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(3) Initials of the Referencer R

MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No.	588	Press Mis.
Dated	15-6-	1887.

Not to be folded or roughly handled

15TH JUNE 1887, No. 588, REVENUE.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—the following letter from T. TARRANT, Esq., M.D., Officiating Surgeon-General, Her Majesty's Forces in Madras, to the Secretary to Government, Military Department, dated Ootacamund, 26th May 1887, No. 1433 :—

With reference to the order of Government noted in the margin, I have the honor to forward a report by the Principal Medical Officer, Burma Field Force, Mandalay, on the trials that have been made of liquid cinchona in the Upper Burma Field Force.

ENCLOSURES.

Report on Liquid Cinchona and the trials of this drug in the Upper Burma Field Force during the months of November and December 1886—January and February 1887.

Three hundred pounds of the liquid cinchona were received in the Field Medical Depot in October and November last and were distributed to 23 stations and posts and 13 reports have been received.

2. Medical officers were requested to test this drug as a prophylactic febrifuge and tonic, and their reports, as might be expected, are contradictory. There is, however, a consensus of opinion that the drug is useless as a prophylactic but beneficial as a tonic, while its power as a febrifuge is held by some—Surgeon-Major Barren, Surgeon Thomas—to be superior to quinine, while Surgeon-Major O'Connor holds it to be useless, Surgeon Banatrala of use in mild cases, and Surgeon-Major Peters useful when combined with quinine.

3. The general results of experiments so far are not in my opinion sufficient to establish the value of the drug in supersession of the other cinchona alkaloids, while its fluid form is always objectionable on field service.

4. I beg to forward seven of the reports I have received in original, and with regard to that of Surgeon-Major Barren, I am not disposed to attach to this officer's observations the importance they seem to warrant, because I consider that if the effects observed by him were solely due to the liquid cinchona, other officers who gave it a trial could hardly fail to have found similar results. It is not clear either that the effect produced was not due to the tonic action of the drug.

(Signed) G. FARRELL,
Dpty. Surgn.-Genl., Prinl. Medl. Officer,
Upper Burma Field Force.

From Surgeon H. E. BANATRALA, Medical Officer in charge, Majyirauk, to the Principal Medical Officer, Burma Field Force, Mandalay, dated 11th March 1887, No. 45.

With reference to your memorandum of 28th ultimo, calling for a report on the use of liquid cinchona in malarial fevers, &c., I have the honor to submit the following remarks :—

Cases.—The drug was used in 36 cases of malarial intermittent and in 2 cases of remittent fever, or a total of 38.

Doses.—It was prescribed in doses of half-a-drachm repeated three or four times a day during the intermissions in the first case, and in one-drachm doses during the remissions as well as the pyrexial stage in the second case.

Antiperiodic action.—Taking remittent fever first, it did not seem to produce any action on the time the exacerbation usually appeared; nor in the case of long continued intermittent fever did it seem to change the type of the fever, or put off the hour of attack. In very mild cases, however, the administration of the drug during the intermission cut off the fever at once. The practice I hold is to admit every man with even a single attack of fever into hospital and not to discharge him unless he has been a week free from fever. Under the ordinary treatment with "quinetum," the attacks invariably recur four or five times before giving in to the drug. These mild cases are the ones that seem to be specially benefited by the use of the drug under report.

Febrifuge action.—The drug has no power as a febrifuge. I have given it in the height of remittent as well as intermittent fevers without perceptibly reducing the temperature.

Tonic action disliked by patients.—It has never been tried here as a tonic. The first effect of the drug on administration is to produce a feeling of nausea and in some cases even sickness. In the case of British soldiers (only) it seems to produce relaxation of the bowels on first exhibiting it; but the effect is only temporary. In the two cases of remittent fever in natives where larger doses were given, the above action was not produced. Natives and Europeans dislike it however equally.

Conclusions.—The above is a very brief report, but I consider that the drug has not up to the present had a fair trial under me, as no notice of a report being called for was received when the drug was furnished.

Quinine was re-substituted for it in my first trials with it when it failed as an antipyretic in remittent fever. I am pushing the doses, however, and giving it further trials, and hope to submit a fuller report shortly.

The conclusions I have arrived at with regard to its use up to the present are—

1. In mild cases of recent intermittent fevers it acts very favorably; not so, however, in the long continued ones.
2. In remittent fever it seems useless.
3. It is inferior in its action to quinine, but superior to the cinchona alkaloids.
4. Its nauseating properties are an insuperable objection to its long continued use.

From Surgeon H. E. BANATRALA, Medical Officer in charge, Majyirank, to the Principal Medical Officer, Burma Field Force, Mandalay, dated 29th April 1887, No. 94.

In continuation of my No. 45, dated the 11th ultimo, giving my report on the use of liquid extract of cinchona in malarial fevers, I have the honor to furnish the following additional report on the subject.

Cases.—The admissions during the period allowed of my testing the value of the drug on one British soldier and ten sepoys only. Out of these one was a case of remittent fever (a sepoy); all the others were cases of intermittent malarial fever of various types.

Doses.—One-drachm doses were prescribed in all cases as it appeared to me that half-drachm doses given three times a day were not strong enough to produce any marked effect.

Action in (I) remittent fever.—Taking remittent fever first it seemed to have—

- (a) No antipyretic action whatever, although prescribed at intervals of one hour. The temperature continued to increase during the exhibition of the drug.
- (b) It had no antiperiodic action either.

(II) Intermittent Fever.—In no marked case of intermittent fever did it change the type of the fever or exhibit any antiperiodic action. In very mild cases only did it seem to cut short the fever.

Tolerance.—The drug was well borne by patients, a toleration seeming to be established after a few days.

