tubercles, as also the nose and cheeks, but in a less degree.

Amount of Benefit conferred by Treatment on Discharge.	Disease how contracted. Hereditary or otherwise.	Distance from which Patient came for Treatment.	Treatment.	Remarks.
Psoriasis nearly cured. The anæsthesia slightly diminished. Not much benefit otherwise.	His brother had the disease.	12 miles.	Balsam diptero-carpi, according to Dr. Dougall's system.	Put in his time in hospital in two periods.
Sensation restored to both fore-arms.	No hereditary or venereal taint.	8 miles.	Do. ..	..
Had fever on several occasions which interfered with his treatment for leprosy, which derived but little benefit from treatment.	Had a bubo and gonorrhœa eighteen years before leprosy made its appearance.	10 miles.	Treated for fever most of the time.	..
The anæsthesia got gradually better, but was not cured.	Had gonorrhœa about a year after the appearance of the disease, followed by an exacerbation of the disease.	20 miles.	Balsam diptero-carpi, according to Dr. Dougall's system.	..
Not much benefit from treatment.	No hereditary or venereal taint.	5 miles.	Do. ..	..
Was too short a time under treatment to benefit by it.	No hereditary taint. Lived with a leprous woman for four months, and the disease made its appearance two months subsequently.	5 miles.	Do. ..	..
Sensation restored to hands and legs, not to feet. Ulcer on foot cured. Hypertrophy of skin much diminished.	Had gonorrhœa twenty years before the disease appeared. No hereditary taint.	26 miles.	Do. ..	..
Sensation restored to arms and legs, not to hands or feet. Tubercle diminished.	No hereditary or venereal taint.	Do. ..	Do. ..	..
Sensation was restored to left leg in twenty days. Sensation is now entirely restored to the anæsthetic parts. The tubercles have much diminished.	Do. ..	25 miles.	Do. ..	..

Name.	Age in Years.	Occupation.	Date of Admission.	Length of Time under Treatment.	Condition on Admission.
Ragooven ..	20	Musician	17th August.	Onemonthand seventeen days. Still under treatment.	Has had leprosy for two years. Anæsthesia of lower part of both legs and feet and of hands. Psoriasis on hands. Tubercles on chest.
O. Chinnian ..	35	Cultivator.	Do. ..	One month. Still under treatment.	Has had leprosy for four years. No anæsthesia, but the body is more or less covered with psoriasis. Has tubercles about the face. Nose fallen in.
T. Chellen ..	55	Cooly.	18th August.	Thirteen days.	Has had leprosy for four years. Anæsthesia of both upper extremities and of both legs. Shortening of some fingers and toes.
Ram Puree ..	50	Bengal pilgrim.	19th August.	Twenty-four days.	Has had leprosy for fifteen years. Has complete anæsthesia of the whole body, including the tongue; not a portion of the body has any sense of touch. Has no taste. All the fingers of left hand are gone, not even a vestige of the thumb. All the fingers of right hand are gone, but there is a vestige of thumb. Shortening of some of the toes.
Vurden ..	12	..	21st August.	Two days ..	No anæsthesia. Face tubercular.
Senganee ..	40	Cultivator.	22nd August.	Eight days ..	Has had leprosy for ten years. Has anæsthesia of upper and lower extremities, back, face, and abdomen. Tubercles all over the body. Hypertrophy of skin about the ankles and feet.
Narrainsamy ..	55	Do.	Do. ..	Onemonthand twenty days. Still under treatment.	Had leprosy for five years. Anæsthesia of hands and feet. Face covered with large tubercles. Breasts enlarged. Hypertrophy of skin of wrists and ankles. Ulceration and shortening of some toes.
Venkatasamy..	30	Do.	29th August.	Twenty-two days.	Has had leprosy for two years. Anæsthesia of both legs and feet. Shortening of great toe of left foot. Nipples enlarged. Body covered with itch and psoriasis.
Tholassee ..	31	Do.	Do. ..	One month and seven days.	Has had leprosy for two years. Anæsthesia in patches about the upper and lower extremities. Some tubercles on face.
Subbroyen ..	22	Do.	30th August.	One month and ten days.	Has had leprosy for five years. Has anæsthesia of the whole body with the exception of a few patches about the abdomen and back. Face tubercular. Nipples hypertrophied. Psoriasis on thighs. Hypertrophy of skin of legs.
Arjoonen ..	14	..	Do. ..	Fifteen days..	Had leprosy for two years. Has anæsthesia in light-colored patches on left shoulder, nose, face, and right and left legs.

Amount of Benefit conferred by Treatment on Discharge.	Disease how contracted. Hereditary or otherwise.	Distance from which Patient came for Treatment.	Treatment.	Remarks.
Psoriasis cured. Sensation partially restored to left hand. Not much marked benefit as yet.	No hereditary or venereal taint.	5 miles ..	Balsam diptero-carpi, according to Dr. Dougall's system.	Put in his time in hospital in two periods.
Psoriasis getting better. Health improving.	Do. ..	Do. ..	Do. ..	Do.
Was too short a time under treatment to benefit by it.	Hereditary. Father's sister had the disease.	16 miles..	Do. ..	..
Sensation restored to the trunk of the body in twelve days. Partial sensation restored to face. Extremities remain anæsthetic. Was too short a time under treatment to get further benefit.	No hereditary or venereal taint.	..	Do. ..	Left the hospital with some other pilgrims.
Was too short a time to benefit by treatment.	Do. ..	..	Do. ..	..
Was too short a time in hospital to benefit by treatment.	Brother had the disease.	24 miles..	Do. ..	..
Sensation almost entirely restored to hands. Feet continue anæsthetic. Tubercles slightly diminished. Says he feels much better.	No hereditary or venereal taint.	7 miles ..	Do. ..	..
Sensation partially restored to left leg. Psoriasis nearly cured.	Do. ..	40 miles..	Do. ..	..
Health much improved, but the anæsthesia was not greatly benefited.	Do. ..	10 miles..	Do. ..	..
Sensation restored to face except cheeks; also to chest, back and arms in ten days. When he left hospital sensation was restored partially to the lower extremities. Greatly benefited by treatment. Psoriasis cured.	Do. ..	20 miles..	Do. ..	..
No benefit. Was too short a time under treatment.	Hereditary ..	Do. ..	Do. ..	..

Name.	Age in Years.	Occupation.	Date of Admission.	Length of Time under Treatment.	Condition on Admission.
Ponnee ..	60	Cooly.	31st August.	Twenty days.	Had leprosy for three years. Anæsthesia of the whole body, including face and tongue. Not a part of the body has any sensation whatever. Contraction of little finger. Hypertrophy of skin of legs.
Chaninie ..	25	Cultivator.	5th Sept. . .	One month and eleven days. Still under treatment.	Has had leprosy for six years. Anæsthesia of face, upper extremities, legs, and left thigh. Shortening and contraction of some fingers and toes. Has tubercles in circular patches over front of chest, thighs, and back. Face covered with tubercles. Nipples much enlarged.
Narrainen ..	25	Do.	6th Sept. . .	Five weeks . .	Had leprosy for two years. Anæsthesia of right forearm and both lower extremities. Shortening of little finger. Two ulcers on sole of left foot.
Nally ..	55	Do.	12th Sept. . .	One month and four days. Still under treatment.	Had leprosy for twenty years. Anæsthesia of both forearms, less in the right and in both legs. Contraction and shortening of all the fingers of right hand. Shortening of left thumb and ulcer on palm of hand. Hypertrophy of skin of ankles. Ulcers on feet.
P. Chinniah ..	79	Do.	13th Sept. . .	Nineteen days.	This man who died in hospital had diarrhoea shortly after admission, and maggots filled a large ulcer on foot. His case would throw no light on the gurjun oil treatment; it is not therefore considered worth while to insert it.
Perumal Naiken.	49	Do.	17th Sept. . .	One month. Still under treatment.	Had leprosy for three years. Anæsthesia of both forearms and lower part of both thighs and legs. Face tubercular. Shortening of fingers and toes. Hypertrophy of skin of left foot.
Solay ..	50	Watchman.	19th Sept. . .	Fourteen days.	Had leprosy for five months. Anæsthesia in patches all over the body.
Mootoosawmi .	47	Bandy driver.	22nd Sept. . .	Twenty-eight days. Still under treatment.	Had leprosy for fifteen months. Anæsthesia of both upper and lower extremities. Shortening of several toes. Psoriasis on legs and arms.
Kalan ..	23	Cooly. . .	24th Sept. . .	Twenty-five days. Still under treatment.	Had leprosy for two years. Has anæsthesia in patches on both forearms. Complete anæsthesia in the legs. Shortening and dislocation of some toes. Has light-colored spots about the body, but they are not anæsthetic. Face slightly tubercular.

Amount of Benefit conferred by Treatment on Discharge.	Disease how contracted. Hereditary or otherwise.	Distance from which Patient came for Treatment.	Treatment.	Remarks.
No benefit	No hereditary or venereal taint.	30 miles..	Balsam Dip-terocarpi, according to Dr. Dougall's system.	
Sensation restored to face and arms, not forearms. Tubercles the same as on admission. Not much marked benefit.	Father had the disease.	3 miles.	Do.	..
Derived considerable benefit from treatment. There was still some slight remaining anæsthesia.	He states that he lived with what he calls a leprous woman for six months, and the anæsthesia first came on a year after the connection ceased.	..	Do.	..
The anæsthesia has not diminished. Not much benefit at present.	No hereditary or venereal taint.	18 miles.	Do.	..
..
Sensation restored to upper part of forearms. No difference in lower extremities.	Had gonorrhœa four years before the appearance of the disease.	9 miles.	Do.	..
Anæsthesia slightly diminished.	No hereditary or venereal taint.	17 miles.	Do.	..
Sensation restored in twenty days to the arms. Still has anæsthesia of forearms and lower extremities. Psoriasis cured.	No hereditary or venereal taint.	5 miles.	Do.	..
Feels some benefit, but it is not very apparent at present.	Hereditary. Father had it.	..	..	..

(Signed) E. A. TRIMNELL,
Zillah Surgeon, Chingamenut

GUNTOOR.

Report on the Treatment of Leprosy with Gurjun Ointment in the Civil Dispensary, Guntoor.

Thirty-eight (six in-patients and thirty-two out-patients) lepers have, since October last year, been treated with the gurjun ointment prepared in the manner described by Dr. Dougall.

2. It has in my experience effected a vast deal of good in the general condition and health of these sufferers, whose state prior to the adoption of this treatment was wretched and miserable.

3. It has not, however, as yet effected a thorough cure: all the cases have, to a marked extent, been benefited by the use of the ointment given internally and applied externally.

4. The progress of the disease has in my opinion been stayed. This is also the expressed opinion of all those who have used the remedy.

5. Soon after the use of the gurjun treatment patients find that the condition of their skin begins to improve. The patches of psoriasis which give rise to so much irritation and annoyance gradually disappear, healthy skin action soon sets in, and in time the general appearance of the skin is perfectly healthy.

6. Itchiness, which is present more or less in all the lepratic cases which have come under my observation, speedily subsides, and with it the results of the scratching which is resorted to relieve it.

7. Patients have expressed themselves as pleased with the remedy, simply because of the great relief from the distressing itchiness which follows the use of this ointment.

8. Prior to its use they were miserable and wretched, praying for a quick ending of all their suffering. Now it is their wish to live long and happily.

9. Formerly they were detested and abhorred by their friends and relatives. Now they are permitted to freely associate with them.

10. In some cases, especially in those affected with anæsthetic leprosy, where no contraction or distortions of the fingers and toes have taken place, it is difficult, after the prolonged (say six months or more) use of the ointment to say, that such an one is a leper; for, judging simply by the appearance of the skin, without making any examination on the pain and touch sensations of the case, no information will be obtained, whereas on admission a mere glance was sufficient to tell one that the patient was a leper.

11. Before the use of the ointment, besides the repulsive appearance which the patient presented, there was a foul and unhealthy sickening odour about them, whereas after it had been rubbed in for some time there was nothing disagreeable about them.

12. With restoration of healthy skin action sleep is obtained at nights, appetite is improved, the bowels become regular, the urine is free, breathing is easy, the hands and feet, fingers and toes, which were stiff and contracted, become supple and relaxed, tubercles are gradually absorbed, anæsthesia generally, but of the trunk and upper part of the extremities particularly disappears, and ulcers heal up.

13. Such, then, are the benefits which these unfortunate wretches derive from the remedy under report.

14. As yet I have not seen a case which I can declare has been cured by the gurjun oil.

15. Of all the methods I have seen adopted, this has decidedly given the most favorable results; and it is confidently hoped that further experience will enable one to positively assert that it is the specific for this loathsome disease.

16. As some of the patients have shown themselves to be so lazy and apathetic that they do not carry out the instructions given to them, I have ordered that all must use the ointment in the hospital compound from 7 to 10 A.M. and from 3 to 5 P.M. daily in the presence of the Dispensary Compounder.

GUNTOOR,
19th December 1875.

(Signed) S. M. TYRRELL, Surgeon,
Zillah Surgeon.

BERHAMPORE.

From Surgeon-Major H. J. BEACH, Acting Zillah Surgeon, Berhampore, to the Deputy Surgeon-General, Indian Medical Department, Presidency and Northern Division, dated Berhampore, 20th December 1875, No. 88.

With reference to Circular Memorandum, No. 5,656, 2nd September 1874, from the Secretary, Surgeon-General, Indian Medical Department, Fort St. George, I have the honor to report, for your information, that during the past year twenty-two cases of leprosy were treated at this dispensary with "gurjun oil;" of this number three are reported as cured, nineteen relieved, and absented; supplies of the oil were also sent to different parts of the district. Much difficulty was experienced in getting the patients to submit to a regular course of treatment; many of them are professional mendicants; their disease calls forth the pity and charity of the public, and if they allow themselves to be cured would be deprived of an easy and certain livelihood. Two prisoners in the District Jail were also treated with benefit, but both were discharged by expiry of sentence before a cure was effected. In some few cases the internal administration of the remedy caused so much irritation of the stomach as to necessitate its discontinuance. I believe it to be a valuable remedial agent, but not in all cases a specific.

2. I would take this opportunity of remarking that when my supply of "store" gurjun oil has been expended, I have substituted the gurjun or "wood oil" of the bazaar (which has its economic use as a paint oil or varnish), and it appears to me identical as a medicine.

No. 11,726.

Forwarded for submission to the Surgeon-General.

MADRAS,
29th December 1875.

(Signed) J. M. JOSEPH, M.D., Surgn.-Major,
For Dy. Surgn.-Genl., I. M. S.,
Presdy. & N. Division.

BIMLIPATAM CIVIL DISPENSARY.

CONCISE REPORT ON THE USE OF GURJUN OIL IN LEPROSY.

On the 1st April last there were twenty-five cases of leprosy under treatment, five of whom were dieted in hospital and the remaining twenty were out-door patients. One out-door case was admitted in June 1875.

The majority of these were mendicants in a state of hopeless destitution and misery. I recommended to the Vice-President of the Municipality to have a temporary shed erected in the hospital compound to house these people during their stay under trials, and for the better carrying out of Dr. Dougall's instruction. From want of adequate funds the recommendation was not attended to, and the five in-door patients were also taken off the books to make room for other patients.

Annexed is an abstract of the number of cases treated for the past eight months with their results. It is impossible, with the means I have had, and with the class of patients I had to deal with, to say that the gurjun oil remedy was given a fair trial. The relief was slow, and from want of sufficient means most of the patients were discontented with the length of time they had to remain. Several left before there was any change. On the whole the greater number of these people improved in their general health, ulcers that were open for years past healed kindly. It is yet to be seen whether the improvement in the three following cases is permanent or otherwise.

Pydiah, æt. 40, laborer, residence Bimlipatam.

1st April 1875.—A short, well-built man. Is married, and has four children, all of whom are in good health. His parents are said to be perfectly clean and free from the disease. This man and his younger brother are the only two suffering from leprosy in his family. The disease first made its appearance three years ago on his hands, which gradually spread throughout his whole body. Denies ever having had syphilis.

State on Admission.—Is frog faced; skin shining, especially over arms and hands. Ears swollen and lobulated. Ring and little finger of right hand contracted and partially ulcerated. Both feet swollen with a tendency to crack. Has several white patches over his body. No feeling in both arms and legs. Voice unaffected.

Gurjun oil as directed by Dr. Dougall.

11th December 1875.—Swelling of face and ears almost removed. General health altogether better. Appetite much improved, and sleeps better at nights. No tendency to ulceration in any part of the body. Slight return of feeling in arms and legs.

Nursimaloo, æt. 35, unemployed, residence Bimlipatam.

Is a married man and has two children, both perfectly clean. No history of the disease being hereditary. This man and his elder brother are the only two afflicted with this complaint in his family. Had gonorrhœa several years back. The disease first made its appearance five years ago

in his right foot as an ulcer, which never healed. Face and ears unaffected. Fingers of both hands contracted and covered with ulcers. Right foot greatly swollen with a large leprotic ulcer on the sole of the foot. Has no feeling in both hands and feet.

R Gurjun oil as advised by Dr. Dougall.

11th December 1875.—Ulcer in sole of right foot quite healed. Swelling almost gone. General health much improved. Walks with greater ease. He is now able to do a little work. Appetite improved. No advancement of the disease. Other parts of the body unaffected.

Appiah, æt. 41, mendicant, residence Bimlipatam.

1st April 1875.—A miserable-looking subject. Both hands and feet in a mass of ulceration. Fingers and toes contracted. Face and ears unaffected. Had syphilis six years ago. No trace of the disease being hereditary.

R Gurjun oil treatment.

11th December 1875.—Ulcers quite healed. Much improved in general health. No further advancement of the disease. He is able to walk longer distances now. This man made rapid improvement while under hospital dieting.

