

Para 3 of G.O. Military
of 20.12.84. No 6347.

By whom are the plans
& specifications to be
prepared?

W
5.1.85

Low
The Hyderabad
P.W. Dept. should
prepare them. The
Madras P.W. Dept.
has nothing to do
with works at Hyder-
abad.

R.S.
5.1.88
Noted.
W
5/1.

GOVERNMENT OF MADRAS

MILITARY DEPARTMENT

20th December 1884, No 6347

Military Buildings—Native Lines

Read the following papers —

No 258 From Brigadier-General R C STEWART, Quarter Master General,
to Lieutenant-Colonel A KENNEY-HERBERT, Officiating Secretary to
Government, Military Department, dated Ootacamund, 31st October 1884,
No 1109-B

With reference to O G, No 2735, of 9th June last, communicating the decision
of the Government of India that before it is determined to abandon the present lines
at Begumpett now occupied by the 11th Regiment, Native Infantry, the experiment
should first be tried of carrying out certain improvements recommended by Deputy
Surgeon-General Colvin Smith, I am desired by the Commander-in-Chief to bring
to the notice of Government that this work was about to be commenced, when,
owing to the setting in of the north-east monsoon and an outbreak of cholera which
necessitated the removal of the regiment into camp, the suggested improvements
were suspended

2 I have now the honor to submit, for the consideration of Government, the
accompanying reports from Surgeon-Major Ross and Deputy Surgeon-General Ogg,
both of whom strongly recommend the entire abandonment of the lines and their
reconstruction on a new site, being of opinion that, even if the proposed improve-
ments are carried out, the result will never be satisfactory—an opinion in which
His Excellency entirely concurs

3 Taking into consideration the strong medical evidence against these lines,
which were condemned by a committee in September 1883, Sir Frederick Roberts
requests that the Government of India may be asked to reconsider their former
decision, as it now appears that the sum that would have to be spent on the
proposed alterations would simply be money thrown away, as the present lines,
even if temporarily improved, will, it is feared, sooner or later have to be abandoned
on account of their extreme unhealthiness and bad situation.

4 His Excellency requests that a very early decision in this matter may be
arrived at

Report on the Begumpett Native Infantry Lines

The Begumpett lines, now occupied by the 11th Regiment, Madras Native Infantry, are
placed, like those at Chichalgoodum, on a granite hillock, but of greater height, the lines
running east and west They were first occupied in 1872, but it is stated that prior to that
period other lines on the same site were occupied from 1856 to 1860, but that they ran north and
south and were healthy During the years 1871 and 1872 the regiment stationed at Begumpett
occupied the old artillery barracks, but became unhealthy directly the monsoon of 1873 broke
on the new lines into which they had moved

On the east of the granite hillock on which the lines are built and quite close but on much lower and more sheltered ground is situated the village of Russulpur, or, as it is commonly called, the Gun Bazaar, which is healthy. On the west, at a greater distance but similarly sheltered, are the villages of Bhagenantpur and Begumpett, also reputed to be very healthy.

On the east and west is wet cultivation and towards the north the officers' houses, which are healthy. The lines from their elevated site and the direction in which the streets run are fully exposed to the force of the south-west monsoon.

The huts are of fair size and as well built as most, but there is no provision for their conservancy. The house drainage from the unpaved courts flows through a hole in the wall into the shallow sandy side drains which are washed out during the rains by the storm waters. With this exception, they are outwardly clean, although the regimental latrine at some distance from the lines was badly kept.

The water-supply is partly bad, especially that from No 41, No 72 and No 75 wells, which unfortunately were lately most resorted to.

The following is the last analysis —

Physical Properties

No 36, taste, good, lustre, good, no smell, color, grey, no sediment

No 39, taste, brackish, lustre, fair, color, faintly brownish, smell, unpleasant, moderate sediment, consisting of vegetable tissue with infusoria (Roleferæ), &c, but no bacteria

No 41, taste and smell, intensely brackish, color, faintly drab, lustre, bad, a moderate sediment, consisting of vegetable tissue with many infusoria and some water fleas

No 70, lustre, fair, taste and smell, slightly stale, color, grey, faint turbidity, sediment, very slight

No 72, lustre, bad, taste, flat, color, brownish, a very marked disagreeable smell as of rotten eggs (H_2S), considerable turbidity, sediment moderate, amount showing peculiar needle-shaped nucleated cells $\frac{1}{10}$ long, a few infusoria.

No 75, lustre, bad, saltish taste and smell, slight opacity, not much sediment

Chemical Properties

Lime	Sulphates.	Nitrates	Nitrites	Grains per gallon				
				Chlorine	Organic matter	Total hardness	Permanent hardness	Removable hardness.
No 36 considerable	Present	Much	None	16.1	0504	14.35	13.10	1.25
" 39 present	Do	Slight	Do	4.2	1204	12.95	12.25	.70
" 41 "	Do	Do	Do	4.2	3780	13.30	12.15	1.05
" 70 "	Do.	Present	Do	5.95	0560	11.20	10.65	.55
" 72 slight	Do	Slight	Do	5.6	2520	13.20	12.00	1.20
" 75 present	Do	Do	Do	2.1	0784	8.40	7.55	.85

Remarks

No 36 is a good water. The chlorine is high, but its other qualities are good.

No 39 is not as good and, except in the absence of other water, should not be used.

No 41 is very bad and should certainly not be drunk.

No 70 is a very fair water and drinkable.

No 72 is very bad and undrinkable. Both this and 41 have enormous amount of organic matter.

No 75 is not a good water, although it has very little chlorine, its organic matter is high, and physical qualities bad.

The lines under report were occupied in the end of 1872, with the south-west monsoon of 1873 the regiment became increasingly sickly, and in 1874 they were specially so.

In the decade ending this year two years were healthy, four average, and four, including this, sickly, the sickness mainly occurring during the monsoon months.

