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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Revenue. DEPARTMENT

G.O. No. 1739, Revenue. Press.
B.P. No. Mis.

Dated 29th october 1878. 197 .

Not to be folded or roughly handled

1739/1

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

29th October 1878, No. 1,739.

Read the following papers :—

No 303. From Lieutenant-Colonel J. SCOTT, R.E., Superintendent, Revenue Survey, to C. G. M[illigan], Esq., Secretary to Government, Revenue Department, dated Ootacamund, 19th August 1878, No. 2,950-126.

My attention has been directed for a considerable time past to a consideration of the measures necessary for the improvement of the methods adopted in the Revenue Survey Department of this Presidency in carrying out topographical surveys, and mapping the results obtained in the field. The Revenue Survey of villages is based on a system of closed circuits run by traverse with theodolite and chain, and the maps are published independently, so that any want of connection and harmony of the traverse work of each may be compared with the results of the Trigonometrical Survey of India is (if not pushed to an excessive degree) indicative of serious errors of survey within the village) not of serious importance. It has been the custom to compare periodically distances between points obtained by traverse and the distances between the same points as calculated by the Trigonometrical Survey Department. This comparison affords a check on the traverse computations as carried out in the offices of the survey parties, and brings to notice any serious instance of accumulated error in the work as closed ; but the comparison has not usually been made until after the survey has been plotted, and it has not been considered necessary after the discovery of discrepancies to reduce the traverses into accordance with Great Trigonometrical Survey data, the accuracy of which is incomparably greater than any work executed with the inferior instruments and methods used for the Revenue Survey.

2. By far the greater portion of the area of this Presidency is covered with first-class triangulation executed either by Colonel Lambton or included in the more modern coast and meridianal series extended to Calcutta. If full advantage were taken of this circumstance and the initial series of traverse circuits laid down by the Revenue Survey were based on this triangulation and made to conform to it, accumulation of error would be prevented, the correct principle of working from whole to part would be followed, a higher standard of accuracy would be attained and moreover the co-ordinates of the principal points laid down in plotting village maps if properly tabulated would be at once available for use in the compilation of topographical and geographical maps on smaller scales. In the taluks recently taken up for survey in South Arcot, this system has been adopted, and I propose to follow it in all future surveys.

3. When we deal with maps on smaller scales including considerable areas of country, it is essential that there should be minute accuracy in projecting points and plotting detail, for it is evident that small errors in lineal dimensions on paper represent in this case large errors on the ground. Moreover, every means must be adopted to prevent accumulation of error, for such accumulation is proportional to the distances measured and the number of observations. In this Department, when the work of completing the survey of districts by the topographical survey of excluded tracts was taken up, the main features of the system adopted consisted in the extension of the traverse circuits over the tracts in question, and the error in the traverse work was ascertained by comparison with the trigonometrical distances, not for the purpose of reducing the inferior work into accordance with the superior work, but apparently as a periodical check for administrative purposes.

The establishment of a number of fixed points within such tracts by the comparatively far more accurate method of minor triangulation emanating from the sides of the large triangles of the Trigonometrical Survey of India has not been adopted, nor has the traverse work been usually fitted to the large triangulation where such existed. The reason of this undoubtedly was that the surveyors were accustomed to the traverse system, while they had had little or no training in trigonometrical surveying. The object in view was the speedy production of taluk maps on the scale of one inch to a mile compiled mainly from the Revenue Survey village maps, and a number of useful publications of this class have been issued.

4. For the purpose of compiling geographical maps required for general purposes and for incorporation with materials supplied by the Survey Department under the Government of India, it is desirable that a higher standard should be aimed at, and indeed before the work already executed can be made use of, a certain amount of reduction and re-compilation will be necessary. As the traverse field books are always preserved, the recomputation of the co-ordinates of the principal points in the main circuits from the G. T. Stations with which they may be connected can be carried out and the G. T. Stations themselves can be projected by means of their proper geographical and geodetical elements, instead of being laid down solely from the traverse angles and distances as measured by the Revenue surveyors. These calculations are in progress. In future, all topographical surveys executed by the Department will be based on the Great Trigonometrical Survey. Supplementary points being fixed by minor triangulation and traverse work corrected in accordance with the data trigonometrically obtained.

