989 W 16-4-86

P.W.C. No. 7611

1422 C. 8. 4.
2208 C 22-12-85
2206 C 21. 12-85
3074 W 19. 12. 85.
2170 C. 10. 12. 85
2443 W 22. 10. 85

B. No. 2575 W a/ 1st Oct.

B

Recorded.
Recorded

1/10/86

1/10/86.

No. 7627

30 SEP 86

30/9/86.

B. No. 2575 W a/ 1-10-86

5/10

Withdrawn

989 of 16-4-86

1042

Governm Madras.

MILITARY PARTMENT,

Fort St. George September 1886.

READ the following extract
from a Military Despatch m the Right Honorable the Secretary of
State for India, No. 69 ted 2" Septr 1886, para. 1.

ith reference to your Secretary's Letter
lic Works Department, No. 1164 W.,
in the May 1886, to the Under Secretary of
dated 8 lia, relative to the despatch of samples
State fo material for use at the School of Military
of buildi Chatham, I have been requested by
Enginee y of State for War to convey his thanks
the Secr nment for your kindness in furnishing
to you in question, and for the descriptive
the sa add materially to their value.
notes,

—

Transferred to the
Public Wo s Department
(By Order)
A. Kenney Herbert
Lt. Col.
Secretary to Government.

To
The Pub Works Department. ✓

1164
1165 W 8. 5. 86
No 1422C. 8. 4. 86
" 2208C. 22. 12. 83
" 2206C. 21. 12. 85
B. No 3074 W. 19. 12. 83
No 2110C. 10. 12. 83
C B. No 24938 W 22. 10. 83.

Memo
No. 2771 C of 12-8-86

With refce to
his No 774 K.S.
of 2-8-86, the S.E.
II C is informed
that it is not now
considered neces-
-sary to transmit
the samples of
stone referred to

2. It is to be
regretted that the
samples were not
submitted in time
to accompany the
others to England

7/8/86

S.E. II C & ~~Dept~~
E. II C 13/8/86
9. 8. 86
Off 3578. 9. 8.
10 - 7 - 8 - 86 R. 11. 8. 86

P.W.C. No 6123

(7)

From,
The Supdg. Engineer,
2nd Circle

To,
The Chief Engineer,
P. W. D.

Dated 2nd August 1886.
Recd: 7. 8. 86

No. 2771 C of 12-8-86

No. 774. K.S.

Napa Lime stone and
Bezvada Sand Stone - Informs
that the Ex. Engr. Kistna Eastern Dn.
has just sent specimens of —
taken from the Quarries at Bezvada
and enquires if there is any
necessity for sending them to
Madras now for transhipment
to England.

No. 774 Ks

Superintending Engineer's Office
2nd Circle Bezvada 2nd August
1886.

From

The Superintending Engineer
2nd Circle

To

The Chief Engineer
Public Works Department

Sir

With reference to your memo No 2206 C of 21st December 1885, I have the honor to inform you, that the Executive Engineer, Eastern Division, has just sent the following Specimens of Stone taken from the Quarries here.

1 Specimen (3"×2") of Napa Lime Stone.
1 Specimen (Do-) of Bezvada Sand Stone.

2. I beg you will let me know if there is any necessity for my sending these Stones to Madras now for transhipment to England.

I have the honor to be
Sir
Your most Obt. Servant

Major R.E.
Offg. Superintending Engineer 2nd Circle

Compd J.W.

1163W
1164W
18 Wo. 1165 Wd 8-5-86

R-7-5-86

Sd 1875 W 1875.

Entd in Recpt. Regr

No 774 Ks

Superintending Engineer's Office
2d Circle Bezvada 2nd August
1886.

From

The Superintending Engineer
2nd Circle

To

The Chief Engineer
Public Works Department

Sir

With reference to your memo No 2206 C of 21st December 1885, I have the honor to inform you, that the Executive Engineer Eastern Division, has just sent the following specimens of stone taken from the Quarries here.

1 Specimen ([illegible]3"×2") of Napa Lime stone.
1 Specimen (Do-) of Bezvada Sand stone.

2. I beg y[illegible] will let me know if there is any necessity for my sending these stones to Madras now for transhipment to England.

I have the honor to be
Sir
Yo[illegible] most Obt Servant

Major R.E.
Offg. Superintending Engineer 2d Circle

Compd. GJ

List of samples of Building materials &c received from Officers of the Public Works Department for transm
to the School of Military Engineering at Chatham as per memo from Chief Engineer No 2110 C dated 10th December 1885

No	Date of letter	Circle	From whom received	Descriptions of Specimens	Number or quantity
	1886				
54 G.S.	February 10	First Circle	The Superintending Engineer	Godaveri Teakwood	1
				Saalwood with leaves	1
				Woolaishwaram Stone.	1
				Pedavagi Stone	1
83	" 10	Third Circle	The Executive Engineer. Kurnool Division	Yeggi wood	1
				Lime Stone	1
1619	January 30	Do	Cuddapah "	Dark blue lime Stone	1
				Light blue lime Stone	1
				Nuss Vomica	
				Red Sanders	1
1741	February 16	Do	Do	Satin Wood (mallet)	
				Gneiss 1st Sort. Building stone	1
				Do 2nd sort for Ashlar	1
				Trap generally in boulder.	