On the 31st of March this year the 11th Regiment, Madras Native Infantry, arrived in Secunderabad from Rangoon and went into the Begumpett lines formerly occupied by the 9th Regiment, Madras Native Infantry, who had been very unhealthy, as will be seen from the following table —

9th Regiment, Madras Native Infantry

—	Total sick	Ague	Diarrhoea	Dysentery	Other diseases	Deaths and their causes
<i>Sick 1881</i>						
January	48	31	1		16	
February	40	17	1		22	
March	64	58			6	1 Pneumonia
April	122	106	2	3	11	1 Valve disease of heart
May	70	56	4	3	7	
June	38	26	2	3	7	1 Dysentery
July	110	81	4	6	19	2 { Ague .. 1 Hemiplegia 1
August	87	66	6	4	11	
September	42	26	2	4	10	1 Paraplegia
October	44	22	1	4	17	1 Acute myelitis
November	34	23			11	2 Dysentery, acute
December	47	31			16	2 Ague
<i>1882</i>						
January	37*	19	2	.	16	1 Ague
February	31	19			12	2 { Valve disease of heart 1 Bronchitis 1
March	50	35		.	15	2 Ague
April	34	20	1	1	12	
May	27	13			14	1 Phthisis pulmonalis
June	17	5			12	1 Enteric fever
July	49	35			14	
August	81	65	2	4	10	
September	66	49	1	1	15	2 { Ascitis 1 Opium poisoning 1
October	46	32	1	1	12	2 { Ague 1 Peritonitis 1
November	53	34	1	1	17	2 { Valve disease of heart 1 Peritonitis 1
December	37	16	1	2	18	3 Malignant cholera

The 11th Regiment were in fairly good health on arrival.

In February the admissions were twenty-five (no fevers and no bowel diseases except two cases of colic).

In March there were twenty admissions, three small-pox, one chicken-pox, one measles, but no malarial fevers, and four cases of diarrhoea.

In April (in Begumpett) the admissions rose to thirty-seven, one of small-pox, seven of ague, one of remittent fever, four of diarrhoea.

In May there were fifty-one admissions, three of chicken-pox, thirteen of ague, one of remittent fever, two of dysentery, nine of diarrhoea (one death).

In June there were forty-seven admissions, one of chicken-pox, six of ague, two of dysentery, and twenty-four of diarrhoea.

In July the admissions rose to ninety-four, thirty-two of ague, eleven of cholera (eight deaths), two of dysentery, one death, and thirty-five of diarrhoea (six deaths). On the 23rd July the regiment moved into camp.

In August there were forty-six admissions, twenty-two from ague of a mild type, two from cholera, both contracted in lines (one death), three of dysentery, and four of diarrhoea.

The total cases of diarrhoea among men and followers treated as out-patients were in June thirty-nine, in July a hundred, and in August forty-five.

In July nine followers were admitted with cholera (eight deaths), in August two, no death. The last case of cholera of this outbreak occurred among the men on the 4th of August in a man who contracted the disease from a relative. But a working party was sent in from camp on the 21st to knock down some compound walls in the lines, and early on the morning of the 28th one of them was attacked with the disease. The men did not enter the lines after the 21st and the disease did not spread.

The improvement in health of the men after leaving the lines is greater in reality than appears from the returns

There were last week only 2 66 per cent of sick to strength, and the week before only 1 63, but all the cases were of a very mild character and very different from the type of disease which formerly prevailed

As far as the 11th Regiment, therefore, is regarded, it was increasingly sick while in the lines, increasingly healthy when moved out of them

The sickness in the lines was mainly due to their position and to the direction in which they run, exposing them to the full force of both monsoons, but it was also doubtless due in great part to want of sanitation—past and present. The same ground has been occupied both by European and Native troops for very many years and the ground is probably saturated with organic matters which may, under certain climatic and seasonal influences, develop danger

Recommendations—The lines should be abandoned and a new site selected and decided upon. If this cannot be done, the regiment should be kept in camp until the sanitary arrangement proposed by Deputy Surgeon-General Colvin Smith can be fully carried out, which can only be done with safety in dry weather and while the lines are unoccupied. Belts of quick-growing trees should be planted to the east, south and west, not only on the low ground around the base of the hillocks on which the lines are situated to arrest miasm, but on the western side especially, sufficiently high up to afford shelter to the lines

Wells, Nos 41, 72 and 75, should be filled in or shut up so that the water cannot be got at for drinking purposes. No mere prohibition directed against the use of these waters will do. Wet cultivation should be put a stop to and the low marshy land should be drained

Should these measures be carried out, it should not cease to be borne in mind that they are palliative only, that the situation of the lines and their direction are radically bad and that the soil upon which they rest and of which they are built can hardly be otherwise than largely polluted with organic matter, the results of prolonged human occupancy

(Signed) AENEAS M ROSS, Surgeon-Major,
Offg Dy Surgeon-General, Her Majesty's Forces,
Hyderabad Subdy Force and Hyderabad Contingent

SECUNDERABAD,
22nd September 1884

From Deputy Surgeon-General G S W OGG, M B, M A, Deputy Surgeon-General, Hyderabad Subsidiary Force and Hyderabad Contingent, to the Assistant Quarter Master General, Hyderabad Subsidiary Force, dated Secunderabad, 18th October 1884, No 3092

With reference to your No 1628, dated 15th instant, requesting to be informed whether, in my opinion, the proposed alterations in the Begumpett lines can now be safely proceeded with, I have the honor to state that if it has been finally decided that these alterations are to be made, they may now, I believe, be carried out with as little risk as at any future time

With regard to the case of cholera which occurred in the 11th Regiment on the 21st August, and which was attributed to infection caught while working in the lines, I am of opinion, after inquiry into the circumstances, that the facts of the case do not corroborate this hypothesis. The facts are these. A fatigue party consisting of 1 Native officer, 16 non-commissioned officers and 100 men was employed working in the Begumpett lines on the 21st August. None of this party were attacked with diarrhoea or cholera till the 27th August, on the evening of which day a man named Shaikh Meeran was brought to hospital suffering from cholera. I have ascertained, however, that on the morning of the same day a brother of Shaikh Meeran, one Lance Naigue Muhammad Abd-ul-razzaq, was attacked with diarrhoea attended with prostration and other symptoms which, in the opinion of the medical officer of the regiment, were of a choleraic character. Both these men lived in the same hut, and as Muhammad Abd-ul-razzaq had not been working in the lines, and as he was attacked twelve hours before his brother, the probable inference from the facts is that these two cases had a common origin entirely unconnected with the work in the lines on the 21st August. Moreover, the time that elapsed from the 21st August, the time of supposed infection, to the appearance of symptoms of cholera, the night of the 27th August, is more protracted than the period of incubation of the cholera poison is generally supposed to be

