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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

*P*UBLIC WORKS DEPARTMENT

G.O. No.	2726 W	Press.
B.P. No.		Mis.
Dated	19. 10. 1882	197.

Not to be folded or roughly handled

N. S. S.

2726

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

No. 118.

READ—the following papers :—

From T. E. MARSHALL, Esq., Acting Master Attendant, Administrative Department, Madras, to the Secretary to Government, Public Works Department, dated Madras, 31st July 1882, No. 6355.

With reference to G.O., Public Works Department, No. 2454, dated October 6th, 1881, I have the honor to forward the accompanying report from the Port Officer, Pámban, on the boring operations carried out by him, and to state that the plans connected therewith are sent separately by Railway parcel. A case of specimens of soil is to be despatched by rail.

ENCLOSURE.

Pámban Proposed Canal Boring and Levelling Operations.

The first object being to establish a bench mark, a line of levels was run from Captain Baird's, R.E., bench mark situated on the western side of the Cable House (Pámban) 7.5 feet above mean sea level to a bench mark cut on the south-west edge of the south-east port limit beacon which was found to be 17.485 feet above mean sea level, and to which all levels in the plan are referred.

Boring No. 1—Was sunk on the south side of the island 600 feet from high water mark, and was commenced on the 16th January 1882; two kinds of strata were found, the top of dark fine grey sand, the lower of a darker colored sand containing small particles of shells and of an adhesive nature as it contained much clay.

Boring No. 2—Situated 2,100 feet due north of No. 1 was found to be composed of five (5) different strata, a stratum consisting of a very coarse and friable conglomerate of sandstone called by the natives *allobat* (copum par) was found in this boring.

Boring No. 3—Was sunk in a coconut tope 2,570 feet due north of No. 2; the top stratum consisted of an alluvial soil mixed with fine sand, and the other six strata were different kinds of mud, sand and clay.

Boring No. 4—Distant 1,200 feet due north of No. 3 was the first boring in which stone or rock was come upon 4 feet below the upper surface. It did not extend to any great depth, but was of rather a hard nature; *allobat* was also found in this boring; about 33 feet below the surface a dark colored thin stratum of rock was encountered; the spear pointed jumper brought to bear on it pounded it up into a dark paste, and strange to say this paste when dry weighs very little, although the rock was hard enough to turn the edge of the chisel jumper first used on it; between this boring and boring No. 5, a distance of 1,230 feet, stone is found just below the surface in curious layers to a depth of 5 feet; these slabs as they may be termed average 3 to 4 inches in thickness and are 4 to 5 feet long; the natives use them for terracing the roofs of their houses and call them masai or palakai kul; the rounded edges and white appearance of this stone would lead one to believe it to be old stone thrown down at some previous period, and that time had covered it with sand, the friction of which combined with wind had rounded the edges; the grain was very fine with dark specks but brittle.

Boring No. 5—Situated on the south edge of the village of Thangachimudam had a top stratum of sand with sandstone of a hard nature; underneath the other strata were *allobat* red clay and sandy soils.

Boring No. 6—Just north of the village had a stratum of sandstone of a hard nature with sandy soils underneath.

Boring No. 7—Situated due north 1,100 feet from No. 6 consisted of a top stratum of very coarse friable sandstone slabs with sandy soils under.

Boring No. 8—Just at the water's edge 1.35 above mean sea level had a top stratum of decayed coral mixed with mud and sand, and at a depth of 8 feet hard coral rock was come upon 3½ feet thick.

APPROACHES.

The southern entrance of the proposed canal has a sandy bottom with a depth of 22 feet within 1,000 feet of the shore.

Off the northern entrance is a coral reef 500 feet wide which nearly dries at low water, outside of which the bottom is sandy, but interspersed for a short distance with boulders and coral formation and quickly deepens into 18 and 20 feet of water.

REMARKS.

From the result of the borings and from other personal observations I am of opinion that a wavy stratum of rock or stone runs through the island in an almost easterly direction from the great dam of the Pámban Channel; and this opinion is strengthened by the fact that in or near Pámban itself the stone or rock is near the surface dipping to 11 or 12 feet at the village of Uskulmudum, rising again at Thangachimudum to within 3 or 4 feet of the surface, appearing above the surface a little to the east of the village, and again sinking to rise near Thanikodi, and form the basis on which the sand heaps between the island of Rámesvaram and Tallamaar (Ceylon) rest; the boring show that this stratum is about 3,000 feet in width, but as at the spot selected for the operations the stone comes within 3 or 4 feet of the surface, the excavation of it is not a very difficult matter; the longitude of the proposed line of canal is 79° 14' 40" east, and is through the narrowest part of the island in a due north and south direction, being 11,350 feet from high water mark one side to high water mark the other.