No. 11,564.

These cases, if all of true leprosy, testify to the action of the balsam in improving the condition of lepers.

(Signed) W. J. VANSOMEREN, M.D.,
Dy. Surgn-Genl., I.M.D., Presdy. and N. Divisions.

Abstract Return of Leprous Cases treated from 1st April to 30th November 1875.

Months.	In-patients.						Out-patients.					Remarks.
	Remained.	Admitted.	Total treated.	Discharged.			Admitted.	Discharged.				
				Cured.	Relieved.	No better.		Total.	Cured.	Relieved.	No better.		Absented.	Total.
1875.												
April	5	5	5	5	5	5	20	1	1	1	1	The five in-patients were from neighboring villages, who discontinued attending, as they had no means to support themselves while under treatment.
May .. ..	..	..	..	..	..	..	..	..	..	..	..
June .. ..	..	..	..	..	..	..	..	..	..	..	..
July .. ..	..	..	..	..	..	..	..	..	..	..	..
August.. ..	..	..	..	..	..	..	..	..	..	..	..
September	5	5	The result of the out-patients may be favorably considered : 9 were relieved, 6 absented, and 6 were discharged no better from irregular attendance.
October.. ..	..	..	..	..	..	..	..	5	..	..	5
November ..	..	..	..	..	..	..	..	4	6	..	10
Total ..	5	5	5	5	5	5	21	9	6	6	21	

BIMLIPATAM,
11th December 1875.

(Signed) JOHN XAVIER,
Asst. Apoth. in Medical charge of Station.
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CUTTACK.

From Surgeon-Major J. S. RIDINGS, M.D., 41st Regiment M.N.I., to the Deputy Surgeon-General, Indian Medical Department, Presidency and Northern Districts, dated Cuttack, 22nd December 1875, No. 94.

I have the honor, in accordance with Circular No. 5,656, of the 2nd September 1874, to report upon the use of gurjun oil in this Regimental Hospital.

But one case of leprosy has come under treatment, and that merely of the mild anæsthetic form.

Private Shaik Abdool Cawder, No. 2,111, aged 34 years, was admitted into hospital on the 23rd March 1875, suffering from general debility and cough, dry rough creaking sounds audible at base of both lungs, body most emaciated and covered by large light-coloured spots or patches, oval or circular from 1 to 3 inches in diameter, those on the arms and legs being totally devoid of sensibility, while those on the trunk retained some sensation. He states that these patches have been appearing for many years past, and that none of his relatives suffer from leprosy.

This man had been under treatment for a deep indolent ulcer of the ball of great toe from the 26th January to the 6th February previous, when he was discharged cured ; but it has now returned, and presents an appearance as if it had been punched out, deep, circular, devoid of granulations, surrounded with indurated thickened integument.

From the 23rd March to the 3rd April he was treated solely for the bronchitic affection with stimulant expectorants, and carbolic acid dressing applied to the ulcer, when, being quite recovered from the former, while no improvement had taken place as regards the latter, gurjun oil treatment was commenced both internally and externally.

Dose 3 ss morning and evening. On the 25th April, after twenty-two days' treatment with the oil, the very numerous large patches had become less distinct, and sensibility had decidedly returned, the prick of a pen being felt everywhere, equally on the patches as on the intervening skin, while the general health also had much improved ; but the ulcer on ball of great toe was in precisely the same state as on admission, no sign of filling up or of healthy action ; finely-sifted dry earth was, therefore, substituted for the gurjun ointment dressing, and with such success that the man was discharged "cured" from hospital on the 8th June.

An extern patient, a regimental follower, who suffered from tubercular leprosy in a very severe form, was treated with gurjun oil and ointment by Third-class Hospital Assistant Runganaikloo, No. 928, with decided success ; but the boy's attendance at hospital was so irregular that I only saw him three or four times, and cannot therefore give particulars of his case, notes of which, however, were kept by the Hospital Assistant, but were unfortunately taken away with him when he was removed from the regiment.

I am about to write to him for these, and will forward them when received.

No. 15.

Forwarded for submission to the Surgeon-General.

MADRAS, (Signed) J. M. JOSEPH, M.D., Surgeon-Major,
 4th January 1876. For Deputy Surgn-Genl., I.M.D., Presy. & N. Districts.

From Surgeon-Major J. S. RIDINGS, M.D., 41st Regiment M.N.I., to the Deputy Surgeon-General, Indian Medical Department, Presidency and Northern Districts, dated Cuttack, 30th December 1875, No. 95.

I have the honor to forward, in accordance with Circular No. 5,656, the following copy of a case of leprosy of a follower of this regiment treated with gurgun oil by Third-class Hospital Assistant Runganaikloo, No. 928.

The boy's attendance at hospital was extremely irregular, so that he came under my observation but three or four times.

TUBERCULAR LEPROSY.

Amoorthanadun, male, æt. 19 years. 4th November 1874.—Came under treatment with lobes of both ears enlarged and covered with small tubercles, general psoriasis, great itchiness, restless at night, lymphatic glands of both groins much swollen and painful, general anæsthesia, a small ulcer the size of an eight-anna piece on the sole of the left foot, disease of four years' standing.

Gurjun oil in full doses and gurjun ointment.

4th December.—Tubercles of both ears have entirely disappeared ; sleeps well. The first four days the bowels loose, from three to four stools daily ; urine also passed in large quantity ; anæsthesia entirely gone except from face.

1st January 1875.—Swelling in the groins much less ; ulcer on the left foot entirely healed ; partial numbness of the face.

6th February.—Still numbness of the face.

1st March.—Improving, from which date the patient was absent.

19th May.—Again presented himself ; there was slight numbness over the face ; skin of the lower extremities was rough from knees downwards, heels fearfully cracked, a small circular ulcer under the great toe of left foot, bowels natural.

4th June.—Improving, when I was removed from regiment.

(Signed) T. RUNGANAIKLOO,
 Third-class Hospital Assistant.
 RUSSELCONDAH,
 26th December 1875.

No. 343.

Forwarded for submission to the Surgeon-General.

MADRAS, (Signed) W. J. VANSOMEREN, M.D.,
 11th January 1876. Dy. Surgn-Genl., I.M.D., Presy. and N. Districts.

SECUNDERABAD.

From Deputy Surgeon-General W. H. S. BURN, Indian Medical Department, Hyderabad Subsidiary Force, to the Secretary to Surgeon-General, Indian Medical Department, dated Secunderbad, 7th October 1875, No. 1,012.

I have the honor, in forwarding the accompanying reports on the treatment of leprosy by gurjun oil received from the medical officers of the Hyderabad Subsidiary Force, to state that the officers in charge of regimental and other hospitals, as per margin, state that no cases have fallen under their care, while in the 3rd Regiment Light Infantry eight cases, in the 29th Regiment Native Infantry two cases, in the 40th Regiment Native Infantry one, and in the Sappers and Miners one case have come under treatment, generally with at least temporary benefit; thus in the 3rd Light Infantry six have improved, one continues stationary, and one with whom the oil appears to have disagreed has deteriorated; in the 29th Native Infantry in one case there was no improvement, in the other the patient did not tolerate the oil; in the 40th Native Infantry and Sappers and Miners the single case in each corps under treatment have improved.

2. It will be observed that the above results in no way dispose of the question at issue, that is, as regards the permanent good effects of the oil; nor does it appear very likely, as has been already said, that any thing of value under this head can result from any general inquiry, and that Leper Hospitals or Asylums under proper direction and supervision offer the best prospect of carefully studying and testing the effects of treatment, and solving the important question now less systematically sought for in the present and similar inquiries.

Disease leprosy, name IYASAWMY, age 26 years, service $7\frac{1}{2}$ years, Regimental No. 23, rank Private, K Company, Sappers and Miners.

5th February 1875.—This man was admitted on the 27th January 1875 for ague; it was only observed yesterday that the skin over the dorsum of his hands and his face had a peculiar glistening appearance; he apparently knew that he was suffering from this affection, as he particularly took care to cover as much of his forehead as possible, and his ears he completely kept concealed. On the state of his condition being questioned he pretended as though he were not aware of it.

The skin over the brows, the alæ of the nose, and particularly the lobes of the ears, have a shining, tumid and tuberculated appearance. Denies of ever having had syphilis. States that his parents were free from any skin disease. His father served in the Sappers for thirty-two years. On close inquiry he states that he first noticed its appearance about two months ago on the lobe of the right ear, and since it has gradually spread, producing no discomfort whatever. The parts nodulated are somewhat diminished in sensation, but not to any great extent so as to be readily perceptible. Now as he

is free from fever, a purgative is administered preparatory to the use of the gurjun oil treatment.

R Gurjun oil.

Aq. calcis ā ā ʒ ss. bis die.

R Gurjun oil ʒ i.

Aq. calcis ʒ x for external use after the parts being well cleansed with sand and water.

6th February 1875.—Ague came on again yesterday at 2 P.M., in consequence of which the gurjun oil treatment had to be suspended and put upon a course of antiperiodics.

Omit gurjun oil treatment.

R Quinæ sulph. gr. v ter die.

8th February 1875.—No fever since last report. The gurjun oil treatment has been resumed.

Omit quinine.

Continue gurjun oil treatment as before.

20th February 1875.—Seems somewhat to improve under the treatment. The tubercles do not seem so prominent as before. The mixture agrees well with the patient.

Continue.

10th March 1875.—Has improved decidedly. The tubercles have almost disappeared over the eyebrow. Has also improved in general health.

Continue.

20th March 1875.—The tubercles about the ears have subsided somewhat since last report, and have been stationary ever since; the skin covering them having a smooth natural appearance, his general health improving.

Continue.

1st April 1875.—Doing well. No further change in the tubercles since last described. Is anxious to return to duty. Discharged.

Remarks.—The man has been performing his duty efficiently since his discharge from hospital. Under the use of the gurjun oil an impression has been made on the disease, its further progress being arrested, and what remain are small dermic thickenings at the site of the tubercles, on the lobes of the ears, which have no sensibility and produce no discomfort.

SECUNDERABAD,
5th October 1875.

(Signed) G. F. TRIMNELL, Surgeon-Major,
Cantonment Hospital.

*Eight Cases of Leprosy treated with Gurjun Oil in H. M.'s 3rd Regiment
L.I. at Secunderabad.*

CASE I.

Naigue KISTNIAH, age 34, service 16, General No. 436, admitted 5th July 1874.

16th July 1874.—A well-developed and healthy-looking man. Was admitted for ague on 5th instant, and the disease was afterwards changed to leprosy.

His parents died during his childhood; his mother had dropsy before her death; he does not know what his father died of. He is an only child. He enjoyed good health since he entered the service. Has had occasional attacks of ague. No history of syphilis. Hearing good with both ears.

About a month ago noticed a pale reddish patch of skin on back of right forearm, just below the elbow. It is two or three inches in diameter, with a very irregular margin. There is complete anæsthesia of the skin in that place. He does not complain of pain. There is no appreciable elevation or infiltration of this patch. He has lately noticed numbness in the sole of left foot. It is covered with small patches of dark pigmentation in the skin. But for the color there appears to be no difference between them and the sound skin. Right foot not affected.

He says he is in his usual good health, except that he tosses from side to side at night, and never sleeps long on one side.

Is married. Had four children, two of whom are dead (both died young) two living children are healthy. The younger is going on five years of age.

23rd July 1874.—

Gurjun oil.

Lime water one measure.

M.

3 ss. ter die.

R Gurjun oil one measure.

Lime water three measures.

M.

Ft. unguentum.

To be rubbed over all the spots of eruption after the daily warm bath. Country soap to be daily used with the bath.

10th October 1874.—No change of note.

21st November 1874.—Has a circle of pale-colored eruption round the prepuce, where he complains of burning pain. Also presents a number of small whitish spots on his left leg; they are about the size of small-pox marks. Complains of loss of taste. Bluish line on gum behind inferior incisors.

Takes 3 ii. ter die of gurjun emulsion for some time past.

Was improved in March 187, when he was discharged from hospital to go on furlough.

He is now doing duty.

CASE II.

Private RUNGASAWMY, age 36, service 17, General No. 279, admitted 22nd July 1874.

25th July 1874.—A native of Madura, shepherd caste, weakly man. Has been in hospital for bronchitis since 13th of May. He lives in a wretched way. Says he eats meat once in four days, and on other days eats vegetables, and occasionally dhal with his rice.

More than six months ago he noticed an eruption of palish patches on inside of left foot and ankle. Numbness came on afterwards in those places. The patches are now level with the surrounding surface, and covered with a glistening, cracked epidermis, somewhat like the appearance of a dried blister. He has also similar patches of considerable extent over outer and posterior aspect of both hip-joints, and on the back just above the buttocks, and extending down on the buttocks and in the fissure between them. The epidermis has the same shining, wrinkled, dried appearance over all, and they are all completely anæsthetic. The older parts are almost, if not quite, as dark in color as the sound skin. The more recent portions, especially near the margins, are very slightly elevated, and of a pale reddish hue.

Has two healthy children alive. The younger is five years old. Wife healthy; has not been pregnant since birth of younger child. Knows nothing about his parents; they died when he was a child. None of his relations had any thing of the kind. Has marks of buboes in both groins. He asserts that they were constitutional, but they were very probably specific; there are some faint doubtful marks on the penis. Eight or nine years ago he had a small ulcer on sole of left foot, for which he remained *six months* in hospital.

Since arrival at Secunderabad (in 1871) has suffered from ague to some extent (six admissions) and from pleurisy (one admission).

Gurjun oil treatment, same as Naigue Kistniab.

2nd September 1874.—Complains of loss of taste. Gurjun oil emulsion 3 ii.

10th October 1874.—Looseness of teeth; no bleeding from gums. Otherwise no change.

All the lepers complain more or less of some burning at anus when they go to stool, probably due to gurjun oil.

21st November 1874.—Complains of burning sensation in chest; also in tongue, which is fissured. Argenti nitratis solut. to be applied to it.

31st March 1875.—Gurjun oil omitted; out of stock.

23rd May 1875.—Gurjun oil resumed, as new supply has arrived.

28th September 1875.—Eruption has disappeared from lower part of back, but there are still patches on outer aspect of hips and inner side of both ankles, extending up leg on left side. Numbness in and for some distance around all patches. Health not good. Gets prolapsus ani if he eats highly-spiced food.

22nd October 1875.—All eruption has now disappeared except small patches on outer aspect of hips, inner side of left ankle, and back of right ankle.

CASE III.

Private SHAIK CASSIM, age 35, service 16, General No. 429, admitted 18th July 1874.

Tall, active-looking man, of light brown color. Has anæsthetic spots of small size and pale color on inner sides of both ankles, and scattered over lower half of back, and on back of left elbow. There is also one on left side of forehead, which is considerably elevated above the surrounding surface. All the spots are partly anæsthetic. Nearly two months since he first noticed the spots. That on inside of right ankle first attracted his attention.

Eats dhal and mutton every day with rice. Also wheaten bread daily. Native of Lucknow, seven years married. One child alive, healthy, six months old. Wife healthy. Not pregnant before. Knows nothing of his father and mother.

No signs of syphilis.

Sometimes he says he has numbness and throbbing in his limbs (a common complaint with natives). There is no pain in the patches of eruption, only numbness.

Has suffered five or six times from ague since his arrival at Secunderabad in 1871, but there is scarcely a man in the regiment who has not had it as frequently.

Gurjun oil.

2nd September 1874.—No change of note. Spot on forehead is considerably raised, like a wheal, and of a markedly red tinge.

10th October 1874.—The tubercular spot on his forehead seems slightly reduced in size. He presents a fresh spot, about size of 4-Anna piece, on upper lip.

2nd November 1874.—Complains of soreness of gum behind upper incisors. There is a little swelling of it. Otherwise no change. All the cases are taking 3 ii. of the mixture *ter die*.

19th November 1874.—Discharged from hospital, as he was placed under arrest for ganja-smoking (Court-Martial).

1st June 1875.—Was re-admitted on 8th March (for leprosy) and discharged on 26th of April. Was again admitted for same disease on 27th May, and is under gurjun oil treatment. The spot on the forehead has become flattened and of a markedly red color, with irregular margin.

30th June 1875.—Patch on forehead diminishing. He was absent from hospital without permission on the 26th instant, and was ordered seven days' confinement in solitary cell. He is accordingly discharged from hospital, but he is to continue gurjun oil during his punishment.

23th September 1875.—Spot on forehead has partly disappeared, and is still slightly anæsthetic. There are small patches of pale eruption on inner side of both ankles and front of left leg. These are slightly numb. Complains of pain in right heel, in cicatrix where an abscess was opened some years ago. Upon the sole of the same foot near the toes is a small scar-like pit, where he also complains of pain. He says this came on spontaneously.

22nd October 1875.—No change.

CASE IV.

Havildar SYED HOOSSAIN, age 42, service 23, General No. 161, admitted 27th July 1874.

3rd August 1874.—Fair, stout, healthy-looking man. Native of Vellore. Occasionally suffers from ague (for which he was lately admitted). Lives well, eats dhal, wheaten bread, meat, and rice daily.

Four or five months ago he noticed slight pain on inner side of left foot, extending to the ankle. There was a small discolored patch, which increased. It now covers all the inner side of ankle, and is irregular in outline. It is

slightly paler than the surrounding skin, with a faint reddish hue, and slightly wrinkled, dry-looking scarf-skin. It is not elevated, except at the lower part, where there are a few soft, faintly-marked elevations. This patch is anæsthetic. No eruption on any other part of body.

Both father and mother appear to have died from phthisis. Had two children (which died in infancy) by his first wife; none by his second, one and-a-half years married to her). The two infants that died were small and thin. He did not see any eruption on them. No history of syphilis. His father had a similar eruption, with loss of sensation, on calf of leg.

