

Francis Hanning XXXII of
since all ~~was~~ proper
instituted during his stay
those Parties

(Signed) R. L. ANTROBUS



EAST AFR. PROT.
ZANZIBAR
9030

DOMESTIC
C.O.
9030
RECD
14 MAR 09

Fee or Individual.

Foreign

1909

1/3 Mch.

at Previous Paper.

Survey of Zanzibar

Report on proposal for - 4 encloses memo.
dated 31.8.08 by D.M.S. - Submit same
and acts that matter be laid before the
Colonial Survey Committee.

Dr. Brythamley (Print - 4) lay before the
Colonial Survey C^o.

at me.
H. J. R.

W. Read.

15 JUL
Submit diff - agreed to be in C.S.C.
subsequent paper.

6th
17/4

W. Read

Extract from minutes of C.S.C.
meeting of 16 July, together with a copy of the
correspondence between D.M.S. & I. I have only
just received the copy of the F.O. note of July
5th. In order to complete the record that
D.M.S.'s reply of 18 July should be
inserted?

at me. July? 6th. 9.8.09
H. J. R. 9/10/09

A. & F. W. - 5000/21 - 5000-11.08.

subsequent Paper

5. Survey of Zanzibar.

Colonel Close read a despatch from Mr. Clarke, Agent and Consul General, which had been sent to the Director of Military Operations by the Foreign Office. Mr. Clarke agreed generally to the proposals made by the Committee as to the survey of Zanzibar, and suggested that the necessary staff might be obtained from India. It was pointed out that an attempt to get men from India had failed in 1908, and was not now likely to be more successful. Colonel Grant said that in that case he would be willing to lend the staff required from the Ordnance Survey. It was agreed that a letter should be sent to the Foreign Office in these terms.

W. B. Stanley

1030



C. O. 9030 98
REC'D
Rcvd 15 MAR 09

In any further communication on this subject please quote
No. 8621/09.
and address
The Under-Secretary of State,
Foreign Office,
London.



FOREIGN OFFICE
March 13 1909.

Sir:-

I am directed by Secretary Sir E. Grey to state, for the information of the Secretary of State for the Colonies, that he has received a despatch from His Majesty's Acting Agent and Consul General at Zanzibar on the subject of a proposed survey of Zanzibar Island.

It would appear that the Zanzibar Government, to whom a memorandum on the subject prepared by the Director of Military Operations (copy enclosed) had been submitted, are of opinion that it would be a waste of money to have a cadastral survey of the Island made, in view of the fact that a map exists on a two inch scale, drawn up from a trigonometrical survey. They also think it very doubtful whether it is desirable to make a survey, which would show the boundaries of all the properties, as some of these are very small and are being constantly divided. It is stated also, that

land

Under Secretary of State,
Colonial Office.

8621-20

(8621/09)

land in the country districts is of not much value of itself, and is bought and sold by the number of productive trees, such as cloves and coconuts which it contains and certain of these trees are used by the natives to define their boundaries. In many cases also on the death of an owner it is not the land itself but the trees which are divided amongst the inheritors.

The Zanzibar Government are therefore of opinion that the best plan would be to mark out definitely and re-survey (1) the properties belonging to the Government; (2) the larger properties of private owners.

For this purpose the Director of Public Works is of opinion that an enlargement of such sheets of the present Map as are necessary should be made to a scale of either four or six inches to the mile, and that roads and villages should be shown more in detail, and areas of agricultural and waste land should be clearly defined on the present Map.

As regards the Island of Pemba, as no survey has ever yet been made and the only map in the possession

of the *Authorities* is a tracing of the Admiralty Chart, on which have been roughly shown the roads and the boundaries of districts, the Zanzibar Government deem it very desirable that a complete survey of this Island should be made. They think that probably the best course would be to follow the same lines as suggested above commencing with a survey of the whole Island on a two inch scale.

As to the question of surveyors to carry out the work, there is apparently some difficulty in obtaining the loan of officials from the Indian Government. Should none be procurable from this source, the Zanzibar Government would suggest either engaging the men in England, or, provided the work could be thoroughly depended upon without the employment of an expert to check it, entrusting the survey, under contract, to some reputable firm in England. The Indian Government, it might be stated, would be willing to supply the necessary instruments on book debit taking them back on the completion of the survey at the valuation of the

Surveyor

(8621/09)

Surveyor-General of India.