5. In the course of the topographical survey now carried on, the surveyors are expected to sketch the hill features as well as to show all such detail as roads, rivers, streams, villages, territorial and administrative boundaries, and to distinguish forest and cultivation. The topographical delineation of the features of the ground requires for its satisfactory execution considerable experience, skill and even some artistic feeling on the part of the sketcher. The results hitherto obtained have not been particularly successful, and it will be necessary to establish a training class and to place some of the more apt of the surveyors under instruction in this branch of topographical surveying.

The work executed in hill sketching and in topographical surveying requires to be copied and transferred in the office to maps properly projected, and unless the standard of execution in office is high, it is useless to aim at excellence in the field. Moreover, as the topographical maps of the Government of India must necessarily be used in connection with those of Madras for all tracts along the border of the Presidency, it is desirable that the projections in both should, as far as practicable, be assimilated.

6 I am strongly of opinion that the interests of the Department require the importation into it of two junior officers of the corps of Royal Engineers who have acquired some experience in the Topographical Survey Department under the Government of India, and of three or four Assistant Surveyors qualified in hill sketching. One officer would be engaged for some time in arranging a proper system of computation for the reduction of the Revenue Survey work into a form suitable for use in compiling geographical and topographical maps and for its initial connection with the G. T. Survey. The other would be required to take charge of the topographical party to which would be attached for instruction and training a certain number of the most competent of those hitherto engaged on the survey of excluded tracts in this Presidency. When a sufficient number of men had been trained, both Engineer Officers would be engaged on topographical survey and minor triangulation. As an immediate step towards the improvement of the topographical drawing in the Central Office, I request the sanction of the Government to the transfer to this Department of Mr. R. A. Gibson, 3rd Draftsman in the Surveyor General's Office in Calcutta, at a salary of Rs. 200 with free passage to Madras for himself and his family. This subordinate has been strongly recommended by Captain Riddell, R.E., the Officer in immediate charge of the Office, and the result

of careful enquiries into his antecedents leads to the conclusion that he would do good service.

7. In connection with this subject I may draw the attention of the Government to their Proceedings, No. 379, dated 11th March 1878, in which the question of the revision and maintenance of the Revenue Survey is referred to. Should two parties be formed to take up the survey of extended cultivation and irrigation in the Godavery, Kistna and other districts, employment would be found for two of the Assistant Superintendents now in the Department. One Officer, Major Baynes, has left it. It is apparent that Mr. [illegible], whose furlough expired last month and who went home in bad health, will not return, and Captain Clerk, Assistant Superintendent, Coorg Survey, who has proceeded on furlough for two years, will probably on his return find employment in Coorg. Under the reorganisation sanctioned in June 1877, three Assistant Superintendents became Supernumeraries, and therefore if the anticipations referred to above are realized, not only will these Supernumeraries be absorbed, but two vacancies in the grade of Assistant Superintendent will be created which could be filled up by Officers of the Royal Engineers.

I should mention that Colonel Walker, R.E., Surveyor-General of India, who responded most cordially to my enquiries regarding the means available for remodelling the Department in certain particulars, and is most anxious to further its interests, gave me to understand that Officers of the class required who were absent on furlough would shortly be available, and indeed himself proposed their transfer to this Department together with the subordinates necessary for training the Madras surveyors in hill sketching and topographical surveying.

8. While making the foregoing propositions and pointing out particular directions in which the methods of working hitherto in force in this Department might be improved, I ought to remark in justice to the Officers who are or who have been employed in it, that the extension of the sphere of its operation to the topographical survey of excluded tracts ought properly to have been combined with considerable changes in its organisation and the practical separation of the Revenue and Topographical surveys.

Under present arrangements, each party completes the survey of the district it is engaged in, and it may have several small detachments employed in more than one district on the survey of excluded tracts. Under these circumstances, it has been impossible for any of the Officers to devote themselves exclusively or indeed more than cursorily to topographical surveying, and none of them have had much opportunity of training themselves or the men in their new duties. The officers are chiefly engaged in the important duties connected with the settlement of boundary disputes and the supervision of the many hundreds of subordinates employed on the numerous detail duties of the Revenue Survey. They are rendering important service to Government in these directions, and, as a body, they are in zeal and devotion to their duties second to none. All of them are fully aware of the urgent necessity which exists for improvement in the methods and training of the topographical surveyors now employed, and I am sure that they will welcome any measure tending to bring about such improvement, and cordially co-operate in the work.