I would beg, however, before concluding this letter, to urge strongly my belief that, whatever temporary improvements in the sanitary state of the Begumpett lines may be effected by the alterations recommended by Deputy Surgeon-General Colvin Smith, it will eventually be found necessary to abandon these lines. The widening of the court-yards of the huts, and the removal of the surface soil saturated with organic impurities, are measures which will doubtless prove beneficial, and which are absolutely necessary before the lines can be re-occupied with

safety. It may be hoped that these means will prevent a recurrence of the diarrhoea which appeared first in the early months of the year, and continued with steadily increasing frequency and progressive virulence of type, till it culminated in July in a severe outbreak of cholera

No measures of this kind, however, can affect the main cause of the sickness, which has rendered these lines notoriously unhealthy for the past ten years, and which has long been recognized to be the malarious emanations from the swamps with which the Begumpett lines are surrounded on three sides

The unhealthiness of the Begumpett lines has been brought to notice so often, especially by Deputy Surgeon-General Colvin Smith in frequent reports, and lately in a detailed report submitted by Surgeon-Major A E M Ross while officiating as Deputy Surgeon-General, Hyderabad Subsidiary Force, that it is unnecessary for me to go over ground so often trodden. I would beg, however, to mention a few facts which are not noted in Surgeon-Major Ross's report

During the three years 1881, 1882 and 1883, fifty-one death casualties took place in the 9th Regiment, of which twenty-four occurred in 1883—a mortality almost unprecedented in a Native infantry regiment in the Madras presidency in cantonment, except as the result of an epidemic outbreak of cholera. During the same period, 238 deaths occurred in the general population of the lines, aggregating the alarming proportion of 73 per 1,000 of strength

During the same period a large number of men were invalided on sick leave to their native places (sixty-three in the year 1883 alone), and of those who remained, 176, in a strength of 729, were found, on examination, to be suffering from enlargements of the spleen induced by malarious cachexia. Of the recruit boys in the lines, twelve, out of a strength of thirty, and of the pension boys, seventeen, out of a strength of thirty-nine, were found similarly affected

So greatly had the health of the regiment been affected by its sojourn of three years and a-half in the Begumpett lines that, when the time drew near for its departure on foreign service, grave fears were entertained as to the effect the enervating climate of Burma might have on men whose constitutions were in many cases already enfeebled by malarious cachexia. Under similar circumstances the 20th Native Infantry, which was moved in 1880 to Rangoon after being stationed for one year at Begumpett, was said to have been "put almost hors de combat from sickness, especially scurvy," a break down which was attributed to an impoverished state of blood caused by the malaria of the Begumpett marshes

Fortunately for the 9th Native Infantry it was sent to Moulmein, a station which is exceptionally free from malarious fevers, and which has the reputation of being the healthiest station for Native troops in Burma. The wing of the 9th Regiment now stationed at Moulmein is healthier than any body of Native troops in British Burma, while the wing at Port Blair is also fairly healthy, with the exception of the small detachment in the Nicobars, which is noted for malaria. Had this regiment been sent to Rangoon, instead of Moulmein, there is reason to believe that it would have broken down, as the 20th Native Infantry broke down, and have been decimated by fever, scurvy and dysentery

Before concluding this letter, I would again urge strongly the desirability of abandoning the Begumpett lines, and building huts for the 11th Native Infantry in a healthier locality. Without taking into account the terrible loss of life and health entailed by the occupation of these lines, and putting the matter on the lowest ground of financial loss or gain, the cost of building new lines would soon be recouped in a diminished sick list, in a diminished number temporarily or permanently invalided, in a reduced pension list, and, above all, in having in the service of the State a body of effective men, instead of a regiment of invalids

Secunderabad is fast gaining the reputation of being the most unhealthy station garrisoned by Madras troops. Much may be done to improve the sanitary state of several of the Native lines by forbidding wet cultivation and draining the land, but this is a remedy which could not be carried out successfully so far as Begumpett is concerned, except at vast expense, from the extent of the marshy ground which surrounds it

The suggestions that the lines might be rendered more healthy by building a high wall or planting trees on the south and west of the lines have been made doubtless under the influence of the feeling that some recommendations must be made to alleviate the serious and persistent sickness for which the lines are now noted, rather than in the hope that much benefit could accrue from the suggestions made

The knoll on which the Begumpett lines are built is so much higher than the ground on the south and west, that years must elapse before the fastest-growing trees would attain such a height as to be any protection to the lines from the south-west winds, and as the soil is poor and rocky, it is hardly to be expected that trees planted there will attain any size

In 1882, when Officiating Deputy Surgeon-General, Hyderabad Subsidiary Force, I requested the Cantonment Magistrate to plant a belt of trees to the south-west of these lines. The trees were planted and are nearly all still alive, but many years must pass before much shelter can be given by them to the Begumpett lines

I entirely concur with this report, and suggest that the proposals therein made may be persistently urged upon the Government for immediate action

23rd October 1884

(Signed) G W L'ESTRANGE, Colonel, R A,
Commanding Hyderabad Subsidiary Force

No 259 To the Secretary to the Government of India, Military Department,
dated 14th November 1884, No 5640

No 260 From Colonel G CHESNEY, Secretary to the Government of India,
Military Department, to Lieutenant-Colonel A KENNEY-HERBERT,
Officiating Secretary to the Government of Madras, Military Department,
dated Fort William, the 9th December 1884, No 525-C

Military Buildings—Native Lines

I am directed to acknowledge the receipt of your letter, No 5640, dated the 14th November 1884, recommending that Original enclosures returned as requested early sanction may be accorded to the construction of a new set of lines on a fresh site in place of those at present occupied by the 11th Regiment, Native Infantry, at Begumpett, Secunderabad, which have proved to be unhealthy owing to faulty situation

2 In reply, I am to say, for the information of the Governor in Council, that the Government of India sanction the construction of new lines at Secunderabad on the understanding that the cost will not exceed Rs 25,000, and that no further allotment of funds will be required hereafter on this account The small expenditure likely to be incurred during the current financial year can probably be met from savings, but full provision should be made for the balance in the estimates for next year

3 I am to invite attention to Military Department letter, No 620-S C, of the 25th July 1884, as bearing on the case, and at the same time to ask that the plans and specifications therein called for may be furnished at an early date.

Procs of Govt, No 3870, dated 11th August 1884

No 261 ORDER THEREON, 20th December 1884, No 6347

The sanction of the Government of India communicated to His Excellency the Commander-in-Chief.