Sir E. Grey communicated to the Director of Military Operations the above-mentioned observations of the Zanzibar Government, and Major General Ewart has, in reply, stated that he can offer no opinion as regards the desirability, under the special circumstances, of showing the boundaries of all the properties, but that the proposal to enlarge the existing map is not without its obvious objections, the chief of which perhaps is that small errors on the two inch scale become increased out of all proportion if the map is enlarged and render it very untrustworthy.

General Ewart adds that the matter might be referred to the Colonial Survey Committee, who could, in their turn consult, as suggested by His Majesty's Acting Agent and Consul General at Zanzibar, the Commissioner of Works of British East Africa, who is at present on leave of absence in England.

I am accordingly to state that Sir E. Grey would be grateful, should the Earl of Crews have no objection,

if the whole question could be laid before the Colonial Survey Committee in accordance with General Ewart's suggestions.

I am, *to*

Sir,

Your most obedient,

humble servant,

W. Langley

land in N 1/2



1416)

ZANZIBAR
CADASTRAL SURVEY.

1. The object of the cadastral survey of Zanzibar being the construction of a map of the islands excluding the town area, the map should show the boundaries of all properties, should give the area of each property, and indicate the owner.

2. The character of the survey should be such that no resurvey should be required after its completion, although from time to time revision would be carried out in places where property boundaries may have altered. It is therefore necessary that an accurate framework for the map should be constructed, that the points of this framework should be permanently marked on the ground, and that the relative positions of the points should be recorded and published.

3. The data available for preparing a scheme and estimate are:-

- Area of Zanzibar - 640 square miles.
- Population, town 56,000 - rest of island 120,000
- Of this population, the Arabs, who form the land-owning - 6

land-owning class, number about 10,000.

The chief vegetable products are cloves and coconuts, there are also cassava fields, and in the eastern portion, chilli patches. In size, the estates vary from 2 to 60 acres, the average being about 12 acres. But there will certainly be cultivated patches as small as $\frac{1}{4}$ acre.

4. The scale of the map should be the smallest which will give the required information conveniently. If 2 acres is taken as the lower limit of area of estates properly so-called, and if it is assumed that $\frac{1}{4}$ sq. inch ($\frac{1}{2}$ inch square), is the smallest area on paper which can be measured conveniently, the scale which meets these conditions is $\frac{1}{3000}$ (about 12 $\frac{1}{2}$ inches to 1 mile).

5. Each sheet might be 2 miles square, (4 sq. miles); more than 160 sheets will be required to cover the island.

6. Technical details.

(i) The framework should as far as possible be trigonometrical. The islands are 47 miles long by 20 broad, and have hills rising 450 feet, and as a good topographical map exists, it should not be difficult to

cover

cover Zanzibar with a triangulation of which the sides should vary from 3 to 6 miles. Taking the average side as about 4 $\frac{1}{2}$ miles, about 60 main points will suffice for the whole area.

In addition to these main points, about 400 secondary and intersected points should be fixed, each of the latter by at least 3 intersections.

There will then, on an average, be 3 trigonometrical points on each sheet. All these points should be permanently marked.

(ii) No doubt in parts of the islands the vegetation and coconut plantations will make triangulation difficult. In such parts, it should be given up and main traverses should be substituted and the points marked.

(iii) The detail should be fixed by theodolite traverses run between points fixed as above. These minor traverses should be cut up by simple chaining. The exact amount of each can only be decided in the country.

(iv) The standards of accuracy should be:

(1) Bases for triangulation $\frac{1}{50,000}$

(2) 7

- (2) Main triangles, triangular error not to exceed 5".
- (3) Azimuths, p. s. 2".
- (4) Chaining main traverses $\frac{1}{5000}$
- (5) Chaining minor " $\frac{1}{1000}$
- (6) Angles, main traverses, 10"
- (7) " minor " 30".

(v) The work should be taken up systematically sheet by sheet.
 The diagram for the whole island should be prepared before the work is commenced.

The triangulation and traverse points should be referred by rectangular co-ordinates to an initial meridian. Each sheet should be strictly rectangular.