No. 304. From L. C. PROBYN, Esq., Accountant-General, Madras, to the Secretary to Government, Revenue Department, dated Fort St. George, 15th October 1878, No. 338.

In reply to your Memorandum No. 200, dated 8th instant, I have the honor to forward for your information a list of the officers at present attached to the Madras Revenue Survey, from which it will be seen that, allowing for the vacancies alluded to in paragraph 7 of Lieut.-Colonel Scott's letter, and showing Captain Clerk's name in red ink as *seconded* (for which, however, there is no distinct authority), the full complement of sixteen officers sanctioned by the Government of India in the

Revenue, Agriculture and Commerce Department, No. 313, dated the 21st of May 1877, is present; the appointment of two extra officers, in charge of the parties to take up the survey of extended cultivation and irrigation in the Godavari, Kistna and other districts, will therefore, as does not appear to be quite clearly pointed out, form an extra charge, and will need the sanction of the Government of India.

2. It is impossible, in the absen[ce] a more definite proposition, to say what will be the precise effect of the propos[al] he additional charge will be the pay of two "Junior officers of the corps of [En]gineers," but, on the assumption that the Royal Engineer Officers are appo[inted] First Assistants, and that one 1st, one 2nd, and two 3rd-class Assistant S[urveyors] are imported, the additional charge, over and above the present sanctio[n], would be Rupees 1,870 per mensem as follows:—

			Rs.
2	First Assistant	... ...	
1	Assistant Survey[or]	t Grade ...	1,100
1	Do.	d ,, ...	250
2	Do.	d ,, ...	200
			320

3. The special arrangement for a free passage to Madras for Mr. R. A. Gibson and family will need the special sanction of the Government of India.

ENCL[OSURE] No. 1.

GOVERNMENT of India, Revenue, Agriculture [and] Commerce Department, No. 313, dated 21st May 1877. Sanctio[ning] sixteen officers.

1	Superintendent	ut.-Col. Scott, (substantive *pro tem.*)
2	First-Class Deputy Superintendents ...	. Puckle.
		Beaumont.
5	First Assistant Superintendents	. Cardoza.
		Gompertz.
		ajor Clay.
		aptain Freeth.
		. Tomlinson, J. J.
		. Tomlinson, T. A.
5	Second Assistant Superintendents ...	acant (Major Sargeaunt acting).
		ajor Liardet.
		aptain Clerk), *seconded*.
		ajor Sargeaunt, Acting 1st.
2	Supernumeraries	. Merriman.
		Baber.
		. Cooke.
18		Maltby.

of which one appointment is absolutely vacant a[nd] another appointment may be considered as temporarily vacant by the absence of Captain Cl[erk].

No. 305. ORDER THEREON, 29th O[ctober] 1878, No. 1,739.

Miscellaneous.

IN the foregoing letter, Lieutenant-Colonel Scott submits proposals for the adoption by the Revenue Survey Depart[ment] of improvement of the methods hitherto surveys and mapping the results obtained [in] the field."

This measure is necessitated not by the requirements of the Revenue Survey, but "for the purpose of compiling the geographical maps required for general purposes and for incorporation with the materials supplied by the Survey Department under the Government of India."

2. Topographical work for ge[neral purposes formed originally no portion of the duty of the Madras Revenue Survey Department, but in 1869* the topographical survey of excluded tracts was considered with a view to the preparation of complete district maps which the Board had recommended † as "an essential necessity."

* G.O., (Revenue Department), 17th Marc[h] 1869, No. 720.

† *Vide* Proceedings in G.O., 3rd Septemb[er] 1868, No. 2,318.

3. In 1871, the Government e[xpressed a desire to utilize towards the completion of the Map of India, t[he geographical materials afforded by the Madras Revenue Survey. This r[oyal of the methods and work of the Revenue Survey Department wa[s with much satisfaction, and every endeavor has been made to forward t[he views of the Government of India.