2 The Controller of Military Accounts will note the instructions conveyed in para 2 of the foregoing letter, and will report what savings are available to meet any expenditure on the new lines that may be incurred during the current financial year

3 The Government await the submission of the plans and specifications.

(True Extract)

A Kenney-Herbert Lt-Col,
Offg Secretary to Government.

To the Quarter Master General

„ Controller of Military Accounts
„ Surgeon-General, Her Majesty's Forces
„ Adjutant-General, for information.
„ Public Works Department

Ed P L. Pereira.

Govt. of (1884) Madras.

MILITARY.

To
THE QUARTER MASTER GENERAL,
&c, &c, &c

Dated December, 20th

Issued

Recd 26 12 24 Encl

G.O., 20th December 1884, No. 6347.

DECEMBER.
Nos. 258—261.

Military Buildings—Native Lines.

11th Regiment, Native Infantry —Construction of new lines on a fresh site in place of those now occupied by the — at Begumpett, Secunderabad, sanctioned, and certain plans and specifications called for, by the Government of India

GOVERNMENT OF MADRAS

MILITARY DEPARTMENT.

28th January 1885, No 484

Military Buildings—Native Lines.

Read the following papers —

No 372 Telegram from the Quarter Master General, Ootacamund, to the Officiating Secretary to Government, Military Department, Madras, dated 22nd December 1884, No. 1694-M

Reference my letter, No 1109-B, 31st October, Begumpett lines Army having since inspected these lines, considers the improvements sanctioned in O G, 2735, 9th June, should be carried out Please communicate with India and obtain approval

No 373 Telegram from the Officiating Secretary to Government, Military Department, Fort St George, to the Quarter Master General, Ootacamund, dated 30th December 1884, No 6422

Your message, 1694-M, 22nd instant

Referring to sanction accorded in Proceedings of Government, 6347, 20th, does Army wish improvements sanctioned in Proceedings of Government, 2735, 9th June, to be first tried?

No 374 Telegram from the Quarter Master General, Ootacamund, to the Officiating Secretary to Government, Military Department, Madras, dated 31st December 1884, No 1720

Your 6422, yesterday Please await reply to reference made Secunderabad before communicating Government of India

No 375 From Brigadier-General R. C STEWART, Quarter Master General, to Lieutenant-Colonel A KENNEY-HERBERT, Officiating Secretary to Government, Military Department, dated Madras, 9th January 1885, No 152

Adverting to my telegram, No 1720, dated 31st December 1884, and to previous correspondence relative to the improvements to be carried out to the Begumpett lines, I am desired by the Commander-in-Chief to say that, looking to the fact that the 11th Regiment, Madras Infantry, has been for some time in camp, and to the length of time which must necessarily elapse before new lines, if now commenced, could be completed, and likewise His Excellency having, from personal inspection of the present lines, satisfied himself that the improvements sanctioned in O G, No 2735, dated 9th June 1884, should, in the first instance, be tried before deciding to abandon the lines, I am desired by the Commander-in-Chief to request that the Government of India may be moved to cancel O G, No 6347, dated 20th December 1884

With Order

2 Should the lines again prove unhealthy after the improvements have been effected, the Commander-in-Chief will then again address Government on the subject, but His Excellency is averse to asking Government to incur expenditure which can possibly be avoided

No 376 *To the Secretary to the Government of India, Military Department, dated 14th January 1885, No 243*

No 377 *Telegram from the Secretary to the Government of India, Military Department, Calcutta, to the Officiating Secretary to the Government of Madras, Military Department, Madras, dated 26th January 1885, No 124-C.*

Your 243 of 14th My 525-C, dated 9th December, cancelled Lines at Begumpett should be improved as proposed by Doctor Smith at estimated cost Rs 3,617.

No 378 ORDER THEREON, 28th January 1885, No 484

Ordered accordingly that Proceedings of Government, No 6347, dated 20th December 1884, be cancelled, and the improvements to the Begumpett lines sanctioned in Proceedings of Government, No 2735, dated 9th June 1884, carried out at a cost of Rs 3,617

(True Extract)

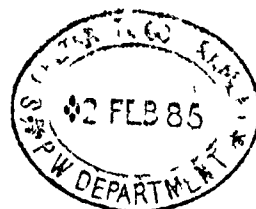
A. Kennedy . Lt.-Col.,
Offg Secretary to Government

To the Quarter Master General
 " Controller of Military Accounts, } with a copy of Proceedings of Government
 " Surgeon-General, Her Majesty's Forces, } No 2735, dated 9th June 1884
 " Adjutant-General, for information
 " Public Works Department, with a copy of Proceedings of Government,
 No 535, dated 4th February 1884, and No 2735, dated 9th June 1884

Gobt. of (1885) Madras.

MILITARY

To
THE QUARTER MASTER GENERAL,
&c, &c, &c



Dated January, 28th

Issued

Recd

Encl

G.O., 28th January 1885, No. 484.

13 No 284 Wd 16 Feb 85

JANUARY.

Nos. 372-378.

Military Buildings—Native Lines

Begumpett, Secunderabad.—Proceedings of Government, No 6347, dated 20th December 1884, cancelled, and the execution of the improvements to the present lines at —, sanctioned in Proceedings of Government, No 2735, dated 9th June 1884, directed

GOVERNMENT OF MADRAS

MILITARY DEPARTMENT

9th June 1884, No 2735.

Military Buildings—Native Lines.

Read the following papers —

No 99 From Colonel G CHESNEY, Secretary to the Government of India, Military Department, to Lieutenant-Colonel A KENNEY-HERBERT, Officiating Secretary to the Government of Madras, Military Department, dated Fort William, 27th February 1884, No 269-C

Military Buildings—Native Lines.

I am directed to acknowledge the receipt of your letter, No 536, dated 4th February 1884, submitting correspondence regarding the unhealthiness of the lines of the 9th Madras Native Infantry at Begumpett, and asking for an allotment of funds in the budget of 1884-85 for the construction of new lines for the regiment on another site

2 In reply, I am to state that, before coming to a decision on the subject, the Government of India desire to be furnished, under the orders of the Governor in Council, with the proceedings of the committee on whose recommendation the present site was occupied in 1872, together with an estimate of the cost of carrying out the alterations and additions recommended in Deputy Surgeon-General Colvin Smith's letter, No. 1806, dated 8th December 1883

No 1125

Referred to His Excellency the Commander-in-Chief for favor of compliance with para 2

(By Order)

FORT ST GEORGE, (Signed) A KENNEY-HERBERT, Lt-Col,
5th March 1884 Offg Secretary to Government

To the Quarter Master General.