The conclusions I have arrived at after this fresh trial of the drug coincide in the main with those mentioned in my previous report.

From Surgeon W. F. THOMAS, 17th Regiment, Madras Native Infantry, dated Nagabin, 4th March 1887.

A report of my experience of the use of Extract Cinchona Liquidum.

I. Its therapeutic action of malarial fevers.—I have used it in various forms of malarial fevers and in neuralgia of the 5th nerve due to malarial poison, and I have found it to answer very well. And in order to assist the action of this drug I have administered emetics, in some cases, with the most happy results. It possesses most marked influence on the various forms of malarial fevers, curing the diseases quickly and certainly.

II. Its potency to check the attacks of ague.—It subdues intermittent fevers and is equal to quinine in ague. It possesses very strong antiperiodic properties; and I consider it even superior to quinine in ague, and is more efficacious in the quartan type, and in obstinate cases it succeeds better. I also consider it superior as a prophylactic.

III. Its power as a febrifuge.—It is useless to give quinine after a "fit" of ague has commenced as a preventative to elevation of temperature, while in such cases extract cinchona liquidum can be given to reduce the temperature. As a general febrifuge it is an efficacious remedy. To reduce temperature large doses of quinine must be given, and even then, in many cases, the depression is but slight, about half a degree, and this is only a temporary reduction of temperature, while extract cinchona liquidum produces a fair fall and is permanent. If body temperature is a factor in the condition of the pulse, then by the administration of quinine

there is a loss of force with an increase in the frequency of the pulse. There is no loss of force by the administration of extract cinchona liquidum and the pulse is more regular.

IV. As a tonic.—It possesses a bitter taste; is a tonic and promotes the appetite; it sharpens the appetite and assists digestion, particularly in the case of weakly subjects. It is a good nervine tonic in debility with nervous irritability.

V. How liked by the men.—There is no accounting for "taste;" but on account of the more marked physiological symptoms and toxic effect of quinine, the men under my medical charge prefer the extract cinchona liquidum to quinine.

VI. General remarks.—As an antiseptic it destroys septic germs, and so is good for arresting putrefaction when applied locally. It is a good local application in foul, indolent, sloughing ulcers.

It possesses anthelmintic properties, especially for ascarides.

I may here remark that some of my best recoveries from ague have been produced by administering the following:—

R	Extract Cinch. Liq.	...	...	...	℞xxx.
	Pot. Iod.	...	...	...	grs. iii.
	Aque Camph or Aque Menth. Pip	...	...	...	ʒi.
					ft.
					t.d.

What the *modus operandi* is I cannot, at present, venture to state. I would strongly suggest that the above prescription be given a fair trial, especially in obstinate cases of ague.

Taking into consideration the small quantity needed (bulk for bulk), the good effects of the drug, in some of its therapeutical qualities equal to, in others superior to, quinine; the cheapness of the article compared to quinine; I see no reason why extract cinchona liquidum should not supersede quinine in general military therapeutics in diseases due to malarial poison.

From Surgeon C. BLACKWELL, in Medical charge, Kyaukse Post, to the Principal Medical Officer, Burma Field Force, Mandalay, dated 2nd December 1886, No. 74.

I have the honor to report, for your information, the prophylactic result of one pound of liquid extract of cinchona received for administration to the European detachment here.

2. I gave it each morning, from 22nd ultimo to the 1st instant, to twenty-five men of the S.L.L., and compared the result with twenty-five men who did not receive it. I found the previous admissions for fever among those who did not receive the liquid extract of cinchona were more numerous than among those who did receive it; yet during the period the preparation was given three of the latter number were admitted for fever and none of the former. The preparation caused some nausea and diarrhoea and for that reason I consider it unsuitable as a substitute for quinine. As a prophylactic its power seems to be much inferior to quinine, but the time of year (fever not being prevalent at present), the period of administration, and the number to whom it was given, are not sufficient to justify a decided opinion.

Reference—Memorandum from Assistant to Principal Medical Officer, Palace Mandalay, dated 28th February 1887, No. 95.

Report on experience of the use of Liquid Extract of Cinchona.

I regret that my report must be less detailed and the expressions of opinion less positive than I could have wished owing to limited experience in the use of this preparation.

I had never seen the liquid extract of cinchona until I joined this regiment (43rd G. L. I.) at Mogoke on 20th January 1887.

As to its power to avert attacks of ague I can say nothing. I have not used it as a prophylactic and its value could only be determined by comparative trials with other drugs.

2. In potency to check recurrence of ague, I consider it inferior to quinine, cinchonidine or to cinchona febrifuge.

3. It is an excellent tonic, and well suited for use in cases weakened and with impaired digestion after repeated attacks of ague.

4. It may be advantageously combined with dilute nitro-muriatic acid.

5. I have heard no complaints either as to unpleasantness in taste or (as frequently made about cinchona febrifuge) as to its causing gastric irritation. The men have undoubtedly a preference for quinine.

PYAUNG GYAUNG,
15th March 1887.

(Signed) K. M. DOWNIE, M.D.,
Surgeon-Major, 43rd G.L.I.

From Surgeon P. F. O'CONNOR, 18th Native Field Hospital in charge, to the Deputy Surgeon-General, Burma Field Force, dated Katha, 16th March 1887, No. 158.

With reference to your memorandum of the 28th ultimo, I have the honor to state that my experience of liquid extract of cinchona in the treatment of malarial fever of this district is, as a prophylactic, not to be relied on; as a febrifuge, perfectly useless; as a tonic, of some value but vastly inferior to iron and quinine. It is not objected to by the patients.