Gurjun oil treatment from 27th July 1874.

2nd September 1874.—No change.

10th October 1874.—No change.

1st June 1875.—Was discharged on 28th April and re-admitted on 22nd May. In much the same state as previously described. Gurjun oil treatment.

24th August 1875.—Has had obstruction of left nasal duct for nearly two months. There is no suppuration, but the lachrymal sac becomes distended by the tears, which can be pressed back through the canaliculi. Mercuric iodide ointment was first used, but it blistered. Dilute mercurial ointment is now rubbed along the left side of nose, and snuff is ordered to be taken on that side. Leprous eruption scarcely visible now.

Transferred to Eye Infirmary 17th September 1875.

CASE V.

Private RAMASAWMY, age 34, service 16, General No. 459, admitted 30th July 1874.

4th August 1874.—“Vallalay” caste, native of Trichinopoly. A broad-shouldered, muscular, and healthy-looking man. Color brown. About ten months ago noticed a small elevated patch of red color in right groin. It was not painful, but felt itchy, and was anæsthetic. Has now numerous large irregular patches covering the nates and hips. They are deeply pigmented, and the skin presents the usual wrinkled and dried appearance. There is anæsthesia in left heel and inner side of left sole, without eruption.

About five months ago eruption appeared on his back, between the shoulders. It extends up to nape of neck, and partly over the scapulæ. The older parts are very deeply pigmented, and covered with dry, shining, wrinkled cuticle. At the margins of some are small papular elevations of a pale color. The recent patches are much paler than the rest of the skin, with a reddish hue. They are not sensibly elevated (except an occasional papula at the margins), and there is no apparent alteration of structure in these parts. Small patches of dark pigment are deposited here and there over them.

Gurjun oil treatment from 30th July 1874.

He states that his father died of “old age” eleven years ago. *He had a similar eruption* on his back and on his feet, accompanied with loss of sensation in those parts. Mother died at fifty years of age of “fever.” She had no eruption. He had two sisters and three brothers. His eldest brother is now dead: died of “fever and convulsions.” He had no eruption. *He*

himself is the youngest of the family. None of the other brothers or sisters have any eruption.

Married. Has two healthy children, seven and five years of age. His wife is now pregnant (six months). His prepuce is considerably enlarged and pendant. The upper part of glans has a pale reddish irregular patch, partly covered with white scaly epidermis. The prepuce is here adherent to, and incorporated with, the corona. A portion of this patch is anæsthetic. It is the site of an old sore which he had in 1869. The orifice of urethra is contracted and deformed, and is blocked with yellowish pus, though he asserts he has no discharge. He also says that he micturates freely and without pain. Is in his usual good health at present.

Eats mutton and dhal on alternate days, and occasionally fish, with his rice. Has three meals a day. Appears well nourished.

On reference to his medical history sheet, I find an admission (thirty-three days for "primary syphilis" in 1869, and, in the same year, one for "gonorrhœa," for which he remained ninety-seven days in hospital. Prepuce was slit up for phymosis. His other admissions are for ague (five) and for itch (one).

Gurjun oil treatment from 30th July 1874.

2nd September 1874.—Says the eruption on his buttocks is increasing.

10th October 1874.—No change of note, except looseness of teeth, particularly lower incisors, and a little bleeding from the gums. He is in very good condition to all appearance, and says he eats vegetables and mutton.

2nd November 1874.—No change. Gums sore.

21st November 1874.—Has a urinary fistula which, he says, appeared a few days ago. It is situate where the prepuce is adherent to the glans. The natural orifice admits only a small-sized probe with some difficulty. Most of the urine comes through the fistula, but a probe cannot be passed owing probably to its tortuosity. A probe was passed through the natural passage and ordered to be retained until he wants to micturate.

2nd February 1875.—Gurjun oil, which was omitted for short time, has been resumed for past week in doses of \mathfrak{z} ii. of emulsion thrice daily, and morning and evening in unctions of gurjun ointment have been ordered, as a sufficient supply of the oil has been obtained from Madras.

1st June 1875.—Gurjun oil was discontinued from 31st March to 22nd May. Eruption slightly less.

23rd June 1875.—With some difficulty a No. 1 gum elastic (silver catheters were useless) catheter was introduced some three or four inches into the urethra by the natural meatus, and he was directed to retain it for two hours. Several attempts made on previous occasions had proved unsuccessful. There is some superficial ulceration (more like excoriation) on upper surface of glans penis.

30th June 1875.—No. 1 catheter passed without much difficulty to neck of bladder, where it was arrested. Ordered to retain it for a couple of hours. Urine now comes in a stream by natural orifice and guttation by fistula.

16th July 1875.—No. 1 is passed about every other day, and retained for a couple of hours. No. 3 has not yet been introduced beyond half an inch.

22nd July 1875.—No. 3 catheter has been passed occasionally since last entry. Very little urine now comes by the fistula. No. 3 (without stilet) has been tied in for past twenty-four hours. It was re-introduced and ordered to be retained till evening. A hard swelling has appeared beneath the jaw; apparently abscess of the sublingual gland (left). To be painted daily with tr. iodi.

26th July 1875.—Abscess opened to-day, giving exit to thick yellow pus. Poultice.

4th August 1875.—Abscess nearly well. No. 3 catheter occasionally passed, but he cannot bear its retention for more than a few hours. No. 3 silver catheter was passed for first time yesterday. Urine comes in a stream through the natural meatus and in drops through the fistula.

13th September 1875.—He dislikes the catheter very much, but its use has lately been persisted in, and No. 6 bougie can now be passed. Gets ague occasionally in evening. Quinine.

23rd September 1875.—No. 9 bougie is now passed every morning. A little pus generally exudes from meatus, and a few drops of blood also, after the removal of bougie. Scarcely any urine now comes through fistula.

28th September 1875.—Eruption on buttocks and shoulder is gradually disappearing, and there is now very little anæsthesia. On buttocks eruption is dark colored and squamous; over left scapula it is pale, with patches of dark pigment.

19th October 1875.—Eruption nearly gone from shoulders, but slight thickening and anæsthesia of tip of nose has lately appeared. No. 9 or 10 bougie passed every other day. The eruption on buttocks has slightly diminished.

CASE VI.

Private THOPANAH, age 36, service 16 years, General No. 407, admitted September 1874.

2nd October 1874.—Has had three admissions for ulcer during the last few years, but was only a short time in hospital on each occasion. His medical history sheet also shows two admissions for psoriasis, which was supposed to be of a syphilitic nature on account of its unusual site—the palm of the left hand—and its great intractability. Surgeon-Major J. T. Williams saw the case, and was of the same opinion. The affection was principally visible in the natural furrows of the skin. It was benefited, but not altogether cured, by mercurial applications and potassium iodide. Some months ago he complained of dull pain in the left forearm, and now he says that for some ten months he is sensible of numbness in the arm when he carries any weight. He was admitted on 2nd September 1874 for “not yet diagnosed;” but leprosy being suspected, he was placed on gurjun oil treatment with the other lepers. Within the past ten days several spots of leprosy eruption have appeared on his cheeks, which places the matter beyond doubt. These spots are similar to those previously described in other cases, and consequently a detailed description would be superfluous.

Within the past week he has been complaining of pain in the incisor teeth especially the upper ones, and tumefaction of upper lip. He is “overshort,”

and incisors, especially the lower ones, are much worn. The teeth have become loose, and there is considerable tumefaction of the gum around the upper ones. A number of small pale patches (not elevated), slightly anæsthetic, have lately made their appearance over his loins and buttocks.

In 1869 he was given a year's sick leave for œdema and numbness of the extremities, from which he completely recovered.

No marks of syphilis. No history of scurvy. He is now becoming thin, and losing health. He says his father died of colic, and had no skin eruption. Mother alive and healthy. He has two brothers and three sisters, healthy and younger than him. Wife has nothing of the kind. Has two healthy children, younger going on two years of age. He is a native of Toomkoor in Mysore. Eats mutton and vegetable curry, and occasionally fish. Takes dhal on alternate days.

5th October 1874.—Swelling of gum around upper incisors has much increased, and these teeth are loose. A sanious discharge exudes round the left central incisor. The gum has been daily brushed with a 20 grain silver nitrate solution, but it seems to do no good. The pain does not seem to be severe. Dose of gurjun oil emulsion to be increased to oz. ii. ter die. Continue silver nitrate solution to gum.

10th October 1874.—Gum and teeth in same condition. Gum is anæsthetic.

2nd November 1874.—No change of note. Gum is a little ulcerated behind upper incisors, and discharge of sanious purulent matter has rather increased. Teeth still loose.

19th November 1874.—Has fresh spots on the prepuce and glans penis, and between the scrotum and thigh. They are pale in color and anæsthetic, except those on the prepuce, which are hyperæsthetic; he feels a burning pain in them when touched.

21st December 1874.—For past fortnight has been rubbing the gurjun ointment *all over* the body twice daily, as recommended by Dr. Dougall. The ulceration of palate has slightly improved.

The supply of oil being small, this case, as being the most advanced, and that of Havildar Syed Hoossain, as being the least so, were selected for a trial of the full treatment. The oil is now almost exhausted, and they are ordered to use cocoanut oil (externally) until the fresh quantity of gurjun oil arrives.

2nd February 1875.—For the past week gurjun oil has been resumed, and all the lepers take $\frac{3}{4}$ ii. of gurjun emulsion thrice daily internally, besides having morning and evening frictions of entire body with the ointment. This man appears to be improving in general health, and the discharge from the sinuses in upper gum and palate has lessened. The ulceration of hard palate is also less.

1st June 1875.—In much the same condition. The gurjun oil treatment was discontinued from the 31st March to 22nd May, as it was out of stock during that period. The discharge from sinus in mouth appears to have somewhat diminished.

28th September 1875.—Discharge from mouth slight. Only right central incisor is now loose. Eruption on hip almost quite gone. Eruption on face one and sensation normal. Slight eruption on palm of left hand still in

natural fissures of skin. Numbness of that hand when he carries anything heavy. Appetite and general health good, except that bowels are generally costive.

22nd October 1875.—Slight discharge from a swelling and numbness of gum continue. Eruption still faintly visible in front of left hip. Hand in same condition.

CASE VII.

Private NURSIMOOLOO, age 35, service 17, General No. 420, admitted 29th May 1875.

31st May 1875.—Native of a village near Bangalore. Father and mother died during his youth; he does not know of what diseases. Neither had any leprous eruption. Does not know that any of his relatives was ever so affected. He was an only son, and, according to his statement, his father must have been forty-five at the period of his birth; he says he died of "old age" at sixty.

A month ago he first noticed swelling of the second toe of right foot, with some pain, followed by numbness. About ten days afterwards he perceived patches of eruption on various other parts, in which there was numbness without pain. He had no fever, and was in his usual good health at the time. Since he came to Secunderabad has only been in hospital twice for ague and once for a serpiginous ulcer on inner aspect of left arm. He is a healthy-looking and fairly-nourished man. He says that latterly his appetite has somewhat deteriorated. The second toe of his right foot is swollen and anæsthetic. There are numb patches of thickened integument, usually of pale color, on dorsum of same foot; it is also beginning on other foot. There are two well-marked, reddish, raised patches of eruption, about one and a half inches in diameter, upon his right arm; one over deltoid; one lower down. They are both devoid of sensation. There are also extensive patches of a similar character on right buttock and back of right thigh, and one on centre of palm of left hand. The alæ and tip of his nose are markedly thickened and numb.

No history of syphilis.

Ordered gurjun oil treatment.

He is married; had five children, one of whom died in infancy. The eldest of the four others is ricketty, others healthy. Youngest is one year old.

23rd June 1875.—Nose has thickened still more, and there are a couple of squamous patches near its tip. Patches on body have become more scaly.

19th July 1875.—Patches of eruption have increased in number and size all over body. The one on inner and posterior part of right thigh is nearly as large as half a sheet of foolscap. They have all become of a well-marked red color, and several are slightly ulcerated. They are also more elevated than formerly. Toes of right foot are thickened, and also left ear. No appetite. Complaints of burning in sole of foot. Sensation of formication on nose.

28th September 1875.—Disease is spreading. There are numerous, red, much elevated, tuberculous patches all over body, especially on posterior aspect. Several of these present superficial ulcerations, some of them scabbed

over. Tip of nose greatly thickened, and left ear less so. Appetite very good now, but feels weak. Ulcerations were painted over with strong silver nitrate solution, without any good effect.

22nd October 1875.—Has been improving considerably during the past month. Ulcerations are now all healed, no fresh spots have appeared, and the old ones have receded both in prominence and in size.

CASE VIII.

Naigne ABDUL RHYMON, age 28, service 10, General No. 530, admitted 21st July 1875.

28th September 1875.—A stout, healthy-looking man, admitted on 31st July, presenting a small, palish, irregular, slightly raised anæsthetic patch on left cheek. No other eruption anywhere. Anæsthesia has now left, and the patch is slightly smaller. He has been treated with gurjun oil in the usual manner. Good appetite, and health appears good. Not married. No hereditary or family history of any similar eruption. No marks or history of syphilis.

22nd October 1875.—Eruption nearly gone.

SECUNDERABAD, (Signed) CHRISTOPHER McNALLY, M.D.,
22nd October 1875. Surgeon, 3rd Light Infantry.

29TH REGIMENT N.I.

Leprosy.

Havildar THATHIAH, æt. 41 years, General No. 1,698, Company 6, service 12 years.

13th December 1874.—Admitted with nodular masses situated over the nose cheeks, lobes of ears, &c., and circular and semi-circular patches over back particularly, and over body generally; in fact with the characters of leprosy in its earlier stages. The masses and patches are anæsthetic. No history of leprosy, hereditary or otherwise. Treated with carbolic acid and oil 1 to 20, to be rubbed in once a day.

18th January 1875.—No change. Gurjun oil 3 ss. to liqr: Calcis 3j. ter die. Local application rubbed in morning and evening 1 to 3 parts.

1st February.—Ordered 1lb. of mutton daily.

23rd.—Increase gurjun oil to ℥ 40 three times a day internally.

10th March.—I do not see any difference in the man, but he himself thinks he is better. Increase gurjun oil to 3j. three times daily.

30th.—Anæsthesia slightly less. Increase gurjun oil to 3i. three times daily.

13th April.—Tubercular patches on back seem less elevated, complains of a burning sensation over the patches. Omit mutton for two days.

15th May.—No change. Continue gurjun oil and mutton.

1st June.—No change. Omit gurjun oil treatment. Give ol: morrhue 3ii. twice a day with ferri perchloride tincture: ℥ 15 in each dose.

27th.—Tubercular patches no better, but he seems to have become fatter.

2nd July.—Discharged. Recommended for twelve months, sick leave to Masulipatam, his native place.

Private ADUMKHAN, æt. 41 years, General No. 2,802, Company No. 1 service 21 years.

2nd July 1875.—Admitted on June 17th with a vesicular eruption just above left ankle and an anæsthetic patch of skin on inner side of same ankle and foot. He says he began to lose feeling in this place on his return from Hongkong in 1871, and that it has been getting gradually worse until now, when there is complete loss of sensation. He was treated on admission with gurjun oil, but this brought on symptoms of dyspepsia and it was discontinued. He is now getting iron and quinine. Mutton lb. 1.

9th.—Eruption getting better. It is being dressed with carbolic ointment. Continue quinine and iron. Continue mutton.

18th.—Eruption nearly well, anæsthetic patch extending. To continue iron and quassia, which he has been taking since 12th. Continue mutton.

13th August.—Discharged to duty.

Communicated by Surgeon Rogers-Harrison.

40th Regiment Native Infantry.

Disease leprosy, name SHEIK MAMOOH, age 30 years, service 12 years, Regimental No. 2,647, admitted 19th August 1875.

This man was admitted on the above date with a leprosy ulcer in the sole of the left foot, about the size of a rupee, and half an inch deep. The middle toe of the left foot has been lost. The limb was numb from the knee downwards on this side.

Besides these there were various large discolored patches on different parts of the body.

All these patches were anæsthetic.

The man states that the ulcer in the foot has existed for two years and the anæsthetic patches for three months.

Treatment.—Three drachms of the gurjun oil emulsion were given internally twice daily, and the ointment applied externally.

Owing to the want of gurjun oil the man was not brought under this treatment until the 29th August, and on the 29th September the following is his condition:—

The sore is reduced to less than a quarter of its original size, and is filled up to the level of the surrounding skin.

The anæsthesia has quite disappeared, with the exception of one point on the second toe of the left foot.

His general health has much improved since he came under treatment.

SECUNDERABAD,
29th September 1875.

(Signed) E. LEVINGE, Surgeon,
Late in Medical Charge 40th Regiment N. I.

CALICUT.

Report on the treatment of leprosy with the gurjun balsam by Surgeon-Major W. H. Roberts, M.D., in charge of Leper Hospital, Calicut, dated 1st October 1875.

The result of the trial given this treatment during the past year leads to the conclusion generally that it is beneficial, and in some instances curative, but really not more so than the many other methods of treatment that have from time to time been advocated and tried. It certainly has not here proved so paramountly successful as at the Andamans. It must be admitted at the same time that the treatment here was not so continuous as that pursued in the Andamans. There the leper convict had no aim or object in life till fired with the hope this treatment afforded of being alleviated or rid of his disease. Possessed of this healthy stimulus, he worked away at his own cure with a faith and a will that invariably bear fruit, good or bad, as the cause may be. Here the mendicant vagrant leper never for a moment forgets that he is a free man, free to come and go as he pleases, and this liberty of action he asserts on every, even the slightest, provocation. As feasts, fasts, and fairs come round, he must needs attend them to indulge in his begging proclivities, and if these do not, suit his whim, he simply walks away. Thus treatment is interrupted, the wish to get cured is not so ardent, or at any rate is not controlled by that *will* which is an important factor in this treatment. Then there is probably a material difference in the balsam itself. Four supplies were received; no two supplies were alike; the first received in September of last year and the last received in September of this year were the best, and if these were good the two intermediate supplies were bad or very inferior, being dissimilar in appearance, smell and taste, and in their mixing properties with lime-water.