No. 100 From Brigadier-General R C STEWART, Quarter Master General, to Lieutenant-Colonel A KENNEY-HERBERT, Officiating Secretary to Government, Military Department, dated Ootacamund, 7th May 1884, No 30-B

Adverting to your reference order, No 1125, dated 5th March 1884, referring to His Excellency the Commander-in-Chief letter, No 269-C, of the 27th February 1884, from the Government of India,

* Letter, No 604, of 29th March 1884 (with enclosures), from the General Officer Commanding Hyderabad Subsidiary Force, Military Department, regarding the lines lately occupied by the 9th Regiment, Native Infantry, at Secunderabad, I have the honor by order to forward the accompanying correspondence * for submission to Government and to inform you that

the proceedings of the committee which selected this site cannot now be found.

2. The General Officer Commanding Hyderabad Subsidiary Force states that the site of the Begumpett lines was selected in 1871, but that neither the proceedings of the committee, if there was one, nor any division order convening the assembly of such committee, can be found. The site was apparently approved of by the medical authorities, but as it was not an entirely new one, and had previously been occupied by a Native regiment, it is doubtful if any committee was assembled.

3. The recommendations submitted by the Deputy Surgeon-General for the improvement of the existing lines are as follow —

- (1) The street drains and infected ground beneath them and also the privies in the court yards of the houses to be dug up,
- (2) Improvement of the drainage of the court yards and the enlargement of the same towards the streets
- (3) The provision of privies and washing places in the court yards, after a design by himself, fitted with iron receptacles

4. It is stated that all the work comprised in the first two recommendations might be carried out by the men themselves without cost to Government, and His Excellency is of opinion that a great part of that under clause (3) might also be effected by sepoy labor, as, although it would be necessary to provide the stones for this work, the walls of the privies and wash-houses, and also the laying of the stones, could be done by the men. This would in some measure decrease the cost, which is estimated at Rs 4,000 by the Officer Commanding Hyderabad Subsidiary Force, but which sum would only be partially lost, if it were eventually found necessary to remove the lines to another site, for the stones and iron receptacles would still be useful.

5. Further detail of this expenditure has been called for and will be submitted on receipt

No 101. *To the Secretary to the Government of India, Military Department, dated 8th May 1884, No 2176*

No 102. *From Colonel G CHESNEY, Secretary to the Government of India, Military Department, to Lieutenant-Colonel A KENNEY-HERBERT, Officiating Secretary to the Government of Madras, Military Department, dated Simla, 23rd May 1884, No. 319-S C*

Military Buildings—Native Lines.

In reply to your letters marginally noted, I am directed to say, for the information of the Governor in Council, that the Government of India are of opinion that before it is determined that the present lines at Begumpett ought to be abandoned the experiment should first be tried of carrying out the improvements recommended by Deputy Surgeon-General Colvin Smith.

No 103. ORDER THEREON, 9th June 1884, No 2735.

The decision of the Government of India communicated to His Excellency the Commander-in-Chief, with reference to Proceedings of Government, No. 535, dated 4th February 1884.

2. The plan and estimate, amounting to Rs 3,617, for the improvements in question, received with the Quarter Master General's letter, No 1173, dated 17th May 1884, will be returned on receipt from the Government of India, to whom they were forwarded on the 21st idem

(True Extract)

(Signed) A KENNEY-HERBERT, Lt -Col,
Offg Secretary to Government.

To the Quarter Master General.
„ Adjutant-General, for information

Exd E C Shunker.

Gobt. of (1884) Madras.

MILITARY.

To
THE QUARTER MASTER GENERAL,
&c, &c, &c

Dated June, 9th.

Issued

Recd

Encl.

G.O., 9th June 1884, No. 2735.

JUNE.
Nos. 99-103.

Military Buildings—Native Lines.

Begumpett, Secunderabad — Decision of the Government of India that before abandoning the present lines at — an experiment of carrying out the improvements recommended by Deputy Surgeon-General Colvin Smith should first be tried

GOVERNMENT OF MADRAS

MILITARY DEPARTMENT.

4th February 1884, No 535

Military Buildings—Native Lines.

Read the following papers —

No 26 From Brigadier-General R C STEWART, Quarter Master General, to Colonel E L HANKIN, Secretary to Government, Military Department, dated Bangalore, 14th December 1883, No 222-9007.

I am desired, by the Commander-in-Chief, to report, for the information of Government, that the very indifferent state of health into which the 9th Regiment, Native Infantry, lately stationed at Secunderabad, has fallen, has caused His Excellency much anxiety

2 The regiment arrived at Secunderabad in February 1880, and from that period up to the present date the men have suffered from fever in an unprecedented manner

3 From a perusal of the accompanying letter, number and date as per margin, No 158-O, dated 1st September 1883 from the Surgeon-General, Her Majesty's Forces, upon whom the Commander-in-Chief called for report and recommendations, it will be observed that the mortality in the regiment exceeds the death rate in the Madras army approximately by thirty-one per cent, and that the death rate amongst the inhabitants of the regimental lines exceeds that of the cantonment of Secunderabad by nearly 115 per cent

4 The Surgeon-General was of opinion that the mortality can only be accounted for by the local condition under which the men are placed to the exposure and surroundings of the lines, and to the large amount of malarial poison developed in the neighbourhood, and he strongly recommended the appointment of a committee to report on the subject in view to the selection of another site

5 The proceedings of this committee I have now the honor to enclose Their deliberations resulted in the selection of another site (plan attached), the present one being condemned in consequence of its objectionable aspect, looking as it does over low marshy ground exposed to the south-west monsoon

6 The site recommended was on the east slope of the land on which the old lines stand, and the committee recommend that the new lines be built north and south, so as to be sheltered from the south-west monsoon

7 The Commander-in-Chief did not, in the first instance, approve of this site, being of opinion that it would be preferable to move the regiment to an entirely different part of the cantonment, and the committee was ordered to re-assemble in view of further consideration of the matter

8 The proceedings (herewith forwarded) of the committee which re-assembled to consider this point reported that they adhered to the site previously suggested, because—

- (1) The site is well sheltered from the south-west monsoon
- (2) It is not low, and Europeans living close by are healthy
- (3) The former Native infantry lines at Bagumpet were healthy, but they were built north and south
- (4) One of the best wells in the station is close to the site, and not in a position likely to be contaminated by sewage
- (5) The site would not necessitate a new hospital or other public buildings, or officers' houses

9 Having fully considered this matter, the Commander-in-Chief endorses the opinion of the committee as to the desirability of abandoning the old lines, and allowing the men of the 17th Native Infantry, which has lately relieved the 1st Regiment, Native Infantry (Pioneers), to build themselves new huts under the supervision of their officers, and utilizing the material of the old lines as far as is possible, and I am desired to request the sanction of the Government to this proposal.