From Surgeon-Major C. T. PETERS, M.D., Senior Medical Officer, No. 14, Field Hospital.

Report on Liquid Cinchona.

Characters.—A dark brownish liquid, specific gravity about 1033, having a pleasant aromatic bitter taste; when mixed with water yields a copious flocculent precipitate which gives a rosy color on the addition of liquor ammonia in excess. Dilute sulphuric acid in excess only dissolves the precipitate slightly; dilute nitric acid, more so; while dilute hydrochloric acid nearly dissolves the whole of the precipitate.

Dose.—Thirty minims are said to be equivalent to about 2½ grains of quinine.

This drug has been tried in cases of malarial fevers in 30 minim doses given three times daily during the months of November, December, January and February, at a time when a severe form of remittent fever was prevalent. The patients, who came from the out-stations such as Zagabin, Lamaing, Tannyboo bridge and Zeebingale where severe forms of malarial fever were prevalent, were highly saturated with the malarial poisons and in some of whom even large doses of quinine did not produce any marked effect as an antiperiodic, consequently much cannot be said either for or against the efficacy of this preparation as an antiperiodic if it failed to arrest the fever.

During the past month, however, when the severe type of fever has not been prevalent and a prolonged trial has been given to the use of the liquid cinchona, the following facts have been observed.

A prolonged course of liquid cinchona is required to break off the periodicity of the febrile paroxysm. For instance in charts 1, 2 and 5 it will be observed that in spite of the daily administration of the liquid cinchona up to 90 minims the paroxysmal return of fever continued until a 10-grain dose of quinine was administered on the day of the expected paroxysm which succeeded in stopping the return of fever and the subsequent use of the liquid cinchona for another four or five days completed the cure.

The cases recorded are too few to come to any satisfactory conclusion as yet, especially as in no instance large doses of the liquid cinchona have been tried: for instance, if a 10-grain dose of quinine was indicated whether a 2-dram dose of the fluid would not have a similar effect, but as yet such large doses have not been tried on account of the bulk to be taken at a time.

As a tonic, however, it appears to be a most useful preparation, the taste being much pleasanter than either of cinchona alkaloid or the decoction of the cinchona bark; it is preferred by the patients, and I would urge the necessity of a larger quantity of this drug being indented for for use in the treatment of the milder forms of malarial fever; since during the time liquid cinchona has been used, there has been a large saving in the more expensive drug, sulphate of quinine, which should be reserved only in the severe forms of fevers when the temperature is persistently high and when large doses of quinine are indicated.

From Surgeon-Major W. BARREN, 25th Bombay Light Infantry, dated Mandalay, 23rd April 1887.

Liquid Cinchona, its therapeutic action.

The results of my experience as to the treatment of malarial fever, with liquid cinchona, during the period extending from the 18th November 1886 to the 31st December 1886, compel me to recommend this preparation as an extremely valuable prophylactic, antiperiodic, tonic and astringent.

2. In pursuance of orders from the Principal Medical Officer, Burma Field Force, I experimented at the onset with the healthy men, those not on the sick list, who were engaged in the various guard and escort duties that fall to the lot of soldiers on active field service; and the several observations I had made forced me to conclude that liquid cinchona was a most trustworthy prophylactic against malarial fevers. It is, I am obliged to admit, as far as I can judge by the results of my experiments, in its action, provided largish doses are given, as a preventative against attacks of fever, scarcely less inferior to quinine.

3. This statement of mine will, no doubt, be discredited, but I am certain that this very unexpected and surprising action of the liquid cinchona preparation can be obtained, without an atom of a doubt, provided the calomel-purgative plan of treatment be adopted, as an auxiliary remedy. Without its frequent help, quinine and the liquid cinchona will fail to rid the patient completely of fever, convalescence will be prolonged, and the spleen is liable to suffer.

4. From half to two grains of calomel should be given every 8th or 10th day to each, and every soldier whether he be predisposed or not to intermittent fever, an hour later, an ounce of castor oil, and twice on each of the following days, throughout the fever months, thirty drops of the liquid cinchona, say at 7 A.M. and at 5 P.M.

5. On the 18th of November 1886, the strength of the Native corps at Kyauksai was 183; on the 19th, 163; on the 20th, 153 and so on; the average number of duty-men to whom this new preparation was given each afternoon of every succeeding day, for a period of a week or thereabouts, was about 140. Of this number only five were admitted with ague during the time the experiment was continued on the duty-men. These five sick were on more than one former occasion in hospital with ague, prior to the introduction of the liquid cinchona treatment. It was noted at the time that the hot stage of the ague attacks was less severe and of shorter duration than when they were not under the full influence of the liquid cinchona and the calomel-purgative treatment combined.

6. On receipt of further supplies of this invaluable preparation, I used it freely and daily, in lieu of quinine, at the Kyauksai hospital, to which all the native sick from Yenren, Kume, Yekanijee, Thabadoong, Thanyetdaw, Ingone, &c., were transferred for further treatment. The transfers were ill chiefly with ague, the quotidian variety. The several stages of this disease, in every case sent to me, were very pronounced and distinct. These transfers were made and permitted, because the men, although treated at the several posts, were not benefited by treatment with quinine. The attacks as a rule came on between the hours of 1 P.M. and 5 P.M. and the patients (the transfers), the majority, were very weak and more or less emaciated; the thin wasted condition of the muscles of several being the result of overwork, repeated attacks of ague, and to the food supplied to them being more or less damaged by ruin. A few of the sick were nothing more nor less than "bags of bones," with bed sores as complications. The transfers from the Kume district came in in fortnightly or monthly batches of 25 or 40 or thereabouts. The men were from all accounts treated with daily doses of quinine prior to their arrival at Kyauksai, while on the sick list they seldom or never had an aperient given them.