4. In submitting his present p[roposals, the Acting Superintendent, Revenue Survey, has the same end in view, an[d asks to import (1) two officers of the Royal Engineers "who have acquired [experience in the Topographical Survey

‡ 3 or 4 Assistant Surveyors and a Drafts[man under the Government of India (Mr. Gibson).

5. These suggestions comment[are] forwarded to the Government of India, [full support, but from the report of the Accountant-General it would se[em that the scale of sixteen superior officers recently sanctioned by the Governmen[t will be exceeded.

A nominal, but not apparently [large] increase of expenditure will thus be necessitated, which, with the additio[nal salaries of the subordinate officers whose services it is intended to app[ly will amount to Rupees 1,870 per mensem.

6. It is, however, possible that [these proposals to the Survey Department here may (by transfer of officers or oth[erwise) be met by corresponding reductions elsewhere, and the Government of In[dia is requested to sanction the additional expenditure which will probably [be necessitated by Imperial requirements.

7. The usual proposition state[ments will be submitted hereafter through the Financial Department.

(T[rue Extract.)

(Signed) L. A. CAMPBELL,
Under Secretary to Government.

To the Superintendent of Revenue Su[rvey],
" the Accountant-General.
" the Financial Department,
" the Board of Revenue.

Exd. W. H. French.

Read the following paper:—

No. 33. From Lieutenant-Colonel A. DEC. SCOTT, R.E., Superintendent, Revenue Survey, to C. G. MATSER, Esq., Secretary to Government, Revenue Department, dated Ootacamund, 19th August 1878, No. 2,950-126.

MY attention has been directed for a considerable time past to a consideration of the measures necessary for the improvement of the methods adopted in the Revenue Survey Department of this Presidency in carrying out topographical surveys, and mapping the results obtained in the field. The Revenue Survey of villages is based on a system of closed circuits run by traverse with theodolite and chain, and the maps are published independently, so that any want of connection and harmony of the traverse work of each map with the results of the Trigonometrical Survey of India is (if not pushed to an excess indicative of serious errors of survey within the village) not of serious importance. It has been the custom to compare periodically distances between points obtained by traverse and the distances between the same points as calculated by the Trigonometrical Survey Department. This comparison affords a check on the traverse computations as carried out in the offices of the survey parties, and brings to notice any serious instance of accumulated error in the work as closed; but the comparison has not usually been made until after the survey has been plotted, and it has not been considered necessary after the discovery of discrepancies to reduce the traverses into accordance with Great Trigonometrical Survey data, the accuracy of which is incomparably greater than any work executed with the inferior instruments and methods used for the Revenue Survey.

2. By far the greater portion of the area of this Presidency is covered with first-class triangulation executed either by Colonel Lambton or included in the more modern coast and meridianal series extending to Calcutta. If full advantage were taken of this circumstance and the initial series of traverse circuits laid down by the Revenue Survey were based on this triangulation and made to conform to it, accumulation of error would be prevented, the correct principle of working from whole to part would be followed, a higher standard of accuracy would be attained and moreover the co-ordinates of the principal points laid down in plotting village maps if properly tabulated would be at once available for use in the compilation of topographical and geographical maps on smaller scales. In the taluks recently taken up for survey in South Arcot, this system has been adopted, and I propose to follow it in all future surveys.

3. When we deal with maps on smaller scales including considerable areas of country, it is essential that there should be minute accuracy in projecting points and plotting detail, for it is evident that very small errors in lineal dimensions on paper represent in this case large errors on the ground. Moreover, every means must be adopted to prevent accumulation of error, for such accumulation is proportional to the distances measured and the number of observations. In this Department, when the work of completing the survey of districts by the topographical survey of excluded tracts was taken up, the main features of the system adopted consisted in the extension of the traverse circuits over the tracts in question, and the error in the traverse work was ascertained by comparison with the trigonometrical distances, not for the purpose of reducing the inferior work into accordance with the superior work, but apparently as a periodical check for administrative purposes.