7. The party should not work all the year round but there should be a recess season during which the sheets should be fair drawn and the computation brought up to date and arrangements made for reproducing the sheets.

8. It is not necessary to triangulate the whole island at once. Only sufficient triangulation should be done to provide fixed points for, say, the next two seasons' work.

- 9. The party might conveniently consist of:
 - 2 European Surveyors
 - 3 Indian "

chairmen, labourers, &c.

10. Cost.

The estimated cost of $\frac{1}{10,000}$ work in Uganda is (a) £8 a square mile. $\frac{1}{5,000}$ work would be about double this say £16 a square mile. (In East Africa the surveyors' fees are £12 a square mile, this does not include the trig. framework). Or the question of cost can be approached in this way. A party of the strength described above might be expected to survey 100 square miles a season.

The cost would be 1 surveyor	£500
1 " "	350
3 Indians	450
Chairmen	300
Labourers	300
Contingencies	100
	<hr/>
	£2,000

The cost would thus work out

- (b) to £20 per square mile.

Taking a mean between (a) and (b), the cost may be

taken as £18 a square mile, and assuming the area required to be surveyed to be effectively $\frac{2}{3}$ rds of the entire area of 640 square miles, as a first approximate estimate the total cost may be put down as 426 X 18 or £7,668.

To this sum must be added:-

Passages	£500
Purchase of instruments.	500
Signals and marks	800
Publication of plans and records	300
(Cost of delays due to sickness)	?
	£2,100

The total cost will then be £9,768 (say £10,000) spread over 4 or 5 years.^x

11. When the Superintendent of the Survey is appointed he should be directed to draw up a detailed estimate.

(Signed) C. F. Close.

31.8.08.

^x It is assumed that there is office accommodation and that Government quarters can be found for the 2 surveyors during the recess season.

COPY.

23124/09.



The Under Secretary of State for Foreign Affairs presents his compliments to the Director of Military Operations and, with reference to Major-General Ewart's communication of March 4th last, No. 4/Africa/179, is directed to transmit herewith a further despatch with its enclosures which has been received from His Majesty's Agent and Consul-General at Zanzibar respecting the proposed survey of that Island.

The Secretary of State concurs in Mr. Clark's proposals, but would be glad to have any observations which Major-General Ewart may have to offer on them before approaching the Secretary of State for India.

Foreign Office,

July 5th, 1909.

No. 128.

Zanzibar,

June 1st, 1900.

Sir,

I have the honour to acknowledge the receipt of a memorandum from the General Staff dated the 4th March last enclosed in a private letter from Mr. Tilley of the 4th Day on the subject of the projected survey of this Protectorate.

I regret that Mr. Sinclair's despatch No. 460 of the 25th December last should have been written under a misapprehension of the circumstances.

It is quite true as stated in Major General Ewart's memorandum that the memorandum enclosed in your No. 248 of the 11th September last was written with a perfect knowledge of all the facts connected with the existing survey of Zanzibar which indeed, as far as I remember the circumstances, was considered at the time I discussed the matter with Major Close at the Foreign Office to be perfectly useless as a basis for any effective survey of the island.

I propose accordingly to set aside the sum of two thousand and five hundred pounds in the estimates for next year as the cost during 1910 of a survey based on Major Close's memorandum and designed to be concluded within the space of four years. It seems

obvious

The Right Honourable,
Sir Edward Grey, Bart., M.P.
&c. &c. &c.

£2,500

obvious that the most feasible and economical plan would be, if the Government of India are willing to assist us, to place the matter in their hands.

It will be seen from copies of correspondence with that Government which I have the honour to enclose herewith that although they could not supply us with native surveyors, they are willing to let us have the necessary instruments on loan and it is probable that they considered the work of too intricate a nature to be left to a native. I would therefore suggest that the Government of India should be again approached through the India Office with a view to ascertaining whether they would allow one of the Provincial Officers to whom they refer to be seconded to carry out the work and if in this case the necessary staff would also be lent to us.

It would probably save much time and consequently no little expense were the surveyor, Mr. Imam Sherif Khan Bahadur, of the Survey of India, who carried out the previous survey of the island of Zanzibar in 1899-1901, appointed to be a member of the next survey party. There is no doubt that the Island in that survey was triangulated but the original plans and calculations cannot be found here, and it is not improbable that they have been filed in the Indian

Survey

Survey Department, or it is possible that they may be
in the hands of Messrs. Stanford of Trafalgar Square
who lithographed the map.