7. The dietary management of the hospitals, where these men had served during the most trying months of the year, was imperfect, perhaps neglected, not purposely, but from unavoidable circumstances. Hence chiefly their very emaciated condition.

8. The line of treatment systematically practised at the *Kyauksai Native Hospital* was as follows:—

Firstly.—Proper regard was always paid to the patients' nutrition, a warm ration was given every morning between 6 and 7 to every man under treatment, chiefly to the transfers, who formed the majority of the admissions. Night nursing was not neglected in the very serious cases. Rice well boiled in water salted makes an excellent sustaining morning and night ration, provided the water too is swallowed, especially in places where milk cannot be procured. Warm boiled rice sweetened with sugar and mixed with a small quantity of ghee should be given to the convalescents. These ingredients can be supplied by the men themselves out of their daily rations.

Secondly.—A mild aperient on the calomel-purgative plan was administered to the fever patient the day following his arrival at Kyauksai, even when constipation was not a prominent symptom.

Thirdly.—Each and every patient (fever and dysenteric) had thirty drops of the liquid cinchona given him daily at 7 A.M. at noon and at 5 P.M. Diaphoretics were prescribed only to very special cases.

9. The admissions were selected personally by me. That is I never entered a man on the sick list unless I had seen him myself ill with fever.

10. It has been remarked, and rightly too, by some of the senior Surgeons on service in Burma, that quinine as a rule fails in its action as a prophylactic and as an antiperiodic, in cases where purgatives are not given previous to the administration of quinine. This same theory holds good when liquid cinchona is made use of in place of quinine. Purge your patient and the liquid cinchona, if given frequently, say three or four times in the 24 hours, will act most efficiently.

11. From the 18th of November to the 31st December 1886, the liquid cinchona treatment was systematically adhered to, except during the short periods I had been absent from Kyauksai, while serving with an expeditionary force.

12. Of the 194 cases of ague that had been treated chiefly with liquid cinchona from the 18th November 1886 to the 31st December 1886, there were 12 transfers to No. 14 Field Hospital, Mandalay, no deaths; 171 were discharged cured to duty; there were about 30 readmissions; and 9.3 was the average number of days each fever patient was under treatment.

13. From the day on which the regiment had disembarked at Rangoon up to the 19th of November 1886, there were 286 admissions with ague and these were treated with quinine.

seventeen of these were sent to Mandalay for further treatment, 10.6 is the average number of days each of the quinine cases remained on the sick list. There were 4 deaths as follows :—

- (1) Regimental number 1937 was admitted on 28th June 1886 by Surgeon Blackwell and treated by him, and died on 14th July 1886.
- (2) Regimental number 2536 was transferred from Yewin or Kume on 11th October 1886 in an emaciated condition, and died on 22nd October 1886.
- (3) Regimental number 2278 was admitted by me on 10th November 1886 and treated by me. He died from the effects of jaundice on 14th November 1886.
- (4) Regimental number 2391 was transferred from Telukso with complete paralysis of the lower extremities and of the bladder on 16th November 1886, and died on 6th December 1886.

14. Liquid cinchona alone or in combination is a good tonic. I invariably prescribe it in cough mixtures.

15. In cases of diarrhoea and dysentery it serves as a fair astringent.

16. The men have not to my knowledge objected to its use. Several of the sepoys I know prefer it to quinine, and it is decidedly far more agreeable to the taste than several of the drugs that are supplied to the Native Hospitals, Civil and Military.

17. It produces neither nausea nor diarrhoea, and patients even when fully under its influence have never complained of deafness, &c.

18. The sepoys of the 25th Bombay Light Infantry have taken kindly to the remedy, and several have repeatedly asked for it, because they consider it an excellent remedy for fever.

No. 3254, Military.

Transferred to the Revenue Department, with reference to paragraph 3 of O.G. in that department, No. 718, dated 17th August 1886.

OOTACAMUND, (Signed) A. KENNEY-HERBERT, Brigdr.-Genl.,
3rd June 1887. Secretary to Government.

ORDER—dated 15th June 1887, No. 588, Revenue.

Miscellaneous.

Communicated to the Director of Government Cinchona Plantations and the Surgeon-General with the Government.

(True Extract.)

(Signed) J. F. PRICE,
Ag. Secretary to Government.

To the Government Botanist and Director of Government Cinchona Plantations,
,, the Surgeon-General with the Government.

Edw. W. H. French.

50 Copies.

Gobt. of {1887} Madras.
REVENUE.

Encl.

G.O., 15th June 1887, No. 588.

JUNE.

Liquid Cinchona.

Report on the trials that have been made of — in the Upper Burma Field Force, communicated to the Director of Government Cinchona Plantations and the Surgeon-General with the Government.

Submitted that this be placed

RECORD OF TEMPERATURE, PULSE AND RESPIRATION.

Comps 2500. L. L. Regimental No. 1738. Rank and Name *Pvt. Chandrojee Chodlay* Age *27 years* Service *19 years* Station *Mumbai City*.

Disease	Date of attack	1. 2.	1887, Result	Date of recd	3. 2	1887, Case Book No.	Folio

[illegible]

Signature _____

Trunk	Name	Corps	Disease	Period
51	John Mack Graham	2nd Regt. C. I. S.	Light	From 20 February 57 to 2 March 57

[illegible]

UNITED NATIONS

1. *Phragmites*
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Corps	Rank and Name	<u>Age</u>	Service	Station
25 th Regt.	Pt. Gopal Kaur	190	1897	Mundlay
Disease	Fever	Date of attack 10-2-	1897	Result Folio

05105

[illegible]

P. T. Carson
Signature.

Birth	March 1896
Name	David Lee Barry
Company	Co. A. C. 1
Disease	Measles
Period	From 1st February 97 to 6th March 97

Printed
 and
 Sold
 by
 J. D. BARNES,
 101 N. 3rd St.,
 Philadelphia, Pa.
 1880.