The establishment of a number of fixed points within such tracts by the comparatively far more accurate method of minor triangulation emanating from the sides of the large triangles of the Trigonometrical Survey of India has not been adopted, nor has the traverse work been usually fitted to the large triangulation where such existed. The reason of this undoubtedly was that the surveyors were accustomed to the traverse system, while they had had little or no training in trigonometrical surveying. The object in view was the speedy production of taluk maps on the scale of one inch to a mile compiled mainly from the Revenue Survey village maps, and a number of useful publications of this class have been issued.

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6. I am strongly of opinion that the interests of the Department require the importation into it of two junior officers of the corps of Royal Engineers who have acquired some experience in the Topographical Survey Department under the Government of India, and of three or four Assistant Surveyors qualified in hill sketching. One officer would be engaged for some time in arranging a proper system of computation for the reduction of the Revenue Survey work into a form suitable for use in compiling geographical and topographical maps and for its initial connection with the G. T. Survey. The other would be required to take charge of the topographical party to which would be attached for instruction and training a certain number of the most competent of those hitherto engaged on the survey of excluded tracts in this Presidency. When a sufficient number of men had been trained, both Engineer Officers would be engaged on topographical survey and minor triangulation. As an immediate step towards the improvement of the topographical drawing in the Central Office, I request the sanction of the Government to the transfer to this Department of Mr. R. A. Gibson, 3rd Draftsman in the Surveyor General's Office in Calcutta, at a salary of Rs. 200 with free passage to Madras for himself and his family. This subordinate has been strongly recommended by Captain Riddell, R.E., the Officer in immediate charge of the Office, and the result of careful enquiries into his antecedents leads to the conclusion that he would do good service.

7. In connection with this subject, I may draw the attention of the Government to their Proceedings, No. 379, dated 11th March 1878, in which the question of the revision and maintenance of the Revenue Survey is referred to. Should two parties be formed to take up the survey of extended cultivation and irrigation in the Godavery, Kistna and other districts, employment would be found for two of the Assistant Superintendents now in the Department. One Officer, Major Baynes, has left it. It is apparent that Mr. Wright, whose furlough expired last month

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I should mention that Colonel Walker, R.E., Surveyor-General of India, who responded most cordially to my enquiries regarding the means available for remodelling the Department in certain particulars, and is most anxious to further its interests, gave me to understand that Officers of the class required who where absent on furlough would shortly be available, and indeed himself proposed their transfer to this Department together with the subordinates necessary for training the Madras surveyors in hill sketching and topographical surveying.

8. While making the foregoing propositions and pointing out particular directions in which the methods of working hitherto in force in this Department might be improved, I ought to remark, in justice to the Officers who are or who have been employed in it, that the extension of the sphere of its operation to the topographical survey of excluded tracts ought properly to have been combined with considerable changes in its organisation and the practical separation of the Revenue and Topographical surveyors.

Under present arrangements, each party completes the survey of the district it is engaged in, and it may have several small detachments employed in more than one district on the survey of excluded tracts. Under these circumstances, it has been impossible for any of the Officers to devote themselves exclusively or indeed more than cursorily to topographical surveying, and none of them have had much opportunity of training themselves or the men in their new duties. The officers are chiefly engaged in the important duties connected with the settlement of boundary disputes and the supervision of the many hundreds of subordinates employed on the numerous detail duties of the Revenue Survey. They are rendering important service to Government in these directions, and, as a body, they are in zeal and devotion to their duties second to none. All of them are fully aware of the urgent necessity which exists for improvement in the methods and training of the topographical surveyors now employed, and I am sure that they will welcome any measure tending to bring about such improvement, and cordially co-operate in the work.

No 2950
126

Revenue Survey Office
Camp: Cotacammund
19th August 1878.

From

The Superintendent Revenue Survey

To

The Secretary to Government
Revenue Department

Sir

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of the Officer to devote themselves ex-
-clusively or indeed more than cursorily
to topographical Surveying and none of
them have had much opportunity of
training themselves or the men in their
new duties. The Officers are chiefly engaged
in the important duties connected
with the settlement of boundary disputes
and the supervision of the many hundreds
of subordinates employed on the numerous
detail duties of the Revenue Survey. They
are rendering important service to Govern-
-ment in these directions and as a body
they are in zeal and devotion to their
duties second to none. All of them are
fully aware of the urgent necessity which
exists for improvement in the methods
and training of the topographical Surveyors
now employed, and I am sure that
they will welcome any measure tending
to bring about such improvement and
cordially cooperate in the work.