10 The cost of the lines would not exceed that sanctioned in Proceedings of Government, No 2648, dated 9th May 1883, for construction of lines for the 30th Regiment, Native Infantry, at Trichinopoly, viz, Rs 26,148

From C D MADDEN, Esq, Surgeon-General, Her Majesty's Forces, to the Quarter Master General, dated Ootacamund, 1st September 1883, No 158-O

In returning the documents named in the margin, and in reply to your letter, No 616, of the 14th of August 1883, I have the honor to

1 Demi-official letter, dated 3rd August 1883, from the Officer Commanding Hyderabad Subsidiary Force

2 Return of deaths in the 9th Regiment, Native Infantry, since its arrival at Secunderabad

state as follows for the information of His Excellency the Commander-in-Chief

2 In the accompanying return a comparison is made between the deaths in the Madras army generally for the three years from 1880 and 1882 inclusive, and in the 9th Madras Native Infantry during the same period, also between the general death rate in the cantonment of Secunderabad and amongst the population of the lines of the 9th Native Infantry

3 From these statements it will be seen that the death rate in the ranks of this regiment exceeds that of the army generally, approximately, by thirty-one per cent, and that the death rate amongst the general population of the lines exceeds that of the cantonment of Secunderabad by nearly 115 per cent

4 The mortality, both in the ranks and families of the 9th Native Infantry, has been very considerable, and as it can only be accounted for by the local conditions under which the men have been placed, and as it is in my opinion due to the exposure and surroundings of the lines and the large amount of the malarial poison which is developed in their neighbourhood, I would strongly recommend, for the consideration of His Excellency, that a committee should be assembled with a view to another site being selected

5 It will be observed that the mortality for the present year amongst the fighting men of the 9th Native Infantry, which was excessive during the hot months, has not been taken into account in the above statement

RETURN showing the death rate for the years 1880—82 amongst the fighting ranks and families of the 9th Native Infantry as compared with the general death rate in the Native army and in the cantonment of Secunderabad respectively

For 1880—82	Native Army generally	9th Madras Native Infantry
Total average strength	92,961	Total 2,137
Total deaths	1,535	47
Ratio of deaths per 1,000 of strength	16 5	* 21 9
* 31 per cent in excess		
For 1880—82	General population of the Secunderabad Cantonment	General Population of the Lines, 9th Native Infantry
Total average strength	52,314	Total 3,259
Total deaths	1,815	238
Ratio of deaths per 1,000 of strength	34 6	† 73 0

† 115 per cent in excess

(Signed) C D MADDEN,
Surgeon-General, Her Majesty's Forces.

PROCEEDINGS of a Committee assembled, by order of Major-General Sir C KEYES, K C B, Commanding Hyderabad Subsidiary Force, on the 21st September 1883, to report upon the lines occupied by Her Majesty's 9th Regiment, Madras Native Infantry, at Bagumpett

President.

Colonel G A ARBUTHNOT, 3rd Cavalry

Members

Deputy Surgeon-General COLVIN SMITH, M D, C B
Brigade-Surgeon G S W OGG, M B, Staff Surgeon

In attendance

Major H C Fox, R E, Executive Engineer, also
Colonel F GADSDEN, Commandant, 9th Native Infantry

The Committee having assembled pursuant to order inspected the present lines of 9th Regiment, Native Infantry, at Bagumpett, and consider—

- (1) There is nothing in the plan of the construction of the houses which can in any way account for the excessive sickness from which their occupants have suffered
- (2) The site of the greater portion of the lines is objectionable, being, as they are, on a slope looking west over low marshy country, and exposed to the south-west monsoon winds
- (3) The direction of the lines, viz, east and west, renders them exposed to constant currents of wind, much of it doubtless unhealthy, and from which natives are especially liable to suffer in health

2 The Committee is convinced that the present site is not desirable, and recommend that new lines be built on the east face of the slope, but more to the south on which the present ones are situated, and that they be built to run north and south, they will then be sheltered from the south-west monsoon, while the milder force of the north-west one will be broken by the back wall of the last row on that side, also by trees and village of Russulpore, which is very healthy

3. The site and plan of the proposed lines is given in the plan A, which accompanies, and the former appears to be the only available one suitable for the end in view

4 The road shown in the plan running past Russulpore village to the officers' quarters will have to be slightly diverted to give room for the most easterly row of the northern wing, but the cost of this will be but trifling

(Signed) G A ARBUTHNOT, Colonel, } President
Commandant, 3rd Light Cavalry,
(„) COLVIN SMITH, M D, Dy Sur-Genl, }
Hyderabad Subsidiary Force, } Members
(„) G S W OGG, M B, Brigade-Surgeon, }
Staff Surgeon, }

I concur in the opinion expressed by the Committee

(Signed) C KEYES, Major-General,
Commanding Hyderabad Subsidiary Force

PROCEEDINGS of a Committee convened in D O No 5, dated 19th September 1883, to select a new site for the lines of the Native Infantry at Bagumpett, and re-assembled on the 31st October 1883, by order of the Major-General Commanding Hyderabad Subsidiary Force, as per D O No 6 of 22nd October 1883

President

Colonel G A. ARBUTHNOT, 3rd Light Cavalry.

Members

Deputy Surgeon-General COLVIN SMITH, M D, C B
Brigade-Surgeon G S W OGG, M B

In attendance

Major H C Fox, R E

The Committee having re-examined various sites in the cantonment find there is no other suitable for the required purpose within cantonment limits, but should an entirely new

site be desirable, then the only one that presents itself is close to the third mile-stone on the Kamptee road and to the north of the light cavalry lines, but it is unfortunately out of the cantonment. Here there is an admirable site for lines well sheltered from the south-west monsoon, but the distance from Secunderabad is a disadvantage.

2 The reasons why the Committee were induced to select the site recommended in their former proceedings are—

1st When the old horse artillery were located here they enjoyed very good health. The site is well sheltered from the south-west monsoon—the malarious wind here—nor is it much exposed to the north-east wind. The most healthy lines in this station are those so protected from monsoon winds.