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DRILL AND MARCH TROOP.

[illegible]

RECORD OF TEMPERATURE, PULSE AND RESPIRATION.

Corps <i>25th Regt.</i>	Regimental No. <i>2628</i>	Rank and Name <i>Pt. Ingomar Ling</i>	Age <i>24</i> years	Service Station <i>Apurudalay</i>
Disease <i>Aque</i>	Date of attack <i>22. 2. 1887</i>	Result <i>100</i>	Date of results <i>1</i>	Case Book No. <i>Folio</i>

Folio

[illegible]

C. J. Reed
Tanganyika
Signature.

Enclosures

Report on liquid Cinchona and the trials of this drug in the Upper Burma Field Force during the months of November and December 1886 January and February 1887.

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4. The general results of experiments so far are not in my opinion sufficient to establish the value of the drug in supersession of the other Cinchona Alkaloids while its fluid form is always objectionable on field service.

5. I beg to forward 7 of the reports I have received in original and with regard to that of

Surgeon Major

ARMY HOSPITAL FORM No. 95.
BRITISH AND NATIVE TROOPS.
CLINICAL CHART.
RECORD.
TEMPERATURE, PULSE AND RESPIRATION.
Name *Mc*
Rank *Private*
Company *25*
Disease *dyspe*
Period { From *23* To *27*
to *3* months of

23 Nov 1887

Surgeon Major

23 Nov 1887

European Major Barron I am not disposed to attach
to this officer's observations the importance they
seem to warrant because I consider that if the
effects observed by him were solely due to the
liquid Cinchona, other officers who gave it a trial
could hardly fail to have found similar results.
It is not clear either that the effect produced was
not due to the tonic action of the drug.

C. O. Farwell

Deputy Surgeon General,
Principal Medical Officer,
Upper Burma Field Force.

Majjima 11
11 March 1887

No 45

From

The Medical Officer
in charge - Majjima

To

The Principal Medical Officer
B. F. F. Maudalay.

Sir,

With reference to your memo of 28
Oct: calling for a report on the use of liquid
Quinine in malarial fevers, I have the honor
to submit the following remarks.

Cases.

The drug was used in 36 cases of
malarial intermittent & in 2 cases of remittent
fever: or a total of 38.

Doses.

It was prescribed in doses of 3p, repeated
3 or 4 times a day during the intermissions in
the 1st case; & in one drachm doses during the re-
missions as well as the pyrexial stage in the
2nd case.

Antiperiodic
action

Taking remittent fever first, it did not
seem to produce any action on the time the ex-
acerbation usually appears; nor in the case of
long continued intermittent fever did it seem to change
the type of the fever, or put off the hour of attack.

In

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Prints

No 3555 1887

In many mild cases however, the administration of the drug during the intermission cut off the fever at once. The practice I hold is to admit every man with even a single attack of fever into hospital not to discharge him unless he has been a week free from fever. Under the ordinary treatment with 'Quinetani', the attack invariably recurred 4 or 5 times before giving up to the drug. These mild cases are the ones that seem to be specially benefited by the use of the drug under report.

The drug has no power as a febrifuge. I have given it in the height of remittent as well as in the most violent paroxysms without perceptibly reducing the temperature.

Febrifuge
action

It has never been tried here as a tonic.

The first effect of the drug in administration is to produce a feeling of nausea & in some cases even sickness. In the case of British soldiers (only) it seems to produce relaxation of the bowels on first exhibiting it; but the effect is only temporary.

Tonic action
Disliked by
patients

In the 2 cases of remittent fever in natives who larger doses were given, the above action was not produced - natives & Europeans dislike it however equally.

The above is a very brief report, but concludes that the drug has not up to the present

1384
had a fair trial under me, as no notice of a report being called for was received when the drug was furnished.

Quinine was re-substituted for it in my first trials with it when it failed as an antipyretic in remittent fever. I am pushing the doses however & giving it further trials & hope to submit a fuller report shortly.

The conclusions I have arrived at with regard to its use up to the present are: -

1. In mild cases of recent intermittent fevers it acts very favourably; not so however in the long continued ones.
2. In remittent fever it seems useless.
3. It is inferior in its action to quinine, but superior to the Cinchona alkaloids.
4. Its nauseating properties are an insuperable objection to its long continued use -

I have the honor to be
Sir
Your most obedient servant.
H. E. Barnard
Surgeon in charge
1384

3
Majjirau
29 April 1887

N^o 944

From

The Medical Officer
Majjirau

To

The Principal Medical Officer
B. F. F. Mandakay

Sir,

In continuation of my N^o 45 dated
the 11th ultimo giving my report on the use
of Quin-Extract of Cinchona in malarial fevers I
have the honor to furnish the following ad-
ditional report on the subject.

Cases

The admissions during the period allowed
of my testing the value of the drug on 1
British soldier and 10 sepoys only. Out of
these one was a case of remittent fever (a
sepooy); all the others were cases of in-
termittent malarial fever of various types.

Doses

One-drachm doses were prescribed in
all cases as it appeared to me that half-
drachm doses given 3 times a day were not
strong enough to produce any marked effect.

Action in

I Remittent Fevers

Taking remittent fever first it seemed
to have

(a) no antipyretic action whatever, although
prescribed at intervals of one hour.

The temperature continued to increase
during the exhibition of the drug.