Regarding the growth of coral and amount likely to require removal annually, I am of opinion, judging from my experience of the north reef channel (Pámban) and the various boat channels around and adjacent to the outlying islands, that after a first and thorough removal of it the growth is so slow as not to require attention again for some few years, and in illustration of this I may state that during the building of the large beacon on the shingle islets it was necessary to make a boat channel to the northward of the reef to admit of loaded boats getting to the spot to unload; this was in 1878; the same channel was used this year to take some sized boats loaded with stone to effect the repairs needed in the base of the beacon; coral can be removed at a depth of 12 to 14 feet at Re. 1 per cubic yard. I do not anticipate that it will prove any great obstacle to the successful working of the canal, should it ever be opened.

I can form no estimate of its growth, but from the beforementioned fact I should imagine it must be slow. I have noticed that coral which is uncovered at low water soon decays away and is washed up on the sea shore in small pieces, but if it is covered with sand, and that be removed, the coral is found fresh and alive, although the spot is uncovered at high water.

In the plan herewith forwarded, I have endeavoured to show the nature of the country through which the proposed canal is to pass; also the height of the country above mean sea level is delineated in the level plan, and the approaches can be seen by a glance at the chart which accompanies this report.

Samples of the different strata sunk through are sent in a case, the soil itself is packed in bags, on which are marked the numbers of the borings referred to; also the depths at which the different strata were found; samples of the stone found in borings Nos. 4, 5, and 6 are also forwarded.

(Signed) T. H. BAKER,

Ag. Port Officer, Cocanada,
Late in charge of the Boring and Levelling Operations
across the Island of Rámesvaram.

No. 118-A.

From the Master Attendant, Madras, dated 3rd August 1882, No. 6604.

No. 118-B.

From J. H. TAYLOR, Esq., Lieutenant, R.N.R., Master Attendant, Administrative Department, Madras, to the Chief Engineer, Public Works Department, dated Madras, 28th August 1882, No. 7548.

With reference to your letter No. 580 E., dated 14th August 1882, I have the honor to forward copy of the report received from Mr. Baker, furnishing the information called for in connection with his boring operations across the island of Rámesvaram.

ENCLOSURE.

From T. H. BAKER, Esq., Acting Port Officer, Cocanada, to the Master Attendant, Administrative Department, Madras, dated Cocanada, 24th August 1882, No. 1222.

With reference to your memorandum, No. 7235, dated 19th August 1882, received this morning by dawk, and not per steamer *Satara*, as marked on the cover, enclosing a letter from Colonel Sankey, respecting the borings across the island of Rámesvaram, I have the honor to inform you as follows:—

1. The many stratum of rock mentioned by me in my report is the thin layer of rock shown in the sections, and no rock was encountered below it with the exception of No. 4 boring, where, at a depth of 33 feet below the ground surface, a very dark hard stratum, about 6 inches in thickness, was come upon; all the other rock or stone found was on a level with or above mean sea level, and was of no great thickness.

2. The sandstone found in No. 7 boring was totally unlike that in Nos. 4, 5, and 6. To make myself as easily understood as possible, I may say that it was like cakes of very coarse sand and small stones mixed, a conglomerate strong enough if lifted by both ends to hold together, but if lifted by one end only it crumbles off and breaks away by its own weight; the sand augur went through it as easily as if it were only sand.

3. In the detailed survey plan I have drawn a blue line, which I consider includes the space within which the many stratum referred to in the report lies, that is Nos. 4, 5, and 6 borings about 3,000 feet in width; after coming upon rock I made the borings closer together than in the sandy places, to make sure if possible of not missing the commencement and ending of the rocky stratum, which through my observations of the various wells sunk in the vicinity I knew existed.

4. I beg to state that, in my opinion, the rocky stratum at or near the village Thangachimudum is nearer the surface and thinner than at any other part of the island.

5. To the south of the island 30 feet of water is found at a distance of from 10,000 to 11,000 feet from the shore, and the bottom consists of coarse sand and small shells and stones.