Though unacquainted with the convict diet scale in use at the Andamans, I have no hesitation in assuming that it is a better one than that in use at the Calicut Leper Hospital. Thus, there are at least three very probable, and, if real (as I believe them to be), very essential differences in the conditions of things to account in some measure for the difference in the results as obtained here and at the Andamans.

The emulsion (equal parts of gurjun oil and lime-water) acts powerfully on the gastro-intestinal and genito-urinary tracts, promoting the action of the bowels and kidneys, and in the majority of cases increasing appetite; in two cases, I regret to say, its action was irritative, and induced gastritis.

The embrocation (one part of gurjun oil and three parts of lime-water) softens and loosens the thickened patches of skin termed tubercles, which gradually fine down (by a process neither desquamative or ulcerative, but essentially a softening and breaking up) to normal texture and appearance, restoring color and sensation to anæsthetic parts. In fact, the action of the gurjun embrocation on the skin is very like that of vaporized carbolic acid when used for the same purpose. Of the twenty cases recorded, treatment, curative or tending decidedly thereto, is indicated in six cases, beneficial in five, palliative in eight, futile in one. These results are very much those obtained every day by ordinary methods of treatment; hence gurjun

balsam, as tried and proved at this hospital, is not more specifically curative than other methods.

I append a table showing results of treatment in the ordinary way at this hospital during the past five years.

In a report on the "gurjun" method of treatment, it would be out of place to speak of other methods of treatment, or of the treatment of leprosy generally. But I may be permitted, in concluding, to state that I have no faith in any specific, at least any yet advocated; nor indeed is it in the nature of things to find a specific for this fell disease. Leprosy in its earlier stages, and in some state of the constitution developing it, is more or less curable by any rational plan of treatment that is essentially tonic and restorative; good food, good air, and occupation are essential to this end; these obtained, then the chaulmogra, the gurjun, the vaporized carbolic acid, or other mode of treatment may be contemporaneously employed, and with benefit. Leprosy in its more advanced stages, and in constitutions broken down by it, is not curable; but the sufferings it entails are capable of much mitigation, and by the very same means, *viz.*, good food, good air, and occupation, with any other treatment that reason and experience indicate as appropriate. This much we can do for the leper, and I humbly take it are in duty bound to do. How? There is but one reply to this, and it emanates from experience past and present, by the institution of properly-organized Leper Hospitals and Leper Asylums for the segregation of the leper. This is the real, nay only, *cure* for leprosy. It is a "State" question, and I leave it to the State to take it up.

Table showing the Results of Treatment during the past five years at the Calicut Leper Hospital.

	Remained.	Admitted.	Total.	Cured.	Relieved.	No better.	Absconded.	Died.	Remaining.	Remarks.	
1870.											
Lepra, scaly	1	5	6	5	1	During the greater part of this year 1874 treatment by vaporized carbolic acid was employed.	
Do. ulcerative	5	18	23	1	16	..	..	1	5
Do. do. with oblation	5	9	14	..	7	2	..	..	5
Do. tubercular and nodular	4	11	15	..	9	..	..	2	4
Do. anæsthetic .. ..	..	..	..	..	..	..	..	..	..
1871.											
Lepra, scaly	1	9	10	6	..	..	..	..	4
Do. ulcerative	5	27	32	1	18	..	..	1	12
Do. do. with oblation	5	6	11	..	6	2	..	1	2		
Do. tubercular	4	7	11	..	5	3	..	1	2		
Do. anæsthetic .. ..	..	..	..	..	..	..	..	..	..
1872.											
Lepra, scaly	4	24	28	12	8	..	2	1	5		
Do. ulcerative	12	20	32	12	9	..	..	1	10
Do. do. with oblation	2	2	4	..	..	..	..	3	1
Do. tubercular	2	2	4	..	2	1	1	..	..
Do. anæsthetic .. ..	..	..	..	..	..	..	..	..	..
1873.											
Lepra, scaly	5	30	35	20	3	..	..	3	9
Do. ulcerative	10	21	31	7	12	..	2	2	8		
Do. do. with oblation	1	6	7	..	4	..	..	2	1
Do. tubercular .. ..	..	12	12	1	6	..	..	..	5
Do. anæsthetic .. ..	..	..	..	..	..	..	..	..	..
1874.											
Lepra, scaly	9	11	20	6	8	..	..	1	5
Do. ulcerative	8	17	25	5	7	4	3	3	3		
Do. do. with oblation	1	3	4	..	..	..	..	3	1
Do. turbercular	5	17	22	4	7	2	..	1	8		
Do. anæsthetic .. ..	..	11	11	3	2	..	..	..	6

(Signed) W. H. ROBERTS, M.D., Surgeon-Major,
Civil Surgeon, Malabar.

CALICUT,
1st October 1875.

Tabulated Summary of 20 Cases of Leprosy treated with Gurjun Oil at the Leper Hospital, Calicut.

Number.	Names.	Age.	Caste.	Sex.		Form of Disease.	Duration of Disease.		How long under Treatment.	Remarks.
				Male.	Female.		Years.	Months.		
1	Ally Cooty ..	35	M.	M.	..	Lepra anæsthesia.	4 to 5	..	Put on gurjun oil treatment 9th September and continued it to 16th November 1874, when the supply of oil was expended. Put on again 12th January 1875 and continued till 16th April 1875, when he was discharged in good health.	Treatment decidedly curative.
2	Kannan Nair ..	15	H.	M.	..	Lepra ..	More than one year.	..	Put on gurjun treatment on 6th September and continued it to 16th November 1874, when oil expended. Was put on again 11th February 1875 and continued till the 1st May 1875, when he went away with improved health.	Do.
3	Ajooty ..	26	M.	M.	..	Lepra scaly	2	..	Put on gurjun treatment on 1st September 1874 and continued it to 28th October, when he left hospital. Returned and resumed treatment 12th February 1875 and continued it till 1st March 1875, when he was discharged well.	Treatment curative.
4	Pucker ..	30	M.	M.	..	Lepra anæsthesia and ulcerative.	2	..	Put on gurjun treatment 1st September 1874 and continued it till 16th November 1874, when oil was expended. Put on again 16th March 1875 till 10th May 1875, when he refused to submit further. Put on the chaulmogra oil treatment on the 13th May 1875, which he continues taking.	Gurjun treatment futile. Chaulmogra doing good.
5	Muthayoo ..	31	Ch.	M.	..	Lepra ulcerative..	8	..	Put on gurjun treatment 1st September 1874 and continued it to 16th November 1874, when oil expended. Died.	Treatment beneficial to a certain extent. Died exhausted by the disease.

Tabulated Summary of 20 Cases of Leprosy treated with Gurjun Oil at the Leper Hospital, Calicut—(Continued).

Number.	Names.	Age.	Caste.	Sex.		Form of Disease.	Duration of Disease.		How long under Treatment.	Remarks.
				Male.	Female.		Years.	Months.		
6	Choichee	..	H.	..	F.	Lepra ..	9	..	Put on gurjun treatment 1st September 1874 and continued it to 16th November 1874, when oil expended. Resumed treatment 23rd February 1875 and continued it to 19th March 1875, when she had fever. Put on again 3rd September 1875, and continues taking it.	Treatment beneficial so far.
7	Gnapathy	..	H.	M.	..	Lepra scaly thickening.	7	..	Put on gurjun treatment 7th September 1874 and continued it to 12th October 1874, when he had an attack of acute gastritis. Died.	Tendency of treatment so far curative. Acute gastritis caused death.
8	Imbechee	..	H.	..	F.	Lepra anæsthetic..	5	..	Was put on gurjun treatment on the 9th September 1874 and continued it to 23rd idem, when she had fever, nausea, vomiting, and much irritation of stomach. Resumed 27th September 1874 and continued it to 8th October 1874, when the above symptoms reappeared. Died.	Treatment palliative. Acute gastritis caused death.
9	Ahmed ..	..	M.	M.	..	Lepra scaly with ulcer and anæsthesia.	5	..	Put on gurjun oil treatment 9th September 1874 to 16th November 1874, when the supply of oil was expended.	Treatment palliative.
10	Lazaar ..	..	Ch.	M.	..	Lepra ..	6	..	Was put on gurjun treatment on 9th September 1874 and took it till the 16th November 1874, when oil was expended. Put on again 11th April 1875 and continued it to 3rd August 1875, when oil was expended. Resumed treatment 3rd September 1875, and continues taking it.	Do.

Tabulated Summary of 20 Cases of Leprosy treated with Gurjun Oil at the Leper Hospital, Calicut—(Continued).

Number.	Names.	Age.	Caste.	Sex.		Form of Disease.	Duration of Disease.		How long under treatment.	Remarks.
				Male.	Female.		Years.	Months.		
19	Neechoo	12	Ch.	M.	..	Lepra tubercul. c anæsthesia.	5	..	Put on gurjun oil treatment 11th February 1875, and continued it to 3rd August 1875, when oil expended. Put on again 3rd September 1875, which he continues to take.	Treatment curative as to restoring color of skin and lessening tubercle; anæsthesia ameliorated. Tendency of treatment curative.
20	Kundoo	24	H.	M.	..	Do.	3	..	Was put on gurjun treatment 23rd March 1875, and continued till 3rd August 1875, when oil expended. Resumed treatment 3rd September, which he continues to take.	

CALICUT,
1st October 1875.

W. H. ROBERTS, M.D., Surgeon-Major,
Civil Surgeon, Malabar.

1. *Lepra Anæsthetic.*

Ally Cooty, æt. 35, Male, Moplah, Ernàad.

4th September 1874.—Is this day put on gurjun balsam. Takes ℥x. internally. Has been ill four to five years. Relations not diseased. Has thickening of many parts of body. Anæsthesia of both hands and feet, on left shoulder and back. Is of very constipated habit of body, and states the balsam aggravates this tendency, not having stooled for several days, and in consequence has no appetite.

11th.—States that he feels better; the pricking, pulling sensations much relieved. Anæsthesia not relieved; no sleep at nights. To have a dose of salts and senna.

14.—Put on ℥xxx. Bis die.

20th.—℥xl.

27th.—3j.

29th.—Feels decidedly better; sensation returning to anæsthetic parts.

4th October 1874.—Put on ℥lxxx. of the oil.

28th.—General condition improved; has gone to keep Ramzan.

24th November.—Returned to hospital.

12th January 1875.—Put on gurjun treatment ℥xxx.

15th February.—Has febrile attacks at nights; bowels constipated; relieved by salines and purgatives.

1st March.—Dose increased to 3i.

23rd.—Is much better; thickening much reduced; sensation returning to most parts; palmar surface of both hands have sensation restored.

16th April.—Is very much better in every respect; the feet the only parts to which sensation has not been quite restored. Discharged.

Remarks.—In this case treatment has been of decided benefit.

2. *Lepra.*

Kannan Nair, æt. 15, Male, Hindu, Ponnany.

9th September 1874.—Was this day put on gurjun balsam treatment. Takes ℥x. internally. Has been ill for a little more than one year. Disease hereditary. Father and mother died of it. Had psoriasis which was cured by the carbolyzed vapor treatment. Has anæsthesia of hands and feet; rest of the body free; no thickening; has a few discolored patches. Lost the last digit of middle finger of right hand.

14th.—Put on ℥xv.

20th.—Put on ℥xx. States that the anæsthesia is somewhat better (of this I am a little doubtful).

27th.—Put on ℥xxv.

4th October.—Put on ℥xxxv.

29th.—General condition better.

16th November.—Oil expended.

11th February 1875.—Resume treatment ℥xxx.

1st March.—Improving.

1st April.—Continuing to improve.

1st May.—Went away of his own accord; is very much better; color of skin healthy, with the exception of the anæsthesia of hands and feet; his health may be said to be restored.

Remarks.—Treatment beneficial.

3. *Lepra Scaly.*

Ajooty.—Æt. 26, Male, Moplah, Calicut.

1st September 1874.—Is this day put on gurjun oil treatment ℥xv. internally, ointment externally. Has been ill for two years. Relations not diseased. The psoriasis pervades all parts of the body, and chiefly the lower extremities, which have for the past two months been affected with a brawny œdema.

7th.—Refused treatment.

9th.—Ordered to resume treatment or go away.

24th.—The œdema of legs considerably less; they are still covered with scabby crusts.

29th.—Legs still discharge from many small points; takes 3 i. of the oil Bis in die.

28th October.—Left hospital last evening of his own accord to keep Ramzan. Œdema of legs quite gone; psoriasis of legs healed. Swollen glands of groins much lessened in size, that of neck not changed.

12th November.—Returned to hospital; oil being nearly expended, gurjun treatment not resumed.

12th February 1875.—Put on gurjun treatment again 3 i.

1st March.—Discharged well.

Remarks.—A very favorable case. Treatment curative.

4. *Lepra Anæsthetic and Ulcerative.*

1st September 1874.—Pucker, æt. 30, Male, Moplah, Calicut. Is this day put on gurjun oil treatment ℥x. internally, ointment externally. The anæsthesia affects chiefly the right side and half of body, the other side having sensation; there is a large ulcer on the left skin in front; both feet and hands thickened; small ulcers at roots of nails. Thickened patches on skin of thorax. Been ill two years. Relations not diseased.

7th.—Refused treatment.

9th.—Ordered to resume treatment or leave hospital.

10th.—Gets frequent attacks of fever; had an attack last evening, it commenced with shivering-salines. No fever this morning.

14th.—Resumed treatment.

15th.—Fever again doubtless dependent on irritation from sores in foot (skin).

- 17th.—Resumed treatment \mathfrak{M} xx.
- 20th.—Had fever.
- 27th.—Resumed treatment \mathfrak{M} xxx. Sores on shin still troublesome; touched with blue stone.
- 4th October.—Put on \mathfrak{M} L. of oil.
- 6th.—Had fever. Emulsion omitted.
- 8th.—No fever. Resumed treatment with emulsion.
- 14th.—Fever again; treatment not suspended.
- 16th.—Gurjun treatment suspended *in toto*.
- 20th.—No fever; took the emulsion (\mathfrak{M} 50) but no embrocation. Carbolic oil to sore.
- 28th.—Continues the emulsion. No better.
- 16th November.—Oil expended.
- 16th March 1875.—Resumed treatment till the 10th May, when it was discontinued, he positively refusing to submit further. His state of body no better; gets frequent attacks of fever; sores do not heal; anæsthesia no better.
- Remarks.*—Treatment quite futile.
- 13th May 1875.—Put on chaulmogra oil \mathfrak{M} x. in 5 i. of milk, and one part of chaulmogra oil to sixteen of cocoanut oil, to be rubbed over the body twice a day.
- 1st June.—Is decidedly better for the change of treatment.
- 1st July.—Is improving in general health; the ulcer on left shin healing; febrile attacks much fewer and less fierce.
- 1st August.—Is improving.
- 1st September.—Improving.
- 30th.—Is very much better; no fever for the past two months; ulcer nearly healed; thickenings of skin on chest lessened; color of skin improved. General condition and appearance much improved.
- Remarks.*—In this case the gurjun did harm; the chaulmogra is doing good.

5. *Lepra (ulcerative).*

MAUTHAYEE, æt. 31, Male, Christian, Cochin.

1st September 1874.—This day put on the gurjun balsam treatment; takes \mathfrak{M} x. internally. Has been ill for eight years. Relations not affected. Has been about two years in hospital. Has sores in soles of both feet and on tips of most fingers; these ulcers are deep, perforating, and very difficult to heal, breaking open again and again. No anæsthesia. Has been now and again subjected to carbolized vapor, neerutte oil, &c., with partial and temporary benefit.

7th.—Refused treatment.

9th.—Ordered to resume treatment or go away; takes \mathfrak{M} xv. from to-day.

11th.—Says he feels better; can open and close hand better; appetite increased since taking the oil.

14th.—Put on \mathfrak{M} xxx.

20th.—Put on \mathfrak{M} xl.

24th.—The ulcer assuming a clean look and healthy action.

20th.—Had fever last night, but took his oil this morning; dose 3 i.

30th.—There is local disturbance in index finger of right hand, the cause probably of fever, &c.; treatment persevered in.

4th October.—Put on \mathfrak{M} 80 of oil; some pieces of bones removed from finger.

6th.—Some piece of bone removed from sore in foot.

10th.—Some more bones removed.

20th.—Is still taking \mathfrak{M} 80. Is generally much better; sores healing; can walk now; before he could scarce move.

16th November.—Oil expended; treatment never resumed. Before the last supply reached he had return of the specific fever; more pieces of bone from hands and feet were coming away; discharges from sores profuse and exhausting.

23rd February 1875.—Died.

6. *Lepra*.

CLOYCHEE, æt. 49, Female, Hindu, Calicut.

1st September 1874.—Is this day put on the gurjun balsam treatment; takes \mathfrak{M} x. internally. Has been ill nine years. Relations not diseased. Has anæsthesia of both lower extremities from below the knees; has ulcer on right big toe and heel of left foot. Has several large light-colored patches on chest and back, but these are not anæsthetic; they possess sensation.

7th.—States that she feels better.

9th.—Ordered \mathfrak{M} xv. from to-day.

11th.—States that she feels better; that her appetite is much improved; that the pains, twitchings, in body are relieved; the light patches above referred to are becoming dark from the application of the balsam.

14th.—Put on \mathfrak{M} xxx.

20th.— \mathfrak{M} xl.

27th.—Put on 3 i.

29th.—States that she feels better; sensation returning to anæsthetic parts.