I have the honour to be
Sir
Your most obedt. Servant

A. W. Scott Lt. Colonel R.E.
Superintendent Rev. Survey

Sp 11-3-78 and 104-108.
" 25-6-77 - 522-23.

FORMER CASES

No. 1739 of 187
" 12 "

RECEIPT No.

Dated

LATER CASES

No. of 187

" "

Revenue 1878 Deptt
No 3726

From

The Superintendent Revenue Survey.

To

The Secretary to Government
Rev Dept.

Dated 19
Despatched 24
Received 26

Enclosure No.

General No. 2950
Departmental No. 126

Subject.

REFERENCE.

E1

GO 29 October 78 No 1739

Topographical Surveys—
Submits certain proposition
for the improvement of
the methods adopted
in carrying out — in
the Madras Presidency.

No 303 -

C 23-9-78 RC 22-11-78
R 7-10-78 H 28-10-78

DEPARTMENT.

No. 338 M

Fort Saint George,
Accountant General's Office,
15th October 1878.

FROM THE ACCOUNTANT GENERAL
TO THE GOVERNMENT OF MADRAS,

TO THE Secretary to Government
Revenue Department

SIR,

In reply to your memo No 200 dated 8th Instant, I have the honor to forward for your information a list of the officers at present attached to the Madras Revenue Surveys, from which it will be seen that, allowing for the vacancies alluded to in para 3 of Lieut Col Scott's letter, and shewing after Clerk's name in red ink as seconded (for which however there is no distinct authority) the full complement of 16 officers sanctioned by the Government of India in the Revenue Agriculture and Commerce department No 313 dated the 21st of May 1877 is present: the appointment of two Extra Officers, in charge of the parties to take up the Survey of Extended cultivation and

Lieutenant

Irrigation in the Godavery, Kistna, and
Other Districts will therefore, as does not
appear to be quite clearly pointed out from
an Extra charge, and will need the Sanction
of the Government of India.

2 It is impossible, in the absence of
a more definite proposition, to say what
will be the precise effect of the proposal.
The additional charge will be the pay of two
"Junior officers of the Corps of Royal Engineers"
lent, on the assumption that the
two officers are appointed as 1st Assistants,
and that one first, one second, and two
third class Assistant Surveyors are imposed,
the additional charge over and above the
present Sanctioned Scale, would be Rs
1870 per mensem as follows.

2	1st Assistants	1100
1	Asst. Surveyor 1st Grade	250
1	do. do 2d do	200
2	do do 3d. do.	320.

Yet

3 The Special arrangement for a free
passage to Madras for her R. A. Gibson
and family will need the Special Sanction
of the Government of India.

I have the honor to be
Sir
Your obedient Servant

Accountant General

In Orders

From Lt. Col. Scott
Adj. Genl. Rev: Survey
d: 19th Augt. 1836 No: 2950-126

Before forwarding on leave Col. Scott submitted the accompanying paper which has for its more immediate perusal, been printed before disposal.

It relates to a method of the improvement of the methods hitherto adopted in this Presidency by the Rev: Survey

"in carrying out topographical surveys terminating the results obtained in the field".

2 It appears to have been customary to check the work of the Rev: Survey by comparison with the

Colonel Scott is no doubt right - He started in 1856 or 58 on a village-survey - gradually increasing accuracy & wider aims have led him on us & now practically he has trigonometrical survey division to use on material (topographical) for India maps & he thinks work out verified &c by his supplementary & the Grand T.S. of India - Col Scott proposes to meet this practically constantly a check branch of that system in connection with our Revenue survey - & I do not see how we can fairly object to the proposition. Read between the lines possibly he admits

No 304-

To
The Secretary to Govt
Revenue Department

Dated 15th Sept. 36
Recd. 16th
Answd.

Subject.