(b) It had no antiperiodic action either.

II Intermittent
Fevers

In no marked case of intermittent fever
did

did it change the type of the fever or exhibit any antiperiodic action. In very mild cases only did it seem to cut short the fever.

The drug was well borne by patients, a toleration seeming to be established after a few days.

The conclusions I have arrived at after this fresh trial of the drug coincide in the main with those mentioned in my previous reports.

I have the honor to be
Sir,
Your most obedt. servant
H. S. Anatra
Surgeon
M.D.

1887

A report of my experience of the use of Ext. Cinch. Liquidum:

I. Its Therapeutic action of Malarial Fevers:

I have used it in various forms of Malarial Fevers and in Neuralgia of the 5th Nerve due to Malarial poison, and I have found it to answer very well. And in order to assist the action of this drug I have administered Emetics, in some cases, with the most happy results. It possesses most marked influence on the various forms of Malarial Fevers, curing the disease quickly and certainly.

II. Its potency to check the attacks of Ague:

It subdues Intermittent Fevers, and is equal to quinine in Ague. It possesses very strong Antiperiodic properties, and I consider it even superior to quinine in Ague, it is more efficacious in the Quartan type, and in obstinate cases it succeeds better. I also consider it superior as a prophylactic.

III. Its power as a Febrifuge:

It is useful to give quinine after a "fit" of Ague has commenced as a preventative to elevation of temperature — while in such cases Ext. Cinch. Lig. can be given to reduce the temperature. As a general febrifuge it is an efficacious remedy. To reduce temperature large doses of quinine must be given, — and even then — in many cases the depression is but slight, about $\frac{1}{2}$ a degree, — this is only a temporary reduction of temperature.

M.D. 3558/87

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While Est: Cinch: Lig: produces a fair fall, and is permanent. If body temperature is a factor in the condition of the Pulse, then by the administration of Quinine there is a loss of force with an increase in the frequency of the pulse. There is no loss of force by the administration of Est: Cinch: Lig:, and the pulse is more regular.

IV. As a tonic:— It possesses a bitter taste; is a tonic, & promotes the appetite — it sharpens the appetite, and aids to digestion, particularly in the case of weakly subjects. It is a good nervous tonic in Debility with Nervous Irritability.

V. How liked by the men:— There is no accounting for "taste"; but on account of the more marked physiological symptoms and toxic effect of Quinine; the men under my medical charge prefer the Est: Cinch: Lig: to Quinine.

VI. General Remarks:— As an antiseptic it destroys septic germs, and so is good for arresting putrefaction when applied locally. It is a good local application in foul, indolent, Sloughing Ulcers.

It possesses Anthelmintic properties, especially for Ascarides.

I may here remark that some of my best recoveries from Ague have been produced by administering the following:—

Est: Cinch: Lig: — $\text{m} \overline{\text{xx}}$

Pot: Sod: — $\text{ss} \overline{\text{iii}}$

Aqua Camph:

Acid: Meas: Pot: — 3 I

What the *modus operandi* is I can not, at present, venture to state. I would strongly suggest that the above prescription be given a fair trial, especially in obstinate cases of Ague.

Taking into consideration the small quantity needed (bulk for bulk); the good effects of the drug — in some of its Therapeutical qualities equal to, in others superior to, Quinine; the cheapness of the article compared to Quinine; I see no reason why Est: Cinch: Lig: should not supersede Quinine in general Military Therapeutics in diseases due to Malarial poison.

Nagabie, U. Barmah
21st March 1887

M. J. Jones
Surgeon
17th Regt. M. I.

A report of the use of
Prof. Church's signature
19th Regt. No. 9

Print

ms 35589/87

ms 4577/87

1074. Reports 17/9/86
2 Dec 1886

Am
Super C Blackwell
R. T. Blackwell
The Principal and Officers
R. T. Blackwell

I have the honor to report
for your information the prophylactic
use of one form of the extract
of anchura acuta for administration
to the European detachment here.
I gave at each evening from
10.22.40 to the 1st of Dec to
each of the 100 of the S. L. I and
compared the results with the 25 in
the 1st of Dec. I found the
previous administration to have been
more effective than the 1st of Dec.
The extract of anchura acuta was
given to the 100 of the S. L. I and
the 25 in the 1st of Dec. I found the
previous administration to have been
more effective than the 1st of Dec.
The extract of anchura acuta was
given to the 100 of the S. L. I and
the 25 in the 1st of Dec. I found the
previous administration to have been
more effective than the 1st of Dec.

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No 95

Reference. Memoirs of the
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Report on the use of
Liquid extract of Cinchona

I regret that my report must be
so detailed and the expression
of opinion less positive. I
could have wished, owing to limited
experience in the use of this preparation,
that I had never seen the liquid
extract of cinchona until I joined
this regiment (23rd Regt. I. I.) at Mogok
on 20th January 1887.

As to its power in the attack
of ague I am very doubtful. I
have not used it as a prophylactic
and its value could only be de-
termined by comparative trials
with other remedies.

2. In potency to check recurrence of
ague I consider it inferior to
quinine, cinchonidin, or cinchona
febrifuge.

3. It is an expensive remedy, and
well suited for use in cases
weakness and impaired digestion
after repeated attacks of ague.

It may be advantageously
combined with dilute nitric acid.

the report of the

I have heard no complaints either as to unpleasantness in taste or as frequently made about cinchona febrifuge as to its causing gastric irritation. The men have used only a preparation for quinine.