I have the honour to be,
with the highest respect,
Sir,

Your most obedient humble servant,

(Sgd.) Edward Clarke.

Inclosure 1 in Mr. Clarke's No. 128 of June 1st, 1909.

Mr. Gebbie to Mr. Davis.

L.No. 175.

Zanzibar,

30th June, 1909.

Sir,

Survey of Zanzibar and Pemba Islands.

Your letter No. 214/09 of 4th June 1909.

I have the honour to acknowledge receipt of the above letter and to state that I have gone thoroughly into the matter and consider that the following staff would be necessary for the survey of Zanzibar and Pemba Islands:-

Three experienced surveyors who are capable of doing a trigonometrical survey and who could be trusted to do their work without continual supervision. With regard to their pay I cannot say what they would expect as the survey of India Department is one of which I do not know anything but consider Rs. 300/- to Rs. 400/- a month would be ample for the class of men we require.

Each man should have at least three good survey Khalassis with him as such men are unobtainable

here

here, their pay would probably be Rs. 30/- to Rs. 60/- a month.

Other labour for the work such as clearing jungle, carrying instruments etc., is obtainable here.

A ten inch theodolite would be required for doing the triangulation, the cost of this at home is £105/0 but arrangements might be made with the Government of India to hire one to this Government.

If the original survey plans of the Island of Zanzibar or the triangulation plans are obtainable a great deal of labour and expense would be saved.

I propose to start the work in Zanzibar Island first placing one surveyor in each sub-division until the work is complete and then transferring them to Pemba.

I note a survey is asked for showing the boundaries of all properties and would remark that this appears to be unnecessary and that unless the plans were made to a very large scale it would be practically impossible to show accurately a great many properties owing to their area being so small. I would suggest however that boundaries of all Government estates be shown, that roads and villages be shown in more detail than on the existing plan and that land under different crops and waste land be shown as accurately as possible.

With

With regard to Government shambas I would suggest that large scale plans on separate sheets for each shamba be made giving full details of all planted areas etc.

With regard to the scale on which the plans are to be made I suggest one plan on a scale of one inch to the mile as at present and a more detailed one on a scale of four inches to the mile unless a larger scale be considered desirable.

In addition to the 10" theodolite mentioned above two more 6" theodolites would be necessary in addition to chains, tapes etc. As we have enough instruments in this office for ordinary use the Government of India might also be approached with a view to hiring the necessary instruments for the purpose of the survey.

I may say the survey of Zanzibar Town was started some time ago and is at present in progress.

I have etc.,

(Sgd) F. St. John Gabriel,
Director of Public Works.

Inclosure 2 in Mr. Clarke's No. 128 of June 1st 1908.

Mr. Cave to Secretary, Government of India.

No. 222.

Zanzibar,

July 14th, 1908.

Sir,

In the years 1892 and 1899-1901 the Government of India were good enough to lend to the Zanzibar Government the services of a native surveyor named Imam Sherif Khan Bahadur, who carried out the survey of the islands of Zanzibar and Pemba on a small scale.

The Zanzibar Government are now desirous of extending the survey and have requested me to approach the Government of India with a view to ascertaining whether they would be willing to again assist them.

I have the honour to enclose herewith a copy of a report by the Director of Public Works stating the nature of the work and probable requirements in the way of men and instruments and I should be much obliged, in the event of your Government consenting to comply with this request, if you would be so good as to furnish me with an estimate giving the approximate cost per managem which would fall upon the Zanzibar Government.

I should also be glad to know whether the required instruments could be supplied by the Government of India.

I would add that if Imam Sherif is still available it would be advantageous, on account of his knowledge of the country and language, if he could be included in the three surveyors asked for.

I have etc.,

(~~Sgt.~~) Basil A. Cave.

Enclosure 3 in Mr. Clarke's No. 128 of June 1st, 1909.

Secy to Govt. of India to Mr. Cave.

(Land Surveys)

Calcutta.

18th November, 1909.