2nd The site is not low but on a fair slope, the village of Russulpore lower and to the east, and north-east of it is very healthy, the Europeans living in the old horse artillery officers' houses close by are also healthy.

3rd The old Native infantry lines at Bagumpett were healthy, the 22nd Native Infantry was healthy in them in 1856, so also the 9th Native Infantry some years later, but the lines were not so far north as at present, and were built running north and south, instead of east and west as they are now. The old lines were considered so healthy that that part of the station was chosen for European barracks, but unfortunately they were built further north and they proved most unhealthy, and the present lines were built after they were abandoned, and partly even further north and west.

4th One of the best wells in the station is close by on the south-west, but not in a position likely to be contaminated by sewage, &c.

5th The site would not necessitate a new hospital or other public buildings, officers' houses, &c.

(Signed) G A ARBUTHNOT, Colonel,
Commandant, 3rd L C, } President.

(„) COLVIN SMITH, M D,
Deputy Surgeon-General, } Members.

(„) G S W OGG, M B,
Brigade-Surgeon, }

(„) H C FOX, Major R E,
Executive Engineer, } In attendance

(„) C P KEYES, Major-General,
Commanding H S Force

No 27 With report from Controller of Military Accounts, 24th Dec 1883, F.

No 28 From Brigadier-General R C STEWART, Quarter Master General, to Colonel E L HANKIN, Secretary to Government, Military Department; dated Bangalore, 19th December 1883, No 267-9343

In continuation of my letter to your address, No 222, of 14th December 1883, on the subject of the lines of the 9th Regiment, Native Infantry, at Secunderabad, I have the honor, by desire of the Commander-in-Chief, to forward a letter since received from the Officer Commanding the Hyderabad Subsidiary Force, number and date as per margin, enclosing a letter on the same subject from the Deputy

No 2124, dated 11th December 1883 Surgeon-General, Hyderabad Subsidiary Force, and recommending, if the Government do not approve of the abandonment of the present site, that certain alterations and improvements be made to the houses after the departure of the 9th Regiment, Native Infantry, and before the arrival of the 11th Regiment, Native Infantry, in view of rendering them fitter habitations, and I am to request that this matter may be considered along with that submitted in my letter above quoted.

2 I am desired to add that, in the Commander-in-Chief's opinion, the preferable course is to abandon the lines entirely, the favor of early orders being passed on the subject is solicited.

From Major-General Sir C P KEYES, K C B, Commanding Hyderabad Subsidiary Force, to the Quarter Master General, Madras, dated Secunderabad, 11th December 1883, No 2124

I have the honor herewith to forward, for submission to His Excellency the Commander-in-Chief, letter, No 1800, dated 7th instant,

1 My letter, No 1080 dated 29th April 1882, to the address of the Quarter Master General, Madras, forwarding letter, No 357, dated 7th March 1882 from the Deputy Surgeon-General to my address, plans &c.

2 My letter No 2733, dated 6th December 1882, to the address of the Quarter Master General, Madras.

3 My letter, No 1557 dated 1st October 1883 to Quarter Master General, Ootacamund, forwarding proceedings of Committee.

4 My letter, No 1882 dated 13th November 1883, to address of the Quarter Master General, Madras, forwarding revised proceedings of committee.

from the Deputy Surgeon-General to my address on the subject of improvement of the Begumpett lines now in the occupation of the 9th Regiment, Madras Native Infantry.

2 The correspondence alluded to by the Deputy Surgeon-General will be found embodied in the letters as per margin and the proceedings of the committee which assembled to report on the state of the lines and to select a site for new lines, &c.

Also revised proceedings of the same committee.

3 I beg to be informed if it is the intention of Government to abandon the present lines at Begumpett and to erect others on a new site.

4 Should there be no present intention of making any change, it is earnestly hoped that Government may be moved to sanction the immediate execution of the improvements recommended by the Deputy Surgeon-General.

From COLVIN SMITH, Esq, M D, C B, Deputy Surgeon-General, Her Majesty's Forces, Hyderabad Subsidiary Force and Hyderabad Contingent, Secunderabad, to Major-General Sir C P KEYES, K C B, Commanding Hyderabad Subsidiary Force, dated Secunderabad, 7th December 1883, No 1800

I have the honor to bring to notice, in continuation of correspondence as per margin,*

* Annual Inspection Report 1881

No 111 of 19th January 1882

„ 317 of 27th February „

„ 357 of 7th March „

„ 1302 of 24th November 1882, to Assistant Quarter Master General

„ 1150 of 18th September 1883

regarding the Native lines at this station and particularly the very unhealthy state of those at Begumpett, now occupied by the 9th Regiment, Native Infantry, that as nothing whatever has been done to improve the sanitary state of the court-yards with the exception of that in one of the huts which was altered

by the late Major Strettell, partly on the plan furnished by me, and as the lines have proved most deadly to the 9th Regiment and followers, I would therefore strongly recommend that when the corps leaves for Burma in the end of this month the whole of the street drains, which are of broken porous bricks, should be removed, as I consider it would be extremely dangerous to have this done when the lines are occupied, as the bricks have been saturated with sewage from the latrine of the court-yards, spread over a period of many years, or since the lines were built in 1872.

2 When the brick drain, which is worse than useless, is removed, the filthy earth below should also be taken away and the ground broken up so that the sun may get well at it to purify the earth a little.

3 The ground in the privies of court-yard should be removed and it also treated as the ground below the brick drain.

4 The storm water from the hut and all parts of the court-yards, except the privy and bathing place, should be led below the door of the hut, and the privy and washing place constructed as recommended by me the year before last, plans of which were sent with letters as per margin, or on an improvement of it.

No 317 of 27th February 1882

„ 357 of 7th March 1882

per margin, or on an improvement of it. If something is not done at once to improve these lines, I would strongly recommend that

the 11th Regiment, Native Infantry, do not enter them in march next when the corps is expected to arrive here.

5 The court-yards being very small and confined might easily be enlarged towards the street, which is broad enough to allow of this, as formerly recommended. All the sewage soaks up in the drains, there being no chatties even to collect it. The drain under the chabootas should be opened out to the sun as recommended after my first inspection two years ago and since, and all sewage should run into iron buckets, iron being the best material for such a purpose.