To the north the 30-foot line is distant about 6,000 feet from the shore, and the bottom is hard, fine sand, and in places decayed coral in small pieces.

Trusting I have fully treated in the matters required, I have, &c.

No. 119.

ORDER—dated 19th October 1882, No. 2726 W., Public Works.

Recorded.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Offg. Secretary to Govt., P.W.D.

To the Superintending Engineer, Sixth Circle.
" Marine Department.

Exd. C. Howarth.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1882) Madras
PUBLIC WORKS.

Dated October, 19th.

Recd.

Encl.

G.O., 1th Oct. 1882, No. 2726 W.

OCTOBER.
Nos. 118-119.

Pamban Pass.

Reports on the boring operations in the
recorded.

Administrative Department.

No. 6355

MADRAS,

Marine Office,

31st July 1882.

From

J. C. Marshall Esq.
H. TAYLOR, Esq., Lieut., R.N.R.,

Acting Master Attendant,
Administrative Department,
Madras,

To

Colonel R. H. Lankester, R.C. C.B.

Chief Secretary to Government,
Public Works Marine Department,
Fort Saint George.

Sir,

With reference to S.O. Public Works
Department No. 2454, dated October 6th
1881, I have the honor to forward the
accompanying report from the Port
Officer, Pamban, on the boring
operations carried out by him, and to
state that the plans connected therewith
are sent separately by Railway parcel. A
case of specimens of soil is to be dispatched
by rail.

I have the honor to be
Sir,

Your Most Obedient Servant

J. C. Marshall
Acting Master Attendant
Administrative Department.

From

THE MASTER ATTENDANT,

ADMINISTRATIVE DEPARTMENT,

Madras,

To

THE ~~CHIEF~~ SECY. TO GOVERNMENT,

P. W. MARINE DEPARTMENT,

Fort St. George.

No. 6355.

Dated

31

July

1882.

Received

No.

No. 580 Ea/14.8.82

Plans with
Technical Section
7/10/82

Subject.

Forwarded Mr. Patten
Report of Boring and
Leveling Operation

Oct 18.8

Ramban Proposed Canal Boring and Levelling Operations

The first object being to establish a Bench mark; a line of levels was run from Captain Baird's R.E. Bench mark situated on the western side of the Cable House (Ramban) - 7.5 feet above mean sea level to a Bench mark cut on the S.W. edge of the S.E. Fort Limit beacon which was found to be 17.485 feet above mean sea level and to which all levels in the plan are referred.

Boring No. 1.

Was sunk on the southside of the Island, 600 feet from High water mark and was commenced on the 16th January 1882, two kinds of strata were found, the top of dark fine grey sand, the lower of a darker colored sand containing small particles of shells and of an adhesive nature as it contained much clay.

Boring No. 2

Situated 2,100 feet due north of No. 1

was found to be composed of five
(5) different strata, a stratum consisting
of a very coarse and friable
conglomerate of sandstone called by
the natives 2 L L L O H H H. (Opum
par) was found in this Boring

Boring No. 3.

Was sunk in a coconut top 2.570
feet due north of No. 2, the top stratum
consisted of an alluvial
soil mixed with fine sand and
the other six strata were different
kinds of mud, sand and clay.

Boring No. 4.

Distant 1.200 feet due north of
No. 3 was the first boring in which
stone or rock was come upon, 4 feet
below the upper surface. It did
not extend to any great depth but
was of rather a hard nature,

2 L L L O H H H was also found in this
Boring; about 33 feet below the sur-
face a dark colored thin stratum
of rock was encountered the spear
pointed jumper brought to bear
on

on it pounded it up into a dark
paste and strange to say this
paste when dry weighs very little
although the rock was hard enough
to turn the edge of the chisel jumper
first used on it; between this
boring and boring No. 5 a distance
of 1.230 feet, stone is found just
below the surface in curious lay-
ers to a depth of five feet, these
slabs as they may be termed —
average 3 to 4 inches in thickness
and are 4 to 5 feet long, the na-
tives use them for terracing the
roofs of their houses and call
them masai or Palakai kul, the
pounded edges and white appear-
ance of this stone would lead one
to believe it to be old stone thrown
down at some previous period, and
that time had covered it with sand
the friction of which combined with
wind had pounded the edges, the
grain was very fine with dark
specks but brittle.