Mr. Gordon M.D.
 Surgeon Major
 11th Bt. Coy. R. I.
 Pyming, Guyana
 16 March 1877

158 Katha 19th 11/4
 16 March 87

From Surgeon S. Fajourner
 10. R. & A. M.C.
 To The Deputy Surgeon General
 Burma Field Force

With reference to your memo of the 28th ult. I have the honor to state that my experience of liquid extract of Cinchona in the treatment of malarial fever of this district is:-
 as a prophylactic - not to be relied on
 " febrifuge - perfectly useless
 " tonic - of some value but greatly inferior to Iron & Quinine.
 It is not regarded so by the patients.

I have the honor to be
 Sir
 Your obedient servant
 S. Fajourner M.D. Surgeon
 10th Bt. Coy. R. I.

WB 3553/77

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 Rev (8778)

Report on Liquid Cinchona.

Character. . . A dark brownish liquid. Sp. gravity about 1.033; having a pleasant aromatic bitter taste. When mixed with water yields a copious flocculent precipitate which gives a rose colour on the addition of Reiger's ammoniac in excess. Dilute sulphuric acid in excess only dissolves the precipitate slightly. Dilute nitric acid does so. While dilute hydrochloric acid nearly dissolves the whole of the precipitate.

Dose. Thirty minims are said to be equivalent to about $2\frac{1}{2}$ grains of Quinine.

This drug has been tried in cases of Malarial fevers in 30 minim doses given three times daily during the months of November, December, January & February at a time when a severe form of Remittent fever was prevalent. The patients who came from the outstations such as Kagabiro - Lamang, Jany, his bridge and Zeebinga to where severe forms of Malarial fevers were prevalent, were highly saturated with the Malarial poison and in some of whom even large doses of Quinine did not produce any marked effect as an antiperiodic. Consequently much cannot be said either for or against the efficacy of this preparation as an antiperiodic. if it failed to arrest the fever.

During the past month however when the severe type of fever has not been prevalent and a prolonged time has

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has been given to the use of the Liquid Cinchona - the following facts have been observed.

A prolonged course of Liquid Cinchona is required to break off the periodicity of the febrile paroxysm. For instance in Chart 1. 2 & 5 it will be observed that in spite of the daily administration of the liquid Cinchona up to 70 minims the paroxysmal return of fever continued until a 10 grain dose of quinine was administered on the day of the expected paroxysm which succeeded in stopping the return of fever and the subsequent use of the liquid Cinchona for another 4 or 5 days completed the cure.

The cases recorded are too few to come to any satisfactory conclusion as yet, especially as in no instance large doses of the liquid Cinchona have been tried. For instance if a 10 grain dose of quinine was indicated whether a two drachm dose of the fluid would have a similar effect. but as yet such large doses have not been tried on account of the bulk to be taken at a time.

As a tonic however it appears to be a most useful preparation the taste being much pleasanter than either Cinchona alkaloid or the Decoction of Cinchona bark, it is preferred by the patient and I would urge the necessity of a larger quantity of this drug being indicated for use in the treatment of the milder forms of malarial fever, since during the time liquid Cinchona

Cinchona has been used there has been a large saving in the more expensive drug, Sulphate of Quinine, which should be reserved only in the severe forms of fever when the temperature is persistently high and when large doses of quinine are indicated.

J. T. Peters JMB
Surgeon Major.
Nov. 14. 91

Liquid Cinchona. its therapeutic action

The results of my experience as to the treatment of Malarial fever with liquid cinchona, during the period extending from the 18 November 1886 to the 31st December 1886, compel me to recommend this preparation as an extremely valuable prophylactic, antiperiodic, tonic and astringent.

In pursuance of orders from the P. M. O. Burmah Field Force, I experimented at the onset, with the healthy men — those not on the sick list — who were engaged in the various guard and escort duties that fall to the lot of soldiers on active field service; and the several observations I had made forced me to conclude that Liquid Cinchona was a most trustworthy prophylactic against malarial fevers. It is, I am obliged to admit, as far as I can judge by the results of my experiments, in its action, provided largish doses are given, as a

preventative against attacks of fever, scarcely less inferior, to quinine.

This statement of mine will no doubt be discredited, but I am certain that this very unexpected and surprising action of the liquid cinchona preparation can be obtained, without an atom of a doubt, provided the salome^l purgative plan of treatment be adopted as an auxiliary remedy. Without its frequent help, quinine and the liquid cinchona will fail to rid the patient completely of fever, convalescence will be prolonged, and the spleen is liable to suffer.

From half to two grains of salome^l should be given every 8th or 10th day to each and every soldier, whether he be pre-disposed ^{or not} to intermittent fever. An hour later, an ounce of castor oil, and twice on each of the following days, throughout the fever months, thirty drops of the liquid cinchona - say at 7 am and at 5 P.M.

On the 18 of November 1886, the strength of the native corps at Kiangkai.

Kiangkai was 183: on the 19th, 163, on the 20th, 153 and so on - the average number of duty-men to whom this new preparation was given each afternoon of every succeeding day, for a period of a week or thereabouts, was about 140. Of this number only 5 were admitted with ague during the time the experiment was continued on the duty-men. These five sick were on more than one former occasion in hospital with ague, prior to the introduction of the liquid cinchona treatment. It was noted at the time that the hot stage of the ague attacks was less severe and of shorter duration, than when they were not under the full influence of the liquid cinchona and the salome^l purgative treatment, combined.