4th October.—Put on \mathfrak{M} 80 of the oil.

29th.—States that she feels somewhat better on the whole; still complains of aches and pains all over the body; the anæsthesia is a little better; the hands and feet still dead. I consider her condition generally improved.

16th November.—Oil expended.

23rd February 1875.—Resume gurjun treatment. 3 i. B. D.

19th March.—Had an attack of fever. Lepretic possibly in part, but also irritative, from the gurjun oil; unwilling to resume treatment.

15th September.—Resumed treatment. 3 j.

17th September.—Another attack of fever, nausea, vomiting, pain, &c., attributed to gurjun.

20th.—Resume treatment. 5 j.

30th.—Present state. General condition of body improved; anæsthesia of hands and feet less; color of skin nearly restored; ulcer of feet healed.

Remarks.—Has much benefited by treatment. Not cured

7. *Lepra (scaly, thickening, &c.).*

GNAPTHLY, æt. 20, Male, Hindu, Ponnany.

7th September 1874.—Is this day put on the gurjun balsam treatment; takes ℥ x. internally, ointment externally. Has been ill seven years. Father and mother died of leprosy. The psoriasis had been much relieved by former treatment, viz., by the carbolized vapor, neerutte ointment, &c. Has thickening of cuticle on both feet and on face (nose, lips, malar prominences, ears, both nipples). Has a sore on right foot between second and third toes; anæsthesia of both lower extremities.

11th.—States that he feels better; pains, aches, prickings of body are alleviated. Anæsthesia just the same, i.e., not relieved. Appetite better and increased.

29th.—States that sensation is returning to the anæsthetic parts, especially on the body and upper extremities; feet still dead.

4th October.—Put on ℥ 50.

10th.—Has fever; gurjun treatment omitted. Acute gastritis supervened, to which the lad eventually succumbed.

11th November.—Died.

8. *Lepra (anæsthetic).*

IMBECHEE, æt. 35, Female, Hindu, Calicut.

9th September 1874.—Put on the gurjun balsam treatment to-day, ℥ x. internally; anæsthesia from the knee downwards, of both legs, of both upper extremities, of nose, forehead, lobes of ears, which are also thickened. Not hereditary.

14th.—States that she feels better; the pricking and twitching of body relieved; the anæsthesia is perhaps slightly relieved; bowels not affected; appetite better. Put on ℥ xxx.

23rd.—The balsam yesterday began to disagree; nausea eructation; inability to take food; took her balsam with the effect of increasing above symptoms. Took magnesia draught. To have sinapism to epigastrium and effervescing prussic acid mixture if need be; stop balsam; irritability of stomach; not dependent on catamenia; has had no flow for some seven months, or since she came to hospital.

27th.—Resumed treatment. ℥ xxx.

13th October.—Has for the past ten days been suffering from a sharp attack of gastritis. Died.

9. *Lepra (Scaly with Ulcer and Anæsthesia).*

AHMED, æt. 27, Male, Moplah, Quilandy.

9th September 1874.—Is this day put on the gurjun balsam treatment; takes ℥ x. internally. Has been ill for five years, not hereditary. Has thickening of both feet, the right especially, with ulcers in soles of both; the psoriasis is chiefly in the lower extremities. Has anæsthesia of the whole body, excepting a little of the trunk in front (chest) and back.

10th.—Put on ℥ xv.

14th.—Put on ℥ xxx. States that the pains and aches are somewhat relieved; finds no change in the anæsthesia; bowels not affected; appetite improved. The new medicine causes a burning in the stomach; lassitude, burning in the eyes, and a feeling of hardness of the body are also attributed to its use (this last is anomalous, and not easily explainable, for the very opposite, that is, that they feel better, the body more supple, so to speak, is generally expressed).

20th.—Put on ℥ 40. B. D.

27th.—3 i.

29th.—Feels better; sensation returning.

4th October.—Put on ℥ 80 of the oil.

29th.—Feels generally better; anæsthesia better; the psoriasis better. This man has none of the aches and pains so commonly complained of by the other patients. Has fever occasionally at nights.

16th November.—Treatment not resumed; oil expended.

10. *Lepra.*

LAZAR, æt. 16, Male, Christian, Calicut.

9th September 1874.—This day put on gurjun balsam treatment. Takes ℥ x. internally. Has been ill six years. Disease hereditary. Father died of it. His psoriasis had been relieved by the carbonized vapor. Has anæsthesia of the left lower extremity, which is also very weak and is twisted in walking; paralytic; a patch on the right hip is anæsthetic. Left hand and forearm have no sensation as far as elbow; some patches on the back are also without sensation.

14th.—Put on ℥ xv.

20th.—Put on ℥ xx. States that he is benefited by the gurjun oil treatment; the anæsthesia is somewhat better, but the whole body is more painful, that is, the burning and pricking sensations are increased (all complain that owing to these they can get no sleep).

27th.—Put on ℥ xxv.

29th.—States that he feels better. Continue.

4th October.—Put on ℥ 40.

29th.—Anæsthesia is somewhat better; complains much of pains and aches.

16th November.—Oil expended.

11th April 1875.—Resumed the gurjun treatment. ℥ xxx.

1st May.—Improving in general health; lepratic state much the same.

5th June.—Much the same.

3rd August.—Oil expended.

3rd September.—Resumed treatment on the receipt of fresh supply.

5th.—Had fever with much gastric pain and general irritation, attributed to gurjun oil.

7th.—Resumed treatment. 3 i. Bis in die.

30th September.—Present state. Pains and aches of body generally are better ; anæsthesia not lessened ; paralysis of left leg and foot in *statu quo*.

Remarks.—Treatment so far palliative, not curative.

11. *Lepra (Ulcerative).*

SUNKARAN, æt. 30, Male, Hindu, Ponnany.

9th September 1874.—This day put on gurjun balsam treatment. Takes ℥ x. internally. Has been ill seven years. Asserts not hereditary. Has anæsthesia of both upper and lower extremities ; the trunk of the body and face free from anæsthesia. Fingers of both hands contracted. Has ulcer of big toe of right foot ; the other toes of same foot contracted and doubled in.

14th.—Put on ℥ xxx.

20th.—Put on ℥ xl. States that he generally feels better. Anæsthesia not much, if any ; improved : appetite improved ; bowels not affected ; eyes burn ; no sleep.

27th.—Put on 3 i. Feels better to-day.

29th.—Sensation better.

4th October.—Put on ℥ 80.

29th.—States that his anæsthesia is not a bit improved, but that the pains and aches are less ; ulcer healing ; general health and appearance improved.

16th November.—Oil expended. State much the same.

12th January 1875.—Resumed treatment. ℥ xxx. B.D.

1st March.—3 i. of oil bis in die ; general state much the same ; anæsthesia no better.

1st June.—The ulcer in ball of big toe healed ; general health improved ; anæsthesia in *statu quo*.

4th July.—Has had fever ; lepratic ; the ulcer has broke open again.

3rd August 1875.—Oil expended.

3rd September.—Resumed treatment.

30th.—Present state. General health good ; skin clean and healthy looking ; headache, pains, and aches of body alleviated ; anæsthesia not lessened ; ulcer not healed.

Remarks.—Treatment so far has not been curative ; the most that can be said of it is that it has been palliative.

12. *Lepra (Ulcerative).*

CURPAYEE, æt. 41, Female, Hindu, Calicut.

8th September 1874.—This day put on gurjun balsam treatment. Takes ℥ x. internally. Has been ill for some fifteen years ; asserts not hereditary.

Husband alive and not diseased; had two children, one dead; living child affected with leprosy. The whole body anæsthetic; ulcers on both hands and feet with loss of fingers and toes of both extremities. Has the leonine countenance.

10th.—Put on \mathfrak{m} xv.

14th.—Put on \mathfrak{m} xxx.

20th.—Put on \mathfrak{m} xl; asserts that she feels much better; sensation has been restored to the body; the extremities from elbows and knees still anæsthetic; bowels not affected; appetite very much improved; no sleep.

22nd.—Took \mathfrak{m} xxx. of the balsam this day, and was sick after it, that is to say, has nausea and eructation; not vomited.

23rd.—Still sick; taken no food all yesterday. Magnesia carbonas gr. xxx., tinct. gentian co. \mathfrak{z} i., aqua mentha pip. \mathfrak{z} i. m. ft. given this morning; ordered sinapism to epigastrium, and if sickness continues effervescing draught with \mathfrak{m} iii., acid hydrocyanic dil. This woman has had no catamenia for three years.

29th.—Resumed treatment of her own accord; took \mathfrak{m} xl.

4th October.—Put on \mathfrak{z} i; B.D.

29th.—Anæsthesia of body much less, but both forearms and legs still dead; complains of pricking sensation of body.

16th November.—Oil expended; treatment not resumed. This woman avers that the benefit she has derived is essentially attributable to the treatment by carbolized vapor that she had undergone before taking gurjun.

13. *Lepra (Ulcerative).*

Ibrahim, æt. 19, Male, Moplah, Calicut.

9th September 1874.—This day put on gurjun balsam treatment. Takes \mathfrak{m} x. internally. Has been ill since he was 12 years old, or for the past seven years. Asserts not hereditary. Has lost the half of left foot by ulceration. Ulcer on middle finger of right hand. Has several large whitish patches on chest and back which are anæsthetic. Both extremities from elbows and knees anæsthetic.

10th.—Put on \mathfrak{m} xv.

14th.—Put on \mathfrak{m} xx.

20th.—Put on \mathfrak{m} xxx. Asserts that the pricking and pulling sensations are relieved. Anæsthesia not alleviated; appetite improved; bowels slightly affected, *i.e.*, action increased.

27th.—Put on \mathfrak{m} xl.

29th.—Better; anæsthesia of the upper parts of body especially relieved.

4th October.—Put on \mathfrak{m} l. of the oil.

30th.—States that he feels better; the pulling, aching pains are better; sensation returning to extremities and to the white patches above noted; can extend fingers better. He looks better.

31st.—Went away of his own accord.

14. *Lepra (Scaly)*.

Krishnen, æt. 30. Male, Hindu, Calicut.

9th September 1874.—Put on gurjun balsam treatment. Takes ℥x. internally. Has been ill for two years. Not hereditary. Body covered with psoriasis. Has thickening of lips and nose. Has a great number of light-colored patches on body, all of which are anæsthetic. The scaly eruption had been much relieved by the carbolized vapor treatment, but there was still some of it, especially on legs, when put on gurjun.

14th.—Put on ℥xx.

20th.—Put on ℥xxxv.

23rd.—States that he feels very much better, the pricking and pulling sensations in body are better; the anæsthesia is less so; the light-colored patches regaining sensation; appetite improved; bowels not affected; treatment causes much heat of body with a burning sensation, and no sleep at nights.

27th.—Put on ℥l. Feels better.

4th October.—Put on 3 i. of the oil.

30th.—States that he feels very much better. The psoriasis completely gone; sensation has returned to every part of body; restored!

Thickening of nose, malar prominences, &c., gone, and sensation returned to these parts. Looks better.

16th November.—Oil expended.

28th December.—Went away. Is very much better.

Remarks.—Treatment curative.

15. *Lepra (Ulcerated and Anæsthesia)*.

Moideen, æt. 45, Male, Moplah, Ponnany.

13th September 1874.—Put on gurjun balsam treatment. Takes ℥xx. internally. Has been ill for ten years; not hereditary; wife nor children affected with this disease; ulcers on soles of both feet; loss of some joints of right toes. Anæsthesia of both upper and lower extremities, and several patches on trunk.

24th.—Says he feels somewhat better; takes ℥xxxv.

27th.—Put on ℥xl.

29th.—Better, sensation returning.

4th October.—Put on ℥l.

30th.—States that he feels generally better; all parts of the body above the knees have sensation returning to them; all the white patches now have sensation, both legs from the knees down are, he states, more dead than ever. Anæsthesia increased. Looks better.

16th November.—Oil expended. States much the same as above; general appearance better.

28th.—Left Hospital.

29th January 1875.—Re-admitted; bodily condition much the same.

11th February.—Put again upon gurjun oil ℥xxx.

1st March.—3 i of the oil.

23rd.—His state this day is very much the same as that reported on October 30th. His general appearance is good, body well nourished.

1st April.—Feels better, he says, but the tubercular patches appear to me to increase in size and thickness.

22nd May.—Discharged for misconduct.

2nd July.—Re-admitted and put on gurjun oil 3 i.

1st August.—The tubercular patches are certainly increased in size and thickness. General state of body good. Anæsthesia as before, that is, from knees down, the parts feel dead.

3rd August.—Oil expended.

3rd September.—Fresh supply of oil received and put on 3 i; B.D.

30th.—His general condition I should say has improved to some extent. The anæsthesia of body generally is less, that from knees downwards not any better, the tubercular patches on body, forehead, cheeks have undoubtedly increased in size and thickness.

16. *Lepra*.

Atchutha, Nair, æt. 45, Male, Hindu, Palghaut.

1st October 1874.—Has been ill five years. Not hereditary. This is his third return to hospital; has been relieved and returned home. Disease commenced by loss of sensation in left leg, then both became so affected. Anæsthesia spread over body. Has thickening of integument, covering face generally. Put on gurjun oil ℥xxx.

4th.—Put on ℥l.

30th.—States that he feels better; derives more benefit from gurjun than from any thing else; sensation more or less restored to whole body above the knees; from knees downwards all sensation is dead; appetite much improved.

16th November.—Oil expended.

12th January 1875.—Treatment resumed.

24th.—Oil stopped; fever and gastric irritation set in. Dropsy of abdomen and lower extremities.

7th March.—Up to this date treatment was directed to the relief of symptoms above stated, and gurjun treatment resumed.

8th.—Increased to 3 i. This he continued to take regularly till the 13th June when he refused to take any more. Fever and gastric irritation again coming on, the oil too was very thick, and made very thick emulsion, if emulsion it may be called. Stayed in hospital till July the 7th for the relief of his fever, gastric irritation, and dropsy, when he was dismissed.

17. *Lepra (Tubercular)*.

Ragooval, æt. 48, Male, Christian, Tellicherry.

7th April 1875.—Admitted with tubercular leprosy. States that he has been ill only two months, that two months ago he first observed thickened patches on the face and ears. Admits of no hereditary taint, but allows that a sister of his died of this disease eight or ten years ago, after suffering

from the disease for some five years. Was in perfect health till two months ago. Thickening is in the usual places: eyebrows, nose, malar prominences, folds of cheeks about the mouth, lobes of ears. Has pains and aches over the body generally. Has anæsthesia over the left buttock only, several light-colored patches on body, anæsthetic. Put on ℥xxx. of the gurjun emulsion.

5th May.—Increased to 3 i. The tubercles on face and ears decreasing; general health good.

11th June.—Has a strong attack of fever. Omit gurjun treatment, salines, &c.

21st.—Resumed treatment 3 i.

15th July.—The tubercles diminishing, color and sensation returning to the patches on body, anæsthesia of buttock gone. Health good.

3rd August.—Oil expended. Is in very good health; tubercles very much less.

5th September.—Resume treatment.

30th.—The tubercles of ears quite gone, lobes look quite clean and natural, the thickening on face generally very much gone, face assuming its former appearance, anæsthesia quite gone. Is well, with the exception of a little thickening on the face.

Remarks.—Treatment decidedly curative.

18. *Lepra Tubercular and Scaly c Anæsthesia.*

GARASAM, æt. 12, Male, Christian, Tellicherry.

7th April 1875.—This lad is the son of Ragooval (the last case), and has suffered from leprosy for four years. He is one of five, three younger and one elder; these four are quite free of the disease. His father states that his son's illness began with a severe fever attended with shivering which partook in its course more of the remittent type. That a few days after the fever left him (some 8 or 10) "swellings" appeared on both cheeks and nose, and these patches gradually spread all over the body, more or less. That the subsequent appearance of these patches was not attended by severe fever, but the lad has febrile fits every six weeks or two months.

Present state.—The face presents the typical canine countenance, tubercular thickening of skin on forehead, eyebrows, cheeks, nose, ears. These patches pervade the body generally, nipples protruded, anæsthesia of the body generally, psoriasis of hands and legs. Had ulcers in the heels of both feet some six months ago, but these have quite healed previous to the breaking out of these sores; he had, it would appear, œdema of both legs. Put on ℥xx. of the emulsion, with the usual rubbing B.D.

20th.—Tubercles softening.

30th.—Had fever, belly-ache.

5th May.—Oil increased to 3 i; improving.

16th June.—Fever again; omit treatment.

18th.—Treatment resumed.

25th.—Improving slowly.

Continue treatment.

1st July.—Anæsthesia better, tubercles lessening, nose stuffy (blocked up).

3rd August.—Oil expended; much better.

3rd September.—Resume treatment 3 i.

30th.—Has generally much improved, tubercles less, has sensation now over the whole body, nose still stuffy.

Remarks.—Treatment has considerably ameliorated this lad's condition; it has not benefited him to the same extent as it has his father.

19. *Lepra Tubercular c Anæsthesia.*

NEEKOO, æt. 12, Male, Christian, Calicut.

11th February 1875.—Is this day put on gurjun treatment ℥ xv. internally. Has been ill for five years; denies all hereditary taint. Tubercles on cheeks, nose, and ears; discolored patches on chest, back, thigh. Anæsthesia of hands, feet, and buttocks; nipples prominent.

25th.—Tubercles on face softening.

27th.—Has diarrhœa; stop oil.

11th March.—Resume treatment with ℥ xxx.

26th.—Fever and shivering pain in abdomen caused by the oil he thinks; stop treatment.

29th.—Last three days had fever; to-day free from it; resume treatment.

5th April.—Put on 3 i; sensation returning to the discolored places; tubercles lessening.

20th.—Proper color returning to the light-colored patches; generally improving.

15th May.—Tubercles lessening; continue treatment.