Boring

Boring No 5

Situated on the south edge of the village of Thangachimudam had a top stratum of sand with sand stone of a hard nature underneath the other strata were 2 1/2 ft red clay and sandy soils.

Boring No 6

Just north of the village had a stratum of sand stone of a hard nature with sandy soils underneath

Boring No 7

Situated due north 1100 feet from No 6 consisted of a top stratum of very coarse friable sand stone slabs with sandy soils under.

Boring No 8

Just at the waters edge 135 above mean sea level had a top stratum of decayed coral mixed with mud and sand, and at a depth of 8 feet hard coral rock was come upon 3 1/2 feet thick.

Approaches

Approaches

11/4 2/20

The southern entrance of the proposed canal has a sandy bottom with a depth of 22 feet within 1000 feet of the shore.

Off the northern entrance is a coral reef 500 feet wide which nearly dries at low water outside of which the bottom is sandy but interspersed for a short distance with boulders and coral formation and quickly deepens into 18 and 20 feet of water.

Remarks

From the result of the borings and from other personal observations, I am of opinion that a ~~coarse~~ stratum of rock or stone runs through the Island in an almost Easterly direction from the great Dam of the Pambar Channel and this opinion is strengthened by the fact that in or near Pambar itself the stone or rock is near the surface dipping to 11 or 12 feet at

at the village of Ukkulmudum rising again at Thangaehimudum to within 3 or 4 feet of the surface, appearing above the surface a little to the East, of the village and again sinking to rise near Namikodi, and form the basis on which the sand heaps between the Island of Rameswaram and Tallamaar (Ceylon) rest, the boring show that this stratum is about 3,000 feet in width, but as at the spot selected for the operations the stone comes within 3 or 4 feet of the surface, the excavation of it is not a very difficult matter; the Longitude of the proposed line of canal is $79^{\circ} 14' 40''$ East and is through the narrowest part of the Island in a due north and South direction being 11,350 feet from N.W. mark one side to S.W. mark the other.

Regarding the growth of coral and ^{amount} likely to require removal annually, I am of opinion judging from my experience of the North reef channel Pamban

(Pamban) and the various boat channels around and adjacent to the outlying islands that after a first and thorough removal of it, the growth is so slow as not to require attention again for some few years and in illustration of this I may state that during the building of the large Beacon on the shingle Islets it was necessary to make a boat channel to the northward of the Reef to admit of loaded boats getting to the spot to unload; this was in 1878; the same channel was used this year to take some sized boats loaded with stone to effect the repairs needed in the base of the Beacon; Coral can be removed at a depth of 12 to 14 feet at Rs. 1 per cubic yard. I do not anticipate that it will prove any great obstacle to the successful working of the canal, should it ever be opened.

I can form no Estimate of its growth but from the before mentioned fact, I should imagine it must be slow, I have noticed that coral which is uncovered at low water soon decays away and is washed up on the sea shore in small pieces but if it is covered with sand and that be removed the coral is found fresh and alive although

a. although the spot is uncovered at high
a water.

3. In the plan herewith forwarded,
I have endeavoured to show the nature
of the country through which the pro-
posed canal is to pass, also the
height of the country above mean sea
level is delineated in the Level plan
and the Approaches can be seen by
a glance at the chart which accom-
panies this report.

3. Samples of the different strata
sunk through are sent in a case,
the soil itself is packed in bags, on
which, are marked the Nos of the
borings referred to also the depths
at which the different strata were
found, samples of the stone found
in Borings Nos 4, 5 and 6 are also for-
warded.

J. A. Parker.
Actg Port Officer
Coconada

Act in charge of the
Boring and Levelling
Operations across the
Island of Ramiscianano

No. 6
From the Hon. Mr. [illegible]
to the [illegible]
dated 23rd [illegible]

ML

Administrative Department

Madras

Marine Office

3rd August 1892

N^o 6601,

From

The Master Attendant
Administrative Department
Madras

To
Colonel N. A. Sankey C.B.E.
Secretary to Government
Public Works Department
Co. 1

Sir,

I have the honor to enclose
Railway Receipt for the case of Specimens
of Soil referred to in my letter N^o 6555 of
31st ultimo.

I have the honor to be
Sir

Your most obedient servant

W. J. T. S.
Master Attendant
Administrative Department

M

From
The Master Attendant

Madras.