Sir,

I am directed to acknowledge the receipt of your letter No. 222 dated the 14th July last in which you state that the Zanzibar Government are desirous of extending the survey of Zanzibar and Pemba Islands and enquire on behalf of that Government whether the Government of India would be willing to assist them. You also enclosed a copy of a report by the Director of Public Works stating the nature of the work and probable requirements in the way of men and instruments.

2. In reply I am directed to express the regret of the Government of India that they are unable to help in the matter of Surveyors. Volunteers were called for by the Surveyor General of India but no suitable men offered their services. The Surveyor General considers that the qualifications expected are

high

high, and that as a rule they would only be found in this country among "Provincial" officers of the Department. Iqam Sherif whose name you mentioned does not appear to be available.

3. I am to add, as regards the instruments required, that this Government is willing to supply them to the Government of Zanzibar on loan debit and to take them back when they are no longer wanted at a valuation to be fixed by the Surveyor General of India whose decision in the matter would be final.

I have etc.,

(Sgd) R.W. Carlyle,

Secretary.

9030

Director Military Operations to F.O.

118

b.c./Africa/179.

War Office

General

17th July 1909.



The Director of Military Operations presents his compliments to the Under Secretary of State for Foreign Affairs and begs to acknowledge the receipt of Mr. G. Carducci's note No. 20120/09 of the 12th July, 1909, and his desires, on the subject of the proposed loan of a staff.

Major-General Ewart is of opinion that in view of the Government of India letter of the 18th November, 1908, and of the well known fact that the survey of India is now working under considerable pressure, it is unlikely that the Government of India will be able to spare the staff required.

Major-General Ewart has referred the matter to the Colonial Survey Committee and finds that the Committee take the same view.

Major-General Ewart would suggest that the simplest plan will be to arrange, with the

2143-20

approval of the President of the Board of Agriculture and Fisheries, for the work to be undertaken, in the period, and for the sum named, by the Director General of the Ordnance Surveys, who could detach a party for the purpose. In view of all the circumstances of the case the scale of the map might be generally 1:17,000, the 1:11,000 scale being reserved for the more intricate and densely populated portions of the island.



70
9030/09

2000
Tangitau
JL

120

9
2

DRAFT

The U.S.
Foreign Office

Gas 17/4
Ward 178

Dear Sir,
22 April 1909

I am directed by the
Board of Commissioners to
acknowledge your letter of
the 13th of March
concerning the case of H. H.
Cochran, Agent General and
Council General at Tangitau
on the scheme drawn up
by the Director of Maritime
Operations for a survey
of the Island of Tangitau.

2. ~~I am to request you to~~
~~advise me by return of post~~
~~that how (was caused)~~
Your letter to be referred to
the Ad. Survey Committee,
who conducted the meeting,

and he will
advise you that it
should be explained to
the Survey that the scheme
for a complete survey of
the island and the adjacent

9030

a detailed account
of the persons connected
with the Wilson

Charles, ~~the~~ ~~man~~ ~~was~~
from ~~the~~ ~~fact~~ ~~of~~ ~~his~~ ~~ability~~
as Mr's Agent and Counsel
General ~~in~~ ~~the~~ ~~landship~~
~~the~~ ~~Yorkshire~~ ~~Department~~

when he
was in charge of
the Yorkshire Department
at the F.O.

think that ~~the~~ ~~fact~~ ~~is~~ ~~that~~
would ~~therefore~~ ~~suffice~~ ~~that~~
had ~~any~~ ~~other~~ ~~person~~
suitable to
attendable & in the first
place to ascertain the

Charles ~~was~~ ~~on~~ ~~the~~
subject before ~~the~~ ~~Committee~~
express my opinion on the
alternative proposals
outlined in your letter.

~~As~~ ~~has~~ ~~been~~ ~~stated~~ ~~in~~
had ~~the~~ ~~fact~~ ~~of~~ ~~whether~~
Sir E. Gray concurs in this
suggestion ~~of~~ ~~the~~ ~~fact~~ ~~or~~
whether he would desire
that the alternative
proposal should be
examined without waiting
for an expression of his
views.

3. I am bound that the
reference to the Comptroller of
Works in the E.A.S. which is

made in the latter part
of your letter is not
clearly understood. It seems
is not at present a leave
of absence and had time
to be whether in any case
he would feel himself
compelled to advise on a
matter of this kind. 121

R. L. ANTROBUS