Forwards with Enclosures a List of Officers &c. present at the Levee held on the 14th Instant

Fort St. George 16th Sept. 1836

A 25th Sept. 1836

Revenue (1079) Department,
Accts. Genl.'s Office, Madras.
No. 3304
From
The Accountant General, Madras,

222-10-25
2 25-10-36

the details of the great Trigonometrical Survey - Col Scott is now making the new work of the Ord. Survey start from & conform to the "first class triangulation" which that Survey has covered over the greater portion of the area of this Presidency"

But as this practice has not hitherto been followed (apparently as unnecessary for the purposes of a Revenue Survey) it now becomes requisite for the purposes of the Geographical maps required by the Govt. of India to effect a vast amount of reduction, recomputation

Rel on Material & men alike fail Hon. Officers now experiment: Col. Priestly kept this from us & possibly did not realize the shortcoming Major Kay the necessity exists & endeavors to meet it - But we want a practical exposition - a plain Statement - of the cost of this school & this new branch & to know by how much it will [illegible] narrow both our expectations of completing the Survey for Rev. purposes

27/9 [illegible]

Re proposal (Dr. Cunningham) the employment of Indian Govt. Surveyors [illegible] to be made available for use in mapping the country is only a fresh complication & Col. Priestley & the Govt. of India to create & educate & maintain a body of Eurasians. The 20 Inflictions on him or

in this determination that and the higher regions of mine - skirt the mountain for inspection & examination & connecting our triangulation & Survey in the Great Himalaya in the Geographical & topographical Survey of India. The Engineer must is an Empirical one & [illegible] that the Govt. this Survey forms is a Government - Natives must take care how they [illegible] purposes before them. The fact that the Govt. [illegible] Govt. surveyor [illegible] trained [illegible] adaptation & the [illegible] work of mapping India [illegible] with satisfactory

& recomputation in order to connect the part-work with the G. T. Survey.

3. It is also necessary first, that the work of the Topographical Survey now being carried on should be done in a manner superior to that hitherto followed & 2nd that this field work should be "copied & transferred in the office & checked properly projected"

For this purpose Col: Scott applies to obtain from the Topographical Survey Department under the Govt. of India two RE officers - one to train the topographical party in field work the

other to arrange
"a proper system of
computation for the
reduction of the Res. Survey
work into a form suitable
for use in compiling the
Geographical & topographical
maps & to ensure central
connection with the
G.T. Survey"

Eventually when there
are sufficient trained
topographical Assistants
with officers might be
charge of parties.

4 Lastly
as an immediate
step towards the
improvement of the
topographical drawing
in the Central office"

Col Scott wishes to
get from the Surveyor
Generals office a Mr
Gibson (who has been
recommended to him)
"at a salary of Rupees
200 with a free passage
to Madras for himself
& his family".

5. Col: Scott gives
reasons for thinking
there will be two

as long as the present
Col. Society of this office
exists & there is every
prospect of its doing
the Survey for many years
to come, & the
Surveyor General & the
Superintendent of the
Trigonometrical Survey
will be members of
the Council of Administration
in charge of the operations
of the Survey Department
there will be no
difficulty in obtaining
the assistance of
this officer.

Col Scott distinctly states
that this Topographical
work is to participate
in the benefit which has
been graciously
granted to the Survey
by the Secretary of State
for the Trigonometrical
Survey, & that
in case of the appointing &
completion of any duties
there may from time to time
be in connection with
this work
the Surveyor General
will be consulted by
the Revenue Survey
Department.

it is not clear from Col. S.
paper that the 2 R.E. officers
to aid & instruct the
Establishment &c. &c. & their
appointment &c. &c. &c.
entail additional cost
to the State, but presently
there might be an
opportunity for Directions
in the Instructions
to be issued.

As the proposal
in view & touching our
Topographical work
is fully workable. there
can I think be no doubt
but it is for the Govt.
of Bombay
to carry into execution.

Col Scott pays a
tribute of hearty appro-
-ciation to the work
done by the Revenue
Survey officers & points out
that they are in no
way to blame because
the work of the Topographical
Survey has not kept
& cannot be properly
executed by them
contemporaneously
with the Revenue
Survey.

L.R.