30th.—Improving.

30th September.—Has improved steadily. The color is quite restored to the skin of chest, back, thigh, &c.; tubercles on nipples quite gone; those on face lessened; anæsthesia is better, but hands and feet still without sensation.

Remarks.—Treatment so far as restoring color to skin and lessening tubercles curative; anæsthesia ameliorated in parts only.

20. *Lepra Tubercular c Anæsthesia.*

KANDOO, æt. 24, Male, Hindu, Palghaut.

23rd March.—Has been ill three years; denies all hereditary taint. Has thickening with discoloration of skin on both cheeks and nose, similar patches on chest, back and limbs; these parts are anæsthetic, extremities from knees and elbows down anæsthetic. Put on ℥ xxx. Bis in die.

1st April.—Has diarrhœa, attributed to the oil.

6th.—Resumed treatment.

20th.—Patches getting darker with some improvement in sensation.

1st June.—Improving. Continue treatment.

14th.—Has fever. Omit gurjun.

21st.—Resumed treatment.

1st July.—Improving. Continue treatment.

30th September.—Has steadily improved. Natural color and sensation restored to body. Hands and feet still anæsthetic, but to a less degree; tubercles on face much less.

Remarks.—Has much benefited by treatment.

CALICUT, W. H. ROBERTS, M.D., Surgeon-Major,
1st October 1875. Civil Surgeon, Malabar.

Report on the treatment of leprosy with gurjun oil, agreeably to Circular No. 5,056, dated 2nd September 1874, from the Surgeon-General, Indian Medical Department.

No cases of leprosy have been treated in the Civil Dispensary. Three cases occurring among the convicts were treated in the Jail Hospital, and these form the subject of this report.

Case No. I.—Convict Doomah, aged 32 years, native of Canara, 1 year and 10 months in jail, transferred in good health after two months' incarceration in the jail of Mangalore. Nature of labor, stone-carrier, extramural. Admitted into hospital 10th November 1874; complained of anæsthesia and of tubercular swelling of nose and ears, also of anæsthesia and swelling of hands and feet, sensibility normal in all other parts; there were also reddish-colored patches on body and limbs; these signs of leprosy had recently appeared; stated that none of his relatives as far as he knew had ever suffered from leprosy. He was immediately put on the gurjun oil treatment, and it was pursued assiduously internally and externally up to the 15th March 1875, when he was discharged with marked improvement. Sensibility was almost entirely restored to the affected parts, and the tubercular swelling of nose and ears as well as the swelling of hands and feet and the red patches had disappeared; his appetite during treatment greatly increased, and extra animal diet was allowed; the only complaint was that the medicine caused a burning sensation in stomach. I regret, however, to state that this improvement was not permanent, perhaps from the treatment not having been continued long enough, and he is now again under treatment with tubercular swelling of the same parts, but the anæsthesia is not nearly so pronounced as on first admission, nor have the red patches re-appeared.

During the present year two cases of leprosy have been under treatment. Convict Somen, aged 26 years, light bamboo color, Canarese, after 6 months' incarceration in the jail of Mangalore was transferred to this jail in apparently good health; was employed as a stone-cutter, and at the end of a month was admitted into hospital on the 12th February complaining of swelling and loss of sensation of the left leg from knee to ankle, also of

reddish patches over his body which were smooth and shining and not raised; stated that none of his relatives had suffered from leprosy. He was placed under similar treatment; the swelling of leg gradually disappeared and sensibility returned, although not to its normal extent; the colored patches also disappeared, and he was discharged 9th April, but, like the former case, the amelioration was not permanent, and he is again under treatment for swelling and anæsthesia of leg; the patches on skin have not, however, returned.

Convict Naga, native country Palgaut, aged 43 years, color very fair. In jail 12 years and 10 months, of which 7 years were spent in Calicut Jail, and the remaining 5 years and 10 months in Cannanore Jail; goldsmith by caste, in jail ironsmith and carpenter; admitted into hospital 14th May complaining of swelling of left ankle with only slight numbness and of several colored patches on body; he like the other two denies having had any relatives affected with the disease. He quickly improved under the gurjun oil treatment, but like the others it was not continued sufficiently long, and he has been again admitted into hospital with similar symptoms as at first.

In these three cases I was struck by the manifest amelioration of the symptoms of leprosy brought about by the gurjun oil, but the treatment to effect a permanent cure (if this be possible) must be pursued for a much longer period than was given to these cases. It is probable that this remedy will be found to be particularly valuable in the early stages of the disease, and beneficial in all.

CANNANORE,
5th November 1875.

F. FLETCHER, Surgeon-Major,
In Medical charge Central Jail.

From Surgeon-Major W. DOYLE, M.D., F.R.C.S.I., Civil Surgeon, Cochin, to the Deputy Surgeon-General, Indian Medical Department, Southern District, Trichinopoly, dated Palliport Lazaretto, 2nd October 1875, No. 20.

I have the honor to acknowledge your memorandum, No. 3,417, of 11th September 1875, ordering me to furnish a report of the gurjun oil treatment of leprosy at Palliport, and in answer to inform you that the supply of gurjun oil was not received until the 5th January last, and on my next subsequent visit I selected two cases for the treatment, which was commenced on the 14th. I would have put more patients on the gurjun oil, but all the lepers, with the exception of one hopeless case and four using cashew-nut oil, were undergoing fumigation with carbolic acid by the order of Dr. Johnston.

No fair trial has been as yet given to the oil treatment, as of the two first cases one left the Lazaretto at his own wish on the 11th of March, and the other, as the Hospital Assistant reports, was discharged for "hard drinking" on the 22nd April last; he was re-admitted on the 1st July and discharged again for theft on the 29th. Another patient was placed on the oil on the 12th March to replace the case which left the Lazaretto on the previous day, and this patient left on 3rd May, as he did not like the treatment. The Hospital Assistant reports that there is much difficulty in getting the

patients generally to submit to any treatment; they have to be almost dragged to the fumigating basket; and on my last visit to Palliport one of the gurjun oil patients was complained of and brought up to me having been caught greasy handed in the act of scraping off the oil which he had just applied. This was a patient who was placed on the extra diet costing 5 Annas per day last year, and ran away in consequence, preferring to handle the money (2 Annas) to getting a dietary costing more than double the sum. This man, George, has been on the treatment since 4th May, and no improvement has taken place, but he is a very unruly patient, and does as little as he can for himself in the way of rubbing the oil, &c. The other patient at present using the oil has been doing so only since the 13th August, and no change is observable as yet. The three patients also who left when using the oil were too short a time under treatment to show any results; one of them, however, Francis, stated that there was a slight return of sensation in the benumbed parts. The cases of those who were placed on gurjun oil as taken by the Hospital Assistant are herewith sent. There are at present 28 patients undergoing fumigation with carbolic acid, three on cashew-nut oil, two on gurjun oil, and one hopeless case is on no special treatment.

FRANCIS, æt. 30, Christian, Native of Cochin.

14th January 1875.—Twelve years a leper and eight months in Palliport. No tubercles on the body, but some discolored patches on the back, right forearm, arm, and right ankle-joint. Loss of sensation on the right arm, right scapula, and in a portion of back just on the situation of discoloration. General health good. Placed on gurjun oil treatment. Cold bath every morning, using dry earth as detergent.

1st March 1875.—Nothing to be observed since the commencement of treatment. Continue as usual.

1st April 1875.—Patient states that he feels slight sensation on the parts where numbness existed. Continue as usual.

22nd April 1875.—Discharged for drinking.

Again admitted on the 1st July 1875, and was discharged for theft on 29th.

ITTAMUN, æt. 32, Hindu, Native of Quilon.

14th January 1875.—Ten years a leper and four months in Palliport. No tubercles on the body, but thickening of ears and chin. Lost two toes on the right foot, and some of the nails on the fingers are eaten away. Loss of sensation in legs and arms. General health fair. Put on gurjun oil treatment as directed.

1st March 1875.—Nothing to be observed since commencing the treatment.

11th March 1875.—Was discharged this day from the hospital at his own request.

PYLEE, æt. 32, Christian, Native of Verapolly.

12th March 1875.—Eight years a leper, disease inherited from his parents. No discoloration or eruption on the body, but some degree of thickness and loss of feeling on the face and upper and lower extremities. General health good. Gurjun oil treatment commenced to-day.

1st April 1875.—No change could be seen till this date.

3rd May 1875.—Left the hospital, as he does not like the treatment.

GEORGE, æt. 20, Christian, Native of Cochin.

4th May 1875.—Six years a leper and two months in Palliport. Has distinct elevated tubercles on the face, ears, elbows, and knee-joints. No loss of sensation on any part of the body. General health good. Put on gurjun oil treatment as directed with bathing, &c.

1st June 1875.—No change since last month.

1st July 1875.—Patient is very troublesome, and never adopts any measures in the way of improvement. No change has taken place.

1st September 1875.—No improvement. The patient dislikes the oil, and it is very difficult to get him either to take or to apply it.

30th September 1875.—No improvement.

C. VURRIED, æt. 13, Christian, Native of Cochin.

13th August 1875.—This leper is living with his mother here, who is also a patient in the hospital. Leprous two years as he states. Slightly tuberculous about the ears, over malar bones, and elbows. No loss of sensation. General health good. Put on gurjun oil treatment on this date as directed.

30th September 1875.—No change took place since commencement.

From the Acting Civil Surgeon, Madura, to the Deputy Surgeon-General, Indian Medical Department, Southern Division, Malabar and Canara, Trichinopoly, dated 21st October 1874, No. 364.

With reference to docket, No. 7,177, of the 7th instant, from the Secretary No. 3,863, of 1st to the Surgeon-General, and your memorandum marginally noted, I have the honor to submit the following summary of leprosy cases treated with gurjun oil, and the result of the treatment, and also two cases treated by carbolic acid.

2. Most of the patients belong to this country, one or two of them only having come from a distance for the sake of treatment. They belong to the poorer classes, and are of all castes, and both light and dark skins are to be found among them.

3. The anæsthetic form of the disease I have not seen alone; the anæsthetic and tubercular or anæsthetic and ulcerative seems to be the commonest form in this part of the country. Both young and old have been treated. A woman came one day but did not remain for treatment, who

had tubercular and anæsthetic leprosy, and her baby only a few months old was also affected.

4. The mode of carrying out the gurjun oil treatment was the same as that pursued by Dr. Dougall. Mr. Antonio, the Apothecary here, had lately come from Port Blair, and was consequently of much value in getting the treatment carried out properly. Those who had their voices affected by the disease first began to improve in this direction. As sensation commenced to be restored, they nearly all complained first of smarting in the parts which gradually diminished, leaving sensation entirely restored. Ulcers healed rapidly under the application of the gurjun ointment, and tubercles gradually disappeared. In a few cases the internal administration of the oil caused diarrhœa, under which circumstances its administration was discontinued for a few days.

5. There is a common belief amongst the natives that leprosy originates in syphilis, but I am unable to state that there is any connection between them. Many of the cases show that the disease is hereditary, but in others it appears impossible to account for its origin.

Report on the Treatment of Leprosy by Gurjun Oil by Surgeon Mark Robinson, Civil Surgeon, Madura.

No.	Names.	Sex.	Age.	Caste.	Date of Admission.	Appearance on Admission.	Date of Discharge.	Appearance on Discharge.	Remarks.
1	Mookatharen (Convict).	Male..	35	Malabar ..	27th March 1875.	Red tubercular patches on the right foot, upper and lower extremities and face, numbness and loss of sensation all over the body.	16th June 1875.	Patches disappeared, sensation somewhat restored.	Gurjun oil and ointment.
2	Soobbiah (Constable).	Do.	27	Hindu ..	4th June 1875.	Body covered with thick scaly eruptions; legs, elbow-joints, ears, cheeks, toes, and fingers are shining in appearance and ulcerated; numbness both in upper and lower extremities.	Remaining under treatment.	Ulcers healed; numbness somewhat better; scaly eruptions disappeared.	Do.
3	Rayappen ..	Do.	55	Christian ..	22nd February 1875.	Fingers of both hands and toes of both feet ulcerated. A large sore in the palm of right hand; sole of the right foot ulcerated. Cheeks and the lobes of both ears considerably thickened; loss of sensation in both hands and feet.	27th April 1875.	The ulcers have all healed; sensation restored; thickening of ears reduced.	Treated with gurjun oil and ointment.
4	Salamalay ..	Do.	35	Malabar ..	31st March 1875.	Tubercles in both ears; considerable thickening of the lower lobes. Slight ulceration in the toes of both feet, cheeks, and nose considerably enlarged; slight loss of sensation in the left fore-arm.	23rd August 1875.	Ears well; ulcers healed; sensation is now felt in arms; nose and cheeks are looking natural.	Do.
5	Soossay ..	Do.	45	Christian ..	9th April 1875.	Toes of both feet ulcerated; fingers and toes crippled; loss of sensation in hands and legs; patches of ulcers on the back.	26th July 1875.	Ulcers healed; sensation restored; thickening diminished.	Do.

6	Migale ..	Do.	40	Do. ..	10th April 1875.	Toes of both feet ulcerated; cheeks and lobes of both ears considerably swollen; loss of sensation in legs.	7th August 1875.	Sensation of the legs now felt; ulcers healed; lobes of ears appear natural.	Do.
7	Sencee Khadur..	Do.	12	Mohamedan.	13th April 1875.	Ears, cheeks, nose, and chin studded with tubercles; right nipple enlarged; toes and fingers swollen; a large ulcer in the sole of the right foot; loss of sensation in the left hand and legs.	22nd Sept. 1875.	Tubercles have all dropped off; right nipple natural; ulcers healed; sensation in the hand and legs restored.	Do.
8	Syed Abboobaker.	Do.	38	Do. ..	23rd April 1875.	Ears, cheeks, lips, fingers, and toes thickened and enlarged; right elbow-joint ulcerated; left eyelid enlarged; soles of both feet ulcerated; loss of sensation in hands, legs, and ears.	22nd August 1875.	Ulcers healed; sensation restored; thickened parts better.	Do.
9	Moothucunny ..	Female.	12	Do. ..	19th April 1875.	Tips of fingers ulcerated; patches of ulceration in both legs, the great and first toe of the right foot ulcerated; an ulcer in the sole of left foot; both elbows ulcerated; complete loss of sensation over the whole body.	Do. ..	Ulcers healed; sensation returned; is feeling well again.	Do.
10	Ismalbake. ..	Male ..	36	Do. ..	23rd April 1875.	Fingers and toes considerably swollen and thickened; patches of ulceration in the soles of both feet; loss of sensation in both hands and legs.	19th August 1875.	Swelling of the fingers and toes diminished; ulcers healed; sensation restored.	Do.
11	Francis..	Do.	48	Christian ..	25th April 1875.	Soles of feet and palm of right hand ulcerated; loss of sensation in hands, arms, and legs; lobes of both ears and cheeks thickened, swollen.	26th July 1875.	Sensation felt; ulcers healed; skin shining; ears and cheek appear natural.	Do.
12	Chourimoothoo..	Do.	55	Do. ..	10th April 1875.	Cutaneous; thickened patches with loss of sensation all over the body; cheeks, eyebrows, and lobes of ears swollen and thickened.	7th August 1875.	Patches disappeared; skin somewhat rough; sensation restored; thickened appearance of cheeks, eyebrows, and lobes of the ear better.	Do.

Report on the Treatment of Leprosy by Gurjun oil by Surgeon Mark Robinson, Civil Surgeon, Madura—(Continued).

No.	Names	Sex.	Age.	Caste.	Date of Admission.	Appearance on Admission.	Date of Discharge.	Appearance on Discharge.	Remarks.
13	Ninamahamud..	Male ..	14	Mohamedan.	28th April 1875.	Patches of cutaneous thickening with loss of sensation all over the body.	24th August 1875.	Thickening reduced ; sensation felt.	Treated with gurjun oil and ointment.
14	Abdulraheeman.	Do. . .	36	Do. . .	5th July 1875.	Covered with numerous ulcers on the right leg ; patches of eruptions all over the body ; thickening of the ears, fingers, and toes ; depression of the nose ; feeling of numbness all over the body ; nails of toes and fingers are beginning to drop off.	Died on the 29th July 1875.	Ulcers are better ; falling of the nails arrested ; thickening diminished ; died of pyæmia.	Do.
15	Ramasamy Chetty	Do. . .	30	Weaver ..	21st June 1875.	Covered with scaly eruptions and numerous ulcers in the upper and inner part of both feet ; loss of sensation all over the body. Slight enlargement and thickening of the lobes of the ear, also of the nose, cheeks, and lower lip ; there are a few ulcers on the inner surface of both wrists.	Remaining in hospital.	12-10-75.—Ulcers healed ; sensation restored ; lobes of the ear and nose natural ; scaly eruptions all gone.	Do.
16	Meenatchee ..	Child..	1½	Pariah ..	15th July 1875.	The fingers of both hands are completely gone, and one mass of ulceration is to be seen.	20th Sept. 1875.	The hands are well, and remained as stumps ; the progress of the disease appears to be arrested.	Carbolic acid mixture and ointment.
17	Ramen ..	Male ..	40	Nair ..	30th July 1875.	Admitted with thickening of the skin all over the body ; numerous ulcers in the toes and soles of feet ; loss of sensation.	26th Sept. 1875.	Skin has assumed a natural appearance ; sensation restored ; ulcers healed.	Do.
18	Veerun ..	Do. . .	32	Malabar ..	31st May 1875.	Finger-joints, soles of feet, and toes ulcerated ; loss of sensation in the affected parts.	23rd July 1875.	Ulcers healed ; loss of sensation restored ; is now able to move about as well again.	Do.

MADURA,
19th October 1875.

(Signed) MARK ROBINSON, Surgeon,
Acting Civil Surgeon, Madura.