On receipt of further supplies of this invaluable preparation, I used it freely and daily, in lieu of quinine, at the Kiangkai Hospital, to which all the native sick from Yewu, Kume, Yekangie, Theladong, Thangetolaw, Ingine &c were transferred for further treatment. The two hospitals were chiefly with

Ague - the quotidian variety. The several stages of this disease, in every case sent to me, were very pronounced and distinct. These transfers were made and permitted because the men altho treated at the several posts, were not benefited by treatment with quinine. The attacks as a rule came in between the hours of one P.M. and 5 P.M., and the patients (the transfers). The majority were very weak and more or less emaciated: the thin wasted condition of the muscles of several being the result of overwork, repeated attacks of ague, and to the food supplied to them being more or less damaged by rain. A few of the sick were nothing more nor less than "bags of bones", with bed sores as complications. The transfers from the Kinn district came in in fortnightly or monthly batches of 25 or 40 or thereabouts. The men were from all accounts treated with daily doses of quinine, prior to their arrival at Kyaukseai. While on the sick list they seldom or never had an aperient given them. The dietary.

Dietary management of the hospitals where these men had served, during the most trying months of the year, was imperfect perhaps neglected - not purposely but from unavoidable circumstances. Hence chiefly their very emaciated condition. The line of treatment systematically practiced at the Kyaukseai Native Hospital was as follows -
Forster's Food. regard was always given to the patients' nutrition. A warm ration was given every morning between 6 and 7 to every man under treatment - chiefly to the transfers, who formed the majority of the admissions. Night nursing was not neglected in the very serious cases. Rice well boiled in water, saline makes an excellent sustaining morning and night ration, provided the water too is swallowed, especially in places where milk cannot be procured. Warm boiled rice sweetened with sugar and mixed with a

Small quantity of Jell should be given to the convalescents. These ingredients can be supplied by the men themselves out of their daily rations.

Secondly. A mild aperient on the Colonial purgative plan was administered to the fever patient the day following his arrival at Kyaukse, even when constipation was not a prominent symptom.

Thirdly. Each and every patient (fever and dysentery) in thirty drops of the liquid Cinchona given daily in a glass of water at noon.

Dr. H. H. H. prescribed this to very special cases.

The admissions were selected personally by me. That is I never entered a name on the sick list unless I had seen him myself, ill with fever.

It has been remarked and rightly too, by some of the Senior Surgeons in Service in Burma, that quinine as a rule fails in its action as a prophylactic, and as an antiperiodic, in cases where purgatives are not given previous to the administration of quinine. The same theory holds good when liquid Cinchona is made use of in place of quinine. Purge your patient, and the liquid Cinchona of given

given frequently, say 3 or 4 times a day the 24 hours, will act most efficiently.

From the 18th of November to the 31st December 1886, the liquid Cinchona treatment was systematically adhered to, except during the short periods I had been absent from Kyaukse, while serving with an expeditionary force.

Of the 194 cases of Ague that had been treated chiefly with liquid Cinchona from the 18th November 1886 to the 31st December 1886 there were 12 transfers to No. 14 Field Hospital, Mandalay, no deaths; 171 were discharged cured to duty; there were about 30 re-admissions; and 9.3 was the average number of days each fever patient was under treatment.

From the day on which the Regiment had disembarked at Rangoon up to the 19th of November 1886, there were 286 admissions with Ague, and these were treated with quinine. 17 of these were sent to Mandalay for further treatment: 10.6 is the average number of days each of the quinine cases remained on the sick list. There were 4 deaths as follows.

1. Regimental Number 1937 was admitted
on 28/6/86 by Surgeon
Blackwell and treated
by him: and died
on 14/7/86.

2 - do - do 2536 was transferred
from Yeaman of Home
on 11/10/86 in an
emaciated condition
and died on 22/10/86.

3 - do - do 2278 was admitted
by me on 10/11/86 &
treated by me. He
died from the effects
of jaundice on 14/11/86.

4 - do - do 2391 was transferred
from Telikeo with
complete paralysis
of the lower extremities
& of the bladder on
16/11/86 and died
on 6/12/86.

Liquid Quichona alone or in combination
is a good tonic. I invariably prescribe
it in cough mixtures.

In cases of diarrhoea & dysentery
it serves as a fair astringent.

The men have not to my
knowledge objected to its use. Several
of the Sepoys I know prefer it to
Quinine, and it is decidedly far
more agreeable to the taste than
several of the drugs that are
supplied to the Native Hospitals,
Civil and Military.

It produces neither nausea nor
diarrhoea, and patients even when
fully under its influence have
never complained of deafness &c.

The Sepoys of the 25 Bo L^s have
taken kindly to the remedy, and
several have repeatedly asked for
it, because they consider it an
excellent remedy for fever.

Mandalay.

23 April 1887.

J. Barron
Surgeon Major
25 Bo L^s

J. Variat Esq. M.D.,
 Offg. Surgeon General.
 New Mexico Arsenal, Mexico.
 The Secretary to Government,
 Military Department,
 Washington.

I have the honor to be,
Sir,
Your most obedient Servant,

Thomas L. Sargent, M.D.,
 Offg. Surgeon General, New Mexico



P. 8. 15th Sept 1886 no 420218
8th 17.8 no 718



Military Department
Oatacamun
3rd June 87.

Revenue
Mexico 1887 1888
From, *[Signature]*
No. 14347
The Offg. Surgeon General,
New Mexico Forces,

No. 3250 Transferred
to the Revenue Depart-
ment, with reference to
para 3 of O.G. in that
department no 718,
dated 17th August 86.

To
The Secretary to Government,
Military Department
Oatacamun

[Signature]
Brigade
Secretary to Government.

Oatacamun the 26 May 1887
[Signature]
RD

G.O. no 588
Communicated to the
Dir of Genl Air chona Plantations
in the Surgeon General's office.

Forwarding a Report on the
trial of Liquid Quichona
in the Upper Burial Area
Force.

To the Govt Botanical
Garden Plantations
at Surgeon General's office