3.10.78

vacancies in the Staff
Assistant Superintendent
which could be filled
by the R.E officers he
desires to obtain, but
whether this be so
or no, this topographical
& geographical work
is really Imperial &
no doubt the Govt. of India
will readily sanction
what will be
necessary to its successful
execution.

Borders

Topographical Survey

No 26

GO 29 Oct 78 & 17 Jan 79

C 23-9-78
R 1-10-78
C 22-10-78
R 25-10-78

Government of India Revenue Agriculture and Commerce
Dep.t No 313 dated 21st May 77. Sanctioned 16 officers.

1	Superintendent	Lieut.-Col. Scott. (Substantive Pay)
2	1st Class Dy. Superintendents	Insp. Purkle
		Beaumont
3	2d Do. - Do.	Lieut.-Col. Scott.
		Mr. Cardoza
		" Gomperts
5	1st Asst. Superintendents.	Major Clay
		Capt.n Frewin
		Mr. Foulkes I.S.
		" Foulkes I.A.
		vacant (Major Sargeaunt acting)
5	2d Do - Do.	Major Liardet.
		(Capt.n Clerk.) seconded
		Major Sargeaunt as 1st.
		Mr. Merriman
		" Baker
2	Supernumeraries.	Mr. Cooke.
		" Maltby.

187

* of which one appointment is absolutely vacant and another appointment may be considered as temporarily vacant by the absence of Capt.n Clerk.

No 1709

f. 0 dy 29 Octobr. 1878

From Supt. Peshawar
d: 19th Augt. 78
No 2950
126
From Asst Genl.
d: 15th Oct. 78 No 3381

In the foregoing letter Lt. Col Watt submits proposals for the improvement of the methods hitherto adopted by the Revenue Survey Departt. "in" carrying out topographical surveys & mapping the results obtained in the field."

This measure is necessitated not by the requirements of the Revenue Survey but "for the purpose" of compiling the geographical maps

Required for general purposes and for incorporation with the materials supplied by the Survey Depart: under the Govt. of India."

2. Topographical work for geographical purposes formed originally no portion of the duty of the Madras Revenue Survey Depart: but in 1866 the topographical Survey of excluded tracts was ordered with a view to the preparation of complete District maps which the Board had recommended as "an Imperial want"

T G.O. (R.D.) 17 March 69 No: 720.

T vide Bpp in G.O. 3 Sept. 68 No: 2318.

3. In 1871 the Govt. of India intimated a desire to utilize towards the completion of the Imp. Topographical the valuable materials afforded by the Madras Revenue Survey. This mark of approval of the methods & work of the Revenue Survey Depart: was received with much satisfaction & every endeavour has been made to forward the wishes of the Government of India & in submitting this present proposals the Topl. Survey has the same

end in view the
desires to support
a two officers of the
Royal Engineers
who have acquired
some experience
in the topographical
Survey Depart: under
the Govt. of India"
& 2 "certain" subordi-
-nates trained in
the same Department

+ 3 or 4 assistant surveyors
& a draftsman (Mr. Gibson)

5. These suggestions
I commend the consideration
to Government & they
be forwarded to the
Government of India
with their full
support, but from the
report of the Accountant
General it would
seem that the
scale of sixteen superior
officers recently
sanctioned by the
Govt. of India will be
exceeded

Some pinkard
Wanted here

Annual, but
not apparently a
real, increase of
expenditure as
items be anticipated
which, with the
addition of the salaries
of the subordinate
officers whose services
it is intended to
apply for, will
amount to Rs 1870
per annum.

6. It is however
probable that these
additions to the
Survey Depart: here
may be met by
corresponding
reductions elsewhere
and the Govt. of India
will be requested
to sanction the
additional expenditure
which will probably
be involved but
which is anticipated

Lay Imperial Establishments

Lab

GW

7. The usual proposition statement will be submitted hereafter through the Financial Report.

Lab

12 Feb Secretary Revenue Dept 1878
5 The Accountant General
6 The Financial Dept
13 Board of Revenue

Topographical Surveys

GO 29 October 78 No 1739

Copy

(12/21)

A proposition slip is sent in the name of Mr. Cowie called for — memorandum and circulated

Ob 30th 6 306—

C 22-10-78.
R 28-10-78.