From the Zillah Surgeon, Salem, to the Deputy Surgeon-General, Indian Medical Department, Southern Division, Malabar and Canara, Trichinopoly, dated 19th November 1875, No. 483.

With reference to Circular No. 5,656, of the 2nd September 1874, from the Office of the Surgeon-General, and No. 7,175, of 7th September 1875, in continuation of the same, I have the honor to report on the experimental use of gurjun oil in leprosy in the Salem District.

2. Except in institutions specially set apart for the purpose, and where the degree of comfort and the diet and indulgences allowed are sufficient to render the place a pleasant residence, it is almost impossible to induce lepers (amongst the poorer classes especially) to remain sufficiently long under treatment to permit of satisfactory results being obtained, or fair inferences drawn from any specific mode of treatment.

3. On receipt of the circulars above named, I prepared a form in which to keep a record of the proposed mode of treatment, and forwarded it to all District Subordinates for guidance and future report; but on calling in the return a short time since, I find but two cases have been treated, *viz.*, one at Kistnagerri and one at Tripatore (record attached).

4. In the jail there happened to be two lepers, and they were at once placed under treatment, with what result will appear from the record attached.

5. In the town of Salem I requested the Municipality to erect a small shed, adjacent to the dispensary, for experimental purposes, a request which was at once complied with; but I regret to say it has been much less used than I had hoped and expected. A few persons were induced to come, but with two exceptions they left after a very short stay. The record of those two cases which have been under treatment for a considerable period is appended.

6. In conclusion I have only to add that the number of cases is insufficient for any very confident opinion to be arrived at; but on the whole I regard the experiment as, up to a certain point, successful; but the treatment is of such a nature as can only be carried on satisfactorily in a special hospital or with people of a better class than lepers generally are, and who have the intelligence and determination necessary for carrying it out thoroughly.

CENTRAL JAIL, SALEM.
Table of Lepers treated with Gurjun Oil.

Name.	Age.	Hereditary or not.	Duration.	Admitted under Treatment.	Condition and General History.
Vurdun ...	50	Not.	5 or 6 years.	27th April 1875.	Ulceration of all the extremities. Skin thickened generally. Sides of the ears enlarged. Numbness of hands and feet. Secretions normal; condition weakly. The ulceration and thickening decidedly improved under treatment, but the numbness remained unaltered; he, however, grew weaker, and died at 11 P.M. on 16th June 1875 from exhaustion.
Rama Gunden.	50	Not.	2 years ...	27th April 1875.	Covered with whitish somewhat raised patches, which began about the waist and extended upwards and downwards. Increased sensation which he calls "pain and itching," probably what we should call tingling. General health not affected. Secretion normal. No swelling of hands and feet, but the ears slightly enlarged. Special senses not affected. 19th June.—Blotches on the lower extremities decidedly less. Trunk not much changed, and troublesome from the tingling pains. 7th November.—The internal administration has been irregular owing to want of pure oil, but externally it has been regularly used. Now the thickening has disappeared. The blotches on the lower extremities are scarcely visible, and sensibility of skin normal. General health improved.

November 1875.

(Signed) R. PEARSE,
Zillah Surgeon.

CIVIL DISPENSARY, SALEM.
Table of Lepers treated with Gurjun Oil.

Name.	Age.	Hereditary or not.	Duration.	Admitted under Treatment.	Condition and General History.
Caruppen ...	30	Not.	4 years ...	20th May 1875.	Commenced four years ago with numbness in the calf of left leg; a month afterwards numbness in the corresponding part of the right leg set in, and gradually anaesthesia of the whole body supervened with blackening of the nose and ears, and cracks in the palms of the hands and soles of the feet, emitting a watery discharge. Within the last four months papular eruptions have broken out all over the body accompanied by great itching. There is slight contraction of the last joints of the fingers. 10th June.—Papular eruptions and itching gradually decreased under treatment, and have now entirely disappeared. Other symptoms remain the same. 7th July.—There has not been any change since last report. Took leave to go and see a sick relative in his village, and has not returned.

Table of Lepers treated with Gurjun Oil—(Continued).

Name.	Age.	Hereditary or not.	Duration.	Admitted under Treatment.	Condition and General History.
Moothoosamy.	50	Not.	1 year ...	20th May 1875.	<p>A year ago had numbness of the feet. Three months ago the skin became discolored in various parts of the body, and now there is ulceration of the big toes and of the right leg near the ankle; anæsthesia of skin about the discolored parts, especially the legs and arms. Lobes of the ear slightly thickened.</p> <p>30th May.—Ulcer near the ankle extending. Skin beyond the ulcer to the extent of 4 inches both above and below cracked.</p> <p>10th June.—Ulcers in the toes healing. That over the ankle healing on one side and extending on the other. Some of the discolored patches disappearing.</p> <p>25th June.—Has some feeling about the legs and arms. Ulcers in the toes healed. Fresh cracks about the ankle. Some of the old ones healed. Patches about the body the same, but the feeling in them said to be on the increase.</p> <p>15th July.—A good deal of watery discharge from the cracks in the leg; sensation much improved. Other symptoms remain the same.</p> <p>25th July.—All the cracks healed. No watery discharge. There is a small ulcer on the back of the right leg. Patches above described changing color and becoming more natural; states he feels it where these parts are pinched. Itching is better.</p>

November 1875.

(Signed) R. PEARSE,
Zillah Surgeon.

Case of Leprosy treated with Gurjun Balsam at Dispensary, Kristnagherry.

Name.	Age.	Whether hereditary or not.	Duration up to date of Admission.	Date when placed under Treatment.	Condition on Admission and Previous History.
Sooben... ..	40	Not hereditary.	4 years ...	17th July 1875.	<p>Patient states that about four years ago he noticed that certain parts of his skin had a lighter color than the rest of his body; these patches gradually increased in size, and were partially insensible to touch; his face and feet then became oedematous. On admission his fingers, toes, alæ of the nose, and lobes of his ears were thickened, the three outer toes of the right leg being ulcerated; the feet were swollen and presented a shining appearance; pain complained of when walking; general health fair.</p> <p>August 6th.—Ulceration of the toes quite healed; tubercular swellings diminished; skin looking healthier.</p> <p>August 26th.—Feet still shining; swelling less; patient can walk better; the discolored patches of skin remain much the same; the swellings about the face have almost disappeared.</p> <p>September 19th.—Much improved. Not seen since.</p>

(Signed) P. CRUMMEY,
Local Fund Dispensary, Kristnagherry.

Case of Syda Bee, female, aged 45, Mussulmanee.

Name.	Age.	Whether hereditary or not.	Duration up to date of Admission.	Date when placed under Treatment.	Condition on Admission and Previous History.
Syda Bee ...	45	Hereditary ...	5 years ...	14th July 1875	<p><i>Condition on Admission.</i>—On admission patient had circumscribed leprous patches, situated respectively on the nates, middle of right thigh, upper part of left leg, anterior aspect; the affected parts presented a glistening appearance, and loss of sensation was complained of; each patch was circumscribed by a red line; numbness of the fingers and toes also complained of; contraction of ring finger, left hand, at second phalanx.</p> <p><i>Previous History.</i>—States that five years ago when at Madras, about eight days after her arrival there, the following symptoms manifested themselves, viz., a burning sensation in the soles of the feet and palms of the hands; subsequently numbness of these parts were experienced. About six months after her arrival there a blister formed in the ball of the right great toe, which on bursting and from neglect resulted in an ulcer which had healed by treatment. States that a year ago the present patches had made their appearance.</p> <p><i>Treatment.</i>—Gurjun oil and lime-water (1 to 3) to be rubbed externally, and another mixture of gurjun oil and lime-water equal parts given for internal use.</p> <p>In my opinion the loss of sensation in some of the affected parts was partially restored, but the disease failed to be thoroughly eradicated as seen by the results of the treatment.</p>

TRIPATORE,
29th November 1875.

(Signed) F. F. CLARKE,
Passed Hospital Apprentice.

Report on the treatment of Leprosy by Gurjun Oil in H. M.'s 3rd Regiment
P.L.I. at Secunderabad.

Last year a number of cases of leprosy which had occurred in this regiment were published in "A report on certain forms of skin diseases observed in the Madras Presidency." Several of those cases and a few others, eight altogether, have been treated with gurjun oil after Surgeon-Major Dougall's method; an abstract of them is given below. In all the cases gurjun oil was discontinued from the 31st March to the 23rd May 1875, while it was out of stock; and during a part of December 1874 and January 1875 the supply was limited, and cocoanut oil was used instead as an external application. The results of gurjun oil treatment in the eight cases reported may be stated thus in general terms:—

Improved	...	...	...	...	...	...	...	6
At stand still	...	...	...	...	...	...	...	1
Worse	...	...	...	...	...	...	...	1
								—
Total								8

It may be mentioned that burning pain at the arms, especially during defæcation, was complained of by several patients who took gurjun oil. Looseness of the teeth and bleeding from the gums were also attributed by some to the use of this remedy. In one case (not reported here) gurjun oil, even in very small doses, always produced pain in the rectum and bloody evacuations. A specular examination revealed small superficial ulcers studding the rectal mucous membrane; but no treatment was of avail to cure them until the gurjun oil had been discontinued, when a few silver nitrate or alum injections were sufficient. On resuming the oil the symptoms recurred, and it had finally to be discontinued internally.

Case I.—Naique Kistniah, a well-developed and healthy-looking man, aged 34, began gurjun oil on the 23rd July 1874. His state was then as follows:—There was a pale reddish patch, two or three inches in diameter, with a very irregular margin, and completely anæsthetic, situated on the back of his right forearm, just below the elbow. Some numbness also existed in the sole of his right foot, which was covered with small spots of dark pigmentation.

November 1874.—There is a circle of pale colored eruption round the prepuce, and he complains of burning pain in the part. A number of small whitish spots have appeared on his left leg. Complains of loss of taste.

April 1875.—Condition generally improved. Discharged, as he wants to go on furlough.

September 1875.—Has lately returned from furlough, and is better. Sensation is partly restored, and eruption has somewhat diminished.

Case II.—Private Rungasawmy, aged 36, a weakly individual, was admitted for leprosy on the 22nd July 1874, and put on gurjun oil treatment. He then had an eruption of palish patches upon the inner side of his left foot and ankle, with anæsthesia of the part. The patches were covered with a glistening, cracked epidermis, somewhat like a dried blister. Similar

patches of considerable extent existed over the outer and posterior aspect of both hip-joints, and upon the lower part of the loins, extending down upon the nates and into the fissure between them.

2nd September 1874.—Complains of loss of taste.

10th October 1874.—Looseness of teeth.

September 1875.—Eruption has disappeared from lower part of back, but there are still patches upon the outer aspect of hips and inner side of both ankles, extending up leg on left side. Numbness in and around all the patches. General health indifferent. Gets prolapsus ani whenever he eats highly-spiced food.

Case III.—Private Shaik Cassim, aged 35, was admitted on the 18th July 1874. He then presented anæsthetic spots of small size and pale color on the inner sides of both ankles, and a few others scattered over the lower half of his back and on the left elbow. There was also a prominent, palish red, wheel-like patch on the left side of forehead. All the spots were partly anæsthetic.

10th October.—Tubercular spot on forehead slightly reduced. Fresh spot, about size of 4 Anna piece, on upper lip.

19th November.—Discharged to undergo imprisonment to which he was sentenced by court martial.

8th March 1875.—Re-admitted. Spot on forehead has become flattened and of a markedly red color, with irregular margin.

September 1875.—Spot on forehead has partly disappeared, but is still slightly anæsthetic: the one on lip is gone. There are still a few small, pale, slightly numb patches on inner sides of ankles, front of left leg, and left elbow and back.

Case IV.—Havildar Syed Hussain, aged 42, a stout fair man, was admitted on the 27th July 1874, with a faintly marked anæsthetic patch on inner side of left ankle. His father had leprosy.

September 1875.—The eruption is scarcely visible on the ankle, but numbness still exists. He has been suffering from non-inflammatory obstruction of left nasal duct for the past few months, and was transferred to the Eye Infirmary on 17th September.

Case V.—Private Ramasawmy, aged 34, a broad shouldered, muscular man, was admitted on 30th July 1874. His father had been a leper. He presented numerous large, irregular, deeply pigmented, squamous, anæsthetic patches, covering the nates and hips. There was anæsthesia in heel and inner side of sole of left foot. There were also leprosy patches on his back, between and over the scapulæ, extending up to the nape of the neck. The recent portions were of pale color, with a reddish tinge, and the older ones were deeply pigmented and wrinkled.

10th October 1874.—Looseness of teeth, and a little bleeding from gums.

21st November 1874.—There is a patch of the eruption on glans penis, and he passes urine through a fistulous passage (which opened a few days ago) just behind glans. The natural orifice admits only a small probe with some difficulty.

26th July 1875.—Abscess of left sublingual gland opened.

September 1875.—Eruption on buttocks is gradually disappearing, and there is now very little anæsthesia. On the back, there is only one patch remaining over left scapula. No. 9 or 10 bougie is frequently passed *per urethram*, and urine has ceased to come through the fistula. General health good.

Case VI.—Private Thopanah, aged 36, was admitted on 25th September 1874, and placed on gurjun oil treatment. He then presented a psoriasis-like eruption on palm of left hand, well-marked in the natural furrows of the skin. He also complained of some degree of numbness in his left arm. Shortly after admission, pale, anæsthetic spots appeared on his cheeks and over his loins and buttocks. He also complained of pain in the upper incisor teeth which became loosened, and the gum around them and upper lip were tumified. In a few days a purulent sanious discharge began to ooze from around the teeth, and the swelling of the gums increased. The palate behind upper incisors became ulcerated. The affected portions of gum and palate were anæsthetic.

19th November 1875.—Fresh spots on prepuce and glans penis, and between scrotum and thigh. They are pale and numb, except those on the prepuce, which are hyperæsthetic.

2nd February 1875.—Improving. Discharge from gum and ulceration of palate are less.

September 1875.—Discharge from and swelling of gum very slight now. Ulceration healed. Eruption on buttocks almost gone. Eruption on face has disappeared and sensation there is normal. Slight squamous eruption remains on palm of left hand in natural furrows, and he is sensible of numbness in left hand and arm when he lifts a weight. Appetite and general health good, except that bowels are costive.

Case VII.—Private Nursimooloo, a fairly nourished man, aged 35, was admitted on 27th May 1875. A month previously, being in his usual good health, he noticed some swelling of the second toe of right foot, with pain followed by numbness. About ten days afterwards, he perceived patches of eruption on various other parts; they were painless and numb. On admission, the second toe of right foot was swollen and anæsthetic; and there were numb patches of thickened integument, mostly of pale color, on dorsum of same foot. Eruption was beginning to appear on left foot. There were two well-marked, irregular, reddish, raised anæsthetic patches of eruption on his right arm, and extensive patches of similar character on right buttock and back of right thigh, and one on palm of left hand. The alæ and tip of his nose were markedly thickened and numb.

23rd June 1875.—Nose has thickened still more, and there are a couple of squamous spots near its tip. Eruption on body is more scaly in appearance.

19th July.—Patches have increased in number and size all over the body. That on the inner and posterior aspect of right thigh is nearly as large as half a sheet of foolscap. They are all of a well-marked red color, and several are slightly ulcerated in parts. They are also more elevated than formerly, projecting about half an inch beyond the level of the sound skin. Toes of right foot and the left ear are thickened.

28th September.—Disease is not diminishing. There are numerous, red, tuberculous patches all over the body, especially on posterior aspect. Several of these present superficial ulcerations, some of them scabbed over. Tip of nose greatly thickened, and left ear less so. Appetite good, but feels weak.

Case VIII.—Naigue Abdool Rhymon, a stout man, aged 28, was admitted on 21st July 1875, presenting a palish, irregular, slightly raised anæsthetic patch on left cheek. No other eruption on any part of the body.

28th September.—Sensation restored, and patch of eruption diminished in size. Health good.

CHRISTOPHER McNALLY, M.D.,

SECUNDERABAD,
30th September 1875.

Surgeon, 3rd L.I.

From Surgeon-Major J. WILSON, Civil Surgeon, Trichinopoly, to the Deputy Surgeon-General, Indian Medical Department, Southern District, Malabar and Canara, dated Trichinopoly, 14th October 1875, No. 155.

In compliance with circular No. 5,656, dated 2nd September 1874, I have the honor to forward a brief report of twenty-six cases of leprosy treated by me since September 3rd, 1874. The first three cases were of a very trifling nature, and occurred in the persons of prisoners in the Central Jail. The other twenty-three were all severe, and were treated in the Municipal Hospital, where there is no special ward for leprosy, but merely an open shed; in consequence partly from suffering from cold and partly from their wandering habits many patients would not remain long enough to be benefited, but in almost every case in which they did remain the disease has been mitigated, but in no instance entirely removed. The treatment pursued was the same in all cases, *viz.*, equal parts of lime water and gurjun oil mixed. Of this a dessert-spoonful was taken internally twice a day, and externally an ointment composed of one part of oil and three parts of lime-water was rubbed in over the whole body for two hours daily in the morning, and at midday a bath. The diet was the ordinary full diet, with 4 oz. of meat three times a week and three pints of buttermilk daily. There can be no doubt that under this treatment the lepers improve, sensation returns in a greater or less degree, the ulcers heal, and the leonine look to a certain degree is removed. An old jail is at present being converted into a leper hospital, where these patients will be more comfortable than in the open shed in which they are at present. On the whole I am well satisfied with the results of the gurjun oil treatment, and the lepers state that they are uniformly benefited when they remain long enough to give the treatment a fair chance, but no real benefit is generally derived before three months of treatment.