W. C. 15/8/82
W. C. called for 15/8

Dated 3rd } August 1882
Recd }

N. 6604

Towards Railway
Receipt for a case
containing Soil
Specimens

Administrative Department.

MADRAS,

Marine Office,

28th August 1882.

No. 7548.

From

THE MASTER ATTENDANT,

ADMINISTRATIVE DEPARTMENT,

Madras,

To

Colonel R. H. Sankar R. E. S. P.

Chief Engineer

SIR,

Public Works Department
Ootacamund

With reference to your letter N^o 580
C., dated August 14th 1882, I have the honor
to forward copy of the report received from
Mr. Baker, furnishing the information called
for in connection with his boring operations
across the island of Rameswaram.

I have the honor to be

Sir

Your Most Obedt Servant

W. C. 15/8/82

Master Attendant

Administrative Department

MS

8/8/82

MS

Enquire about this

Enquire make reply

not yet recd. Recd

was expected to come at

with the 7th 1882

Recd 15/8/82

W.C. No 5966

Forwarding copy of
 further report from
 Mr. Baker regarding
 borings at Bantam

From THE MASTER ATTENDANT,
 ADMINISTRATIVE DEPARTMENT,
 Hobart.
 To THE
 Dated 28 Aug 1882
 Received No 7528

The file is
 produced among the
 your papers of the
 same date as the
 annexed 27/8

C.W.

File

W.H.S.P

30/8/82

No 1222. Clearing Office
 Cocanada
 24th August 1882.
 From J. W. Baker Esquire
 Ap Post Officer
 Cocanada.
 To The Master Attendant
 Administrative Dept.
 Hobart.

Sir,
 With reference to your memo
 No 7238 received this morning by
 clerk, and not per Mr. Salsala as
 marked on the cover, enclosing a
 letter from Col. Salsala respecting
 the borings across the Island of
 Ramasseran, I have the honour to
 inform you as follows:-
 1st The many stratum of rock
 mentioned by me in my report is
 the thin layer of rock shown
 in the sections and no rock was en-
 counterd below it with the excep-
 tion of No 4 boring, where at a
 depth of 33 feet below the ground
 surface

surface, a very dark hard stratum about 6 inches in thickness was come upon, all the other rock or stone found was on a level with or above mean sea level, and as of no great thickness.

2. The sand stone found in No. 7 Boring was totally unlike that in Nos. 4, 5, & 6 to make myself as easily understood as possible, I may say that it was like cubes of very coarse sand & small stones mixed, a conglomerate strong enough if lifted by both ends to hold together, but if lifted by one end only the crumbles off and breaks away by its own weight, the sand auger went through it, as easily as if it were only sand.

3. In the detailed survey plan, I have drawn a blue line which I consider includes the space or within which the many stratum referred to in the report lies, that is Nos. 4, 5 & 6 Borings about 3000 feet in width; after coming upon track

rock I made the borings closer together than in the sandy places to make sure if possible of not missing the commencement and ending of the rocky stratum which through my observations of the various sea wells sunk in the vicinity, I knew existed.

4. I beg to state that in my opinion the rocky stratum above near the village Thangachimadum is nearer the surface and thinner than at any other part of the Island.

5. To the south of the Island 30 feet of water is found at a distance of from 10 to 11,000 feet from the shore, and the bottom consists of coarse sand and small shells and bones.

To the north the 30 foot line is distant about 6,000 feet from the shore and the bottom is hard fine sand and in places decayed coral in small pieces.

Trusting

Trusting I have fully treated
in the matters required.

I have the
Hon. J. H. Baker
Asst. Port Officer

(True copy)

W. H. Donnell
1st Asst. Master Attendant
Administrative Department

Encl.
W.C. 1259

MM

No 2726 10 B x R
Civil Works
PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the 19 October 1882
Read the following:—

Letter from the Master Attendant
to Madras. } (No. 6353 of 31st July 1882)
do do } (" " 6604 of 3 Augt ..)
do do } (" " 7548 of 28 Augt ..)

Recorded

43
3

S. C. Smith A/cile 5

Marine Dept 7 Receipts
21/10/82
30

5966
5511, 5514

Govt. of (1882) Madras.
PUBLIC WORKS.

Print 5076

Dated

Recd.

Encl.

G. O. 19th Feb 1882, No. 2726W.

Nos. 118 to 119

Pannabai Pass

Reports on the bearing
operations in the
enclosed

9/10

20/10

Added in Receipt Paper