6 Each latrine should have an iron receptacle for night-soil so as to do away with the filthy system at present allowed, and were Government even to pay for the iron tub and iron

receptacle, say in all Rs 1-12-0 per hut, it would be money well spent as it is nothing whatever has been done to improve the state of the sepoys' lines. I therefore trust that you will give your support and strongly recommend these proposals

B

Forwarded, in continuation of this office report, F, of 24th December 1883

FORT ST GEORGE,
8th January 1884

(Signed) C CARTER, Lieut-Colonel,
Offg Controller of Military Accounts

No 29 Memorandum from Brigadier-General R C STEWART, Quarter Master General, to Colonel E L HANKIN, Secretary to Government, Military Department, dated Bangalore, 26th December 1883, No 298

Forwarded to Government in continuation of this office No 267, dated 19th instant

2 His Excellency the Commander-in-Chief, after perusing the letter from the Surgeon-General, Her Majesty's Forces, and its enclosures, is still of opinion that it would be better to abandon the Native Infantry lines at Begumpett entirely

From C D MADDEN, Esq., Surgeon-General, Her Majesty's Forces, to the Quarter Master General, Fort St George, dated Bangalore, 17th December 1883, No 2368

With reference to the enclosed correspondence, I have the honor to remind you that the condition of the lines at Begumpett, in Secunderabad, now occupied by the 9th Native Infantry, has been frequently brought to the notice of the Commander-in-Chief and that on the last occasion of my mentioning the matter to His Excellency, he informed me that he had directed a committee to assemble to select a site for new lines

2 I consider that the expense involved in Dr Colvin Smith's recommendations would be more profitably incurred in the forming of new lines in an approved position

3 Should it be impossible to obtain sanction for the construction of new lines, there can be no doubt that these recommendations of Dr Smith are the best possible alternative. As it would be very dangerous, however, to effect the changes suggested by him while the lines are occupied, I would urge that, if the work must be done by sepoys, the 11th Native Infantry, which is the regiment to succeed the 9th Native Infantry, should be kept in camp at a convenient distance from the lines until such time as these alterations are completely carried out

4 Even done in this way there is no doubt that the ordinary allowance for putting money will not cover the expenditure for materials alone, and I venture to submit that, under the circumstance, the 11th Native Infantry should receive exceptional consideration

From COLVIN SMITH, Esq., M.D., C.B., Deputy Surgeon-General, Her Majesty's Forces, Hyderabad Subsidiary Force and Hyderabad Contingent, Secunderabad, to the Secretary to the Surgeon General, Her Majesty's Forces, Madras, dated Secunderabad, 8th December 1883, No 1806

I have the honor to bring to notice of the Surgeon-General that, owing to the very unhealthy state of the lines of the 9th Native Infantry at Begumpett, I have frequently recommended improvement to the court-yards, but, with the exception of one hut, the court-yard of which was altered by the late Major Strettell, partly in accordance with a recommendation made by me the year before last, nothing whatever has been done

2 I would now strongly recommend that when the 9th Regiment, Native Infantry, leave the station for Burma towards the end of this month, the whole of the brick drains in the street be removed and carted away, as being porous they are saturated with sewage from the latrine of the court-yard, and this has now been going on since the lines were built in 1872. When the bricks are removed, the ground should be broken up so as that the sun may get at and purify it a little

3 The ground in the court-yard privy should be cleaned and also broken up in the same way.

4 Storm water from the hut and all parts of the court-yard, except the privy and bathing place, should be led below the door of the hut, and the privy and washing place constructed as recommended by me the year before last on plan sent with quarterly sanitary report, 1st quarter 1882, and again with No 820 of 17th July 1883, or on an improvement of the plan proposed

5 Should nothing be done to improve these lines, I would strongly recommend that the 11th Regiment, Native Infantry, do not enter them in March next when the corps is expected to arrive here

6 The court-yards being very small and confined, might easily be enlarged towards the streets which are broad enough to allow of this

7 As all the sewage soaks up in the drains, there being no chatties even to collect it, this should be altered and the drain under the chabootas at once opened out to the sun and all sewage run into buckets, iron being the best, as formerly recommended

8 Each latrine should have an iron receptacle for night-soil, so as to do away with the filthy system at present allowed. Were Government even to pay for the iron tub and iron receptacle, say in all Rs 1-12-0 per hut, it would be money well spent, nothing whatever having been done to improve the state of the sepoys' lines here

9 In conclusion, I trust that the Surgeon-General will strongly support this and recommend that all native court-yards be put in good sanitary condition, as the health of the sepoy might be vastly improved by these sanitary precautions

I append copy of letter, No 1800, of the 7th instant, addressed to the Major-General Commanding Hyderabad Subsidiary Force on the same subject

C

Forwarded, in continuation of this office report, B, dated 8th January 1884

FORT ST GEORGE,
8th January 1884

(Signed) C CARTER, Lieut-Colonel,
Offg Controller of Military Accounts

No 30. ORDER THEREON, 4th February 1884, No 535

The Right Honorable the Governor in Council learns with regret that, in the opinion of the medical authorities, the high rate of mortality in the 9th Native Infantry since the arrival of the corps at Secunderabad is attributable to the unhealthiness of the regimental lines

2. The Government entirely concur in the opinion of His Excellency the Commander-in-Chief that new lines should be provided as early as possible on another site, and the existing ones abandoned

3 The new site proposed appears to be suitable in every respect.

4 The correspondence will be forwarded to the Government of India, in view to the necessary funds being provided in the budget of 1884-85

No 31. To the Secretary to the Government of India, Military Department, dated 4th February 1884, No 536.

(True Extract)

Lt-Col,

Offg Secretary to Government.

To the Quarter Master General, with the plan
" Controller of Military Accounts
" Surgeon-General, Her Majesty's Forces
" Adjutant-General, for information
Exd. E. C Shunker.

Govt. of (1884) Madras.
MILITARY.

To
THE QUARTER MASTER GENERAL,
&c, &c, &c

Dated February, 4th

Issued

Recd

Encl.

G O., 4th February 1884, No. 535.

FEBRUARY.
Nos 26-31.

Military Buildings—Native Lines.

Secunderabad — Abandonment of the existing Native Infantry lines at — and the construction of new lines on the site proposed, approved, and the Government of India requested to provide funds in the budget of 1884-85.

15/2/85

With order

No 284 Wd 6 Feb 1885

Recorded, in continuation of G.O. No 28 Wd 6 January 1885

22/85

22/85