1. Private No. 2,119 MAUREE, æt. 26, sentenced 10 years, confined 6 months.

September 3rd, 1874.—Numbness of limbs; no sensation in various parts of the body; whitish spots in various parts; commenced six months ago in the legs, and extended over the body; general health good, but does not sleep at night.

Gurjun oil treatment.

September 9th.—Numbness diminished. Continue medicine.

September 12th.—Copious eruption has been produced by the liniment. Omit liniment. Continue oil internally.

September 19th.—Numbness over the body better, but no change in the foot; discoloration not so distinct as before. Continue.

September 25th.—Numbness continues in the legs; swelling less.

September 29th.—Numbness.

October 6th.—Feeling returning in the backs of the thighs. Continue.

October 12th.—Sensation returning in the nates. Continue medicine.

November 12th.—Discharged relieved.

2. Private No. 2,853 PARIANADAN, æt. 55, sentenced 7 years, confined 2½ years.

September 7th, 1874.—Been in hospital for abscess, which is now cured; but has leprous spots on the body, legs and feet of 10 years' standing; the hands are also white and spotted; general health good, but the disease is spreading; numbness in the hands and feet.

Gurjun oil treatment.

Full diet.

9th.—No change. Continue.

15th.—No change except that itching round each leprous spot is diminished.

19th.—No numbness in his hands or feet. Continue medicine.

25th.—Numbness left the hands; no itching. Continue medicine.

29th.—No numbness; feels better. Continue medicine.

October 6th.—Natural color returning in the palms of the hand; black spots appearing in the middle of the white.

12th.—Black color returning in hands. Continue.

November 9th.—Discharged relieved.

3. Private No. 1,974 CAROOPAN, æt. 30, sentenced 4 years, confined 2 years and 8 months.

September 17th, 1874.—Admitted with leprous discoloration of palms of hands and soles of feet of 5 years' standing, which is spreading; no numbness. Usual treatment to be employed.

25th.—No itching over the body which he had formerly. Continue medicine.

29th.—Before had burning and itching on sole of foot and hands; now he has lost these sensations. Continue medicine.

October 6th.—Natural color returning in the palms of the hands. Continue.

12th.—Color returning in hands. Continue medicine.

November 9th.—Discharged relieved.

4. THADOOCONAN, æt. 55, born in Culpady.

Admitted 25th January 1875. Discharged 5th April 1875 of his own accord. Relieved. No case was taken.

Gurjun oil treatment.

Ordinary native full diet with meat thrice a week and buttermilk 3 pints extra.

5. RASAPUNDARAM, æt. 50, born in Matoomaroothoor.

Admitted 6th February 1875. Discharged 6th March 1875 of his own accord.

No appreciable benefit derived, as his stay was short. No case taken.

Treatment and diet as the above case.

6. SANTHAPAN, æt. 55, admitted 8th February 1875, born in Trichinopoly.

States that he had a brother who suffered from leprosy, but that no other member of his family had it. Admits having had a bubo after sexual intercourse prior to the disease. The disease discovered itself about four years ago by white patches over the body with diminished sensibility. This was followed a year ago by the appearance of ulcers on the hands and feet, and loss of sensation extending up the arms and thighs.

Present Condition.—Has no look of leprosy very distinct. Sensibility is increasing in the arms and legs, but still he is unable to do his work as a bookbinder and gilder. The ulcers have all healed under treatment, but not before the first phalanx of the second toe of the left foot had dropped off. Feet are deformed. Is improving under treatment.

7. *Leprosy.*

SAWMY PURDASY, æt. 22, admitted 17th February 1875. Discharged on the 25th February 1875 of his own accord. Born in Calicut.

No change in his person. Case not taken.

8. *Leprosy.*

PONNOOSAWMY, æt. 22, admitted 24th February 1875. Discharged 4th August 1875. Born in Madras.

This man states that none of his immediate relations ever had leprosy, but can give no account of his grandfather, &c. He states that seven or

eight years ago white patches appeared over his body, and that they were followed by thickening of the lobes of the ears, of the alæ of the nose, and a general characteristic look of leprosy. Before he came under treatment he suffered much from cracks and fissures of the hands and feet, anæsthesia of these parts and a papular eruption over the body causing intense itching.

Present condition.—States that his general appearance has much improved under treatment by gurjun oil; that the thickening of the various parts of his face has diminished; and the anæsthesia of the hands and feet passed away altogether, while that of the ears remains, but to a limited extent. There is still deformity of the feet, but sensation is perfect, and he states that he has benefited by the treatment. Left the hospital of his own accord. Relieved.

9. *Leprosy (scaly).*

ARMOOGHAM, æt. 30. Admitted 1st March 1875. Discharged 23rd September 1875. Born in Trichinopoly.

States that he can discover no trace of leprosy in his family as far back as he can go. The leprosy appeared some ten years ago suddenly in the form of loss of sensation in wrists and outer part of both thighs, followed in eight days by white patches over the body. These patches and the anæsthetic condition gradually increased upwards and downwards till nearly the whole body was involved. Cracks and ulcers of the feet showed themselves shortly after with contraction of the flexor tendons of the hands, especially of the two last fingers of either hand. Admits having had syphilis.

Present condition.—Has been under treatment for six months, during which the ulcers, cracks, &c., have all healed; loss of sensation exists only in the hands and feet. The contraction of the fingers is still seen, while the white patches are rapidly disappearing, he states, under treatment. No look of leprosy about the face except a slight thickening of the lobes of the ear. Left the hospital of his own accord. Relieved.

10. *Leprosy (anæsthetic).*

PERMALOO, æt. 40. Admitted 1st March 1875. Discharged on the 28th July 1875. Born in Madura.

The patient can discover no trace of leprosy in his family whatever. Has suffered from constitutional syphilis about ten years ago. While suffering from the effects of syphilis he was bitten on the second toe of the right foot by a snake termed two-headed snake. This bite was followed immediately by loss of sensation in both legs up to the knees, the breaking out of ulcers about the toes, ankles and soles of feet, with the gradual dropping off of his toes except the last of the right and the third and last toe of the left foot.

Has been under the gurjun treatment for leprous ulcers, which have now, however, all healed. States that sensation is gradually returning to

legs and feet, and that he is improving. No characteristic look of leprosy about the face or upper body. Left the hospital of his own accord. Relieved.

11. *Leprosy.*

VENKATACHELAM, æt. 35. Admitted 22nd March 1875. Discharged on the 31st March 1875 of his own accord. Born in Dindigul.

No improvement, as his stay was short. Case not taken.

12. *Leprosy.*

RUNGA PILLAY, æt. 50. Admitted 5th April 1875. Discharged 13th April 1875 of his own accord. Born in Trichinopoly.

No change, as he remained but only a few days. Case not taken.

13. *Leprosy.*

MOOTHIALOO, æt. 70. Born in Trichinopoly. Admitted 10th April 1875. Discharged 19th April 1875 of his own accord.

No change; remained only a few days. Case not taken.

14. *Leprosy (scaly).*

APPAVOO, æt. 60. Admitted 15th April 1875. Died on the 14th May 1875. Born in Tanjore.

No history of leprosy can be discovered on enquiry from the patient; admits that he had been suffering from constitutional syphilis prior to the appearance of the present disease. About three years ago ulcers developed themselves on the palms of his hands, which healed and broke out again. These were followed by gradual anæsthesia over the whole body; ulcers followed on the feet and hands, resulting in the destruction of two toes of each foot and the first phalanx of the first and second fingers of the right hand. No improvement. He was carried off by diarrhoea in spite of every means employed.

15. *Leprosy.*

SAWMYNATHEN, æt. 20. Born in Madura. Admitted 30th April 1875. Discharged 28th July 1875 of his own accord.

Relieved. No case taken.

16. *Leprosy.*

MOOTHOOVEEREN, æt. 27. Born in Cumbarasampett. Admitted 17th May 1875. Discharged 7th August 1875 of his own accord.
Relieved. No case taken.

17. *Leprosy.*

PALANGANDY, æt. 50. Born in Trichinopoly. Admitted 18th May 1875. Discharged 1st July 1875 of his own accord.
Has derived benefit from treatment. No case taken.

18. *Leprosy.*

RUNGASAWMY, æt. 25. Born in Trichinopoly. Admitted 14th June 1875. Discharged 17th August 1875 of his own accord.
Slight improvement since coming in. No case taken.

19. *Leprosy.*

FRANCIS, æt. 32. Born in Trichinopoly. Admitted 22nd June 1875. Discharged 10th August 1875 of his own accord.
Relieved. No case taken.

20. *Leprosy.*

ALLAGAPAN, æt. 25. Born in Trichinopoly. Admitted 22nd June 1875. Absconded 12th August 1875.
Not improved. No case taken.

21. *Leprosy.*

CHOWRYAPAN, æt. 35. Born in Trichinopoly. Admitted 23rd June 1875. Discharged 9th August 1875 of his own accord.
No change. Case not taken.

22. *Leprosy.*

CHAKARAPANY CHETTY, æt. 30. Born in Trichinopoly. Admitted 26th June 1875. Discharged 30th September 1875 of his own accord.
Relieved. No case taken.

23. *Leprosy.*

DAVASAGAYAM, æt. 40. Born in Chetty Coolam. Admitted 19th July 1875. Discharged 30th September 1875 of his own accord.
Relieved. No case taken.

24. *Leprosy (tubercular).*

THIROOVAMBALAM, æt. 25. Born in Vytheesvaran Covil. Admitted 28th August 1875.

States that he was by trade a bazaarman; none of his blood relations had ever suffered from leprosy; it first appeared in small isolated red patches slightly elevated above the surrounding skin; the skin had a shining appearance, itching when the body is perspiring; afterwards tubercles showed themselves in a minute form first and afterwards became nearly the size of marbles, and then disappeared. Anæsthesia of left arm, ulcerations about the hands, feet and lips; suffered formerly from venereal disease. The leprosy is of four years' standing.

Present condition.—Has a very characteristic look of the disease; lobes of ears thickened, alæ of nose and lower lip thickened, minute tubercles on the face, fingers and toes thick and short, matrix of nails either ulcerated or shrivelled; ulcers healed. Is improving under the treatment.

25. *Leprosy (anæsthetic).*

Mahry, æt. 23. Born in Poodoocottah. Admitted 1st September 1875.

States that he was a ryot; will not admit that any of his relatives ever have suffered from the disease, but it has slowly and steadily advanced on him for the last six years, appearing as small red spots on skin of variable dimensions and shape, and it has invaded almost the whole body, blisters breaking out which do not heal till after some months; anæsthesia of lower and upper extremities. He cannot bear the heat of the sun; has not suffered from venereal.

Present condition.—Has no look of leprosy about him, sensation returning in the limbs; one or two blisters form now and then, but do not persist, ending in disquamation; red spots about the body are said by the patient to be fading. He is evidently improving.

26. *Leprosy (tubercular).*

ACHOOTHAN AIR, æt. 45. Born in Palghaut. Admitted 5th September 1875.

This man, a ryot of Malayalam, about five years ago felt at the heel of right foot loss of sensation, which extended slowly all over the thigh, and then the left extremity suffered in the same manner; both the lower

extremities then commenced to swell so as to prevent his walking; tubercles then followed about the face, ulceration about the matrix of the nails, and shortening of the second toe of left foot. He was under treatment for two years at Calicut Leper Hospital; never suffered from venereal previously.

Present condition.—Has the characteristic look of leprosy; thickening of lobes of ears and alæ of nose have disappeared greatly; has tubercles on the face to a small degree; second and third toes of right foot ulcerated; swelling of the thighs subsided, sensation returning. States "that he has considerably improved under treatment; had it not been for the treatment, his condition would have been ten times worse than what it is at present."

TRICHINOPOLY,
14th October 1875.

(Signed) J. WILSON, Surgeon-Major,
Civil Surgeon.

APPENDIX.

PALLIPORT LAZARETTO.

ANNUAL REPORT.

During the official year just past 63 cases of leprosy were treated in Palliport Lazaretto: 35 were admitted, 20 left, 1 died, and 40 remain at the present date. A slight addition, costing $\frac{3}{4}$ Pie daily, was made in the dietary given in the Leper Hospital, Madras, which has been extended to the unfortunates at Palliport, who, since 1st of April 1875, get Annas 2 and $\frac{3}{4}$ Pie daily instead of 2 Annas as heretofore. This money allowance, although open to objection, and probably not so good as a well-regulated dietary, is far more popular; it enables the patients to vary their diet somewhat, gives them the pleasure of thinking they have money to spend, and occupies their minds with the question of what they will have for dinner. This is a more important question with those poor people who have so little pleasing to think of than we should at first sight suppose. I do not say this without ground, for the improved dietary selected by Dr. Johnston, costing 5 Annas a day, was most unpopular with those who considered themselves the victims of it, and the first two males placed on the diet ran away in consequence.

2. The question of a dietary was considered in close of 1872 by the Surgeon-General, and, by his orders, a contractor was advertised for, &c., when it was found that the diet which costs 2 Annas and 11 Pies in the Madras Asylum would cost in Palliport 3 Annas and 10 Pies, if it could be got at all. Dr. Balfour was probably willing at that time to recommend an increase of expenditure, provided diets could be got at Madras price, *viz.*, 2 Annas and 11 Pies per head; and I would suggest for favourable consideration whether, considering the dearness of food, it would not be desirable to increase the allowance to those poor people by a few pies a head, say 3 or 4, which would still keep the cost below that at Madras, which is, I believe, a cheaper plan.

3. All the patients in the Lazaretto, with the exception of one hopeless case, are under treatment more or less. I say more or less because there is great difficulty in getting them to accept any treatment, and they do their best to avoid it, giving the Hospital Assistant much trouble in consequence. Probably they think it is only useless trouble, and they seem reasonably contented as they are. At the present date 32 are under carbolic acid fumigation, 2 are on gurjun, 2 on chaulmogra, and 3 on cashewnut oils. Up to August last the lepers were fumigated in baskets one at a time, but in August a cage was made of mats and bamboos, covered with painted

cloth, by which 10 are fumigated together. They sit back to back, and are fumigated by two stills, one at each end of cage, from which carbolic acid with water is vaporized, and they breathe by bamboos protruding from the basket. This plan seems to answer very well; the patients make no complaints except as much as they object to treatment altogether, and the vapour seems to keep their skins comparatively clear, smooth, and glossy. So that I think they look the better of it; and since this treatment commenced in 1872 the Hospital Assistant reported to Dr. Johnston 6 patients, slight cases, as cured. As I visit the Lazaretto only occasionally, I did not see those people when they left, and cannot give any opinion on the subject. Even if the patients' skin seemed to be quite natural in appearance, I think it would be necessary for time to elapse before one could say they were cured. Two out of 32 patients undergoing fumigation are on Dr. Johnston's special dietary. One a girl, *æt.* 20, is on the diet since it was sanctioned, *viz.*, 1st July 1874. She has improved much in appearance, and has grown taller, but is still a leper. This is a case of anæsthetic leprosy, and the diet has had a fair trial as far as it has gone. The male selected at the same time with this girl, *viz.*, 1st July 1874, ran away on 9th August following, as he objected to lose his money allowance of 2 Annas a day. Another leper was placed on the diet in September 1874, who also ran away in September last. He probably would have done so sooner were it not that his health declined in a remarkable manner after he was placed on the diet. He became covered with sores, so that it required long and careful treatment to bring him round to comparative health, and he ran away as soon as he was able, *viz.*, in September last. When he ran away, although his sores were healed, and he was in tolerably good health, he was as much a leper as before. When the last boy ran away there was not any very suitable case in the Lazaretto to replace him, so a very slight case, a boy also, was placed on the diet; but when a more decided case was admitted, this boy was put on his 2 Annas again, and the new case, a boy, *æt.* 17, was chosen in December last for the extra diet, which he is still on; but except that he is improved in appearance and condition, there is no other change in him.

4. Four patients, two anæsthetic and tuberculous, were selected for cashewnut oil treatment in December 1874. In one of the latter the treatment had to be given up after three months, as he could not be got to submit to it. In the second case of tuberculous leprosy no improvement has been observed, and he is still under treatment. In the two anæsthetic patients sensation may be somewhat increased in the benumbed parts, and skin looks smoother, but I cannot say that any material change has taken place.

5. Gurjun oil treatment was commenced with two persons in January 1875. One of them left Lazaretto in March and the other was discharged for constant drunkenness in April. To replace the patient who left in March two others were placed on gurjun oil. One ran away in April, the other in May, as they did not like treatment. Another patient also left soon after treatment commenced, and there are now two patients on the oil, one since August and the other since January last, but no improvement has taken place in either.

6. Two patients commenced the chaulmogra oil treatment in November last, a male and female. The former ran away in December, the latter, together with a man who commenced with the oil in January last, are still on the treatment, but no material improvement has taken place as yet.

7. This is a deplorable account of the unwillingness of those poor people to do any thing for their improvement, most probably because they think it vain trouble. It is nearly the same with fumigation. The Hospital Assistant reports that they have to be dragged to the basket, but this seems not quite as unpopular as other modes of treatment. It is a vapour bath which they can enjoy gregariously, 10 at a time, and at their ease, and therefore, perhaps, do not dislike it quite so much as the other modes of treatment. I have no doubt, however, that if any painted conjurer, smeared with ashes and filth, was to appear among them with incantations, &c., and offers to cure, they would eagerly crowd round him and submit to very cruel burnings and scarifyings, and probably even part with any small store of pice which they may have collected.

8. The total expenditure during the year was as follows:—

					RS.	A.	P.
Dieting the patients	...	...	...	...	1,673	8	0
Half-yearly supplies	...	...	...	...	51	11	6
Contingencies	...	...	...	...	194	12	6

9. The buildings are in tolerably good order, but it will probably be necessary to execute some repairs to the roofs when rains begin.

PALLIPORT,
1st April 1876.

(Signed) W. DOYLE,
Civil Surgeon.