No.	Date of letter		Circle	From whom received	ure of specimens	
	1886					
2056	Decr/85	21	Third Circle	Executive Engineer Bellary Division	6 pieces of Red Sanders (vengay) wood	✓
329	Feby/86	18	Do	Do Do	2 Blocks of Vengi	
494	March	17	Do	Do Do	1 Red Granite	✓
					1 Basalt	
44 u	Feby	17	Fourth Circle	Superintending Engineer	1 Specimen of grey Gneiss	
					Anamalay Teak	✓
					Rosewood or Blackwood	✓
					Lime Stone	✓
					Anamalay Teak seed	
					Rosewood or Blackwood seeds	
55	January	21	Do	West Coast Division	Anamalay Teak leaves and pods	
2	Feby	25	Do		Rosewood or Blackwood leaves & pods	
				Do "	14 Specimens of Laterite	✓
					Jackwood	
					Iron wood	
					Vengay	
					Iyeny	
					Venteak	
					Irul	
					Karrimaridhi	
					Irumbogam.	
	Feby	18	Do	Do "	Blackwood	
					Venga	
					Ven teak	
					Red Cedar	
					White Cedar	
					Iron wood	
	"	4	Fifth Circle	Superintending Engineer	Bangalore Granite or Gneiss	✓
	Jany	19	Do	Do	Timber attacked by dry rot	
					Timber attacked by white ants.	
	"	20	Do	Sub Divl. Office, Trivellore Sub. Division	White ants queen ant	
					Carpenters Beetle	
					Laterite	✓
					Palaveram Granite	
					Lime Stone Nodular	Palmirah attacked by white ants ✓
					Lime Stone Rongle.	
					Teak wood Dry rot	
					Teak wood wet rot	
	March	17	Do	Superintending Engineer	Teak bored by the Carpenter Bee	
					Teak destroyed by damp rot	
					Casuarina injured by dry rot insects	
					Wild mango damaged by dry rot	
					M[illegible] by white ants.	

Superintending Engineer's Office

1/7083
29-3-86

3
25/6/86

With orders

Description of Six specimens (2 of each kind) of Timber from Wynaad.

Blackwood Dalbergia Latifolia. weight when seasoned, 50 lbs per cubic foot. unseasoned 58 to 62 lbs. prevails in the Wynaad, Cuddapah, Tinnevelly, South Arcot, North Arcot, Nilgiris, Salem, South Canara, Kurnool, + Coimbatore, Godaveri, Ganjam, Malabar, Madura and throughout the Madras Presidency.

A deciduous tree of large growth; wood heavy, strong and fibrous, close grained and durable. Differs much in color but is generally purple black: a most valuable timber for ordnance work (gun carriages) and has been used for sleepers. The better sorts are, however, expensive, and generally fetch more than teak.

Venga. Pterocarpus Marsupium: weight when seasoned 56 lbs per cubic foot. unseasoned about 65 lb is + abundant throughout the Madras Presidency.

A large deciduous tree. wood light, seasons well, color dark brown, and strong, durable, close grained, and not easily worked. Is extensively used for building purposes and for posts, beams, doors and window frames; has also been used for railway sleepers. It is described as an excellent wood for exposed venetians and weather boards.

Ven teak Lagerstromia Microcarpa. weight when seasoned 41 lbs per cubic foot, unseasoned 50 to 54 lbs. Prevails in Tinnevelly, North Arcot, Nilgiris, Wynaad, Coimbatore, South Canara, and in all the Forests of the Madras

Presidency.

A large tree, wood red and reddish brown, inferior to teak in durability and strength, warps when much exposed: is moderately hard, straight fibred and elastic: largely used in buildings, floors, rafters &c and in dockyards.

Red Cedar Acrocarpus Fraxinifolius. weight when seasoned 39 lbs per cubic foot, unseasoned about 45 lbs. Is found in Tinnevelly, Nilgiris, Madura, South Canara, Wynaad, Coimbatore and Malabar.

A lofty deciduous tree, wood light red, moderately hard and shrinks in seasoning. It is much used by planters in the Coorg, Coonoor and Wynaad districts for building purposes and is known as the "shingle tree."

White Cedar. Chickrassia tabularis. weight when seasoned about 39 lbs per cubic foot. Prevails chiefly in Wynaad, Nilgiris, Coimbatore and South Canara. Wood is of a very light color, strong and hard, and of excellent quality, is much used by cabinet makers for furniture; takes a high polish; it is known as the "bastard cedar" and is the true Chittagong wood of commerce.

Iron wood Hardwickia Binata. weight when seasoned 85 lbs per cubic foot, unseasoned 100 to 120 lbs, is found in Cuddapah, South Arcot, Godavery, Salem, Madura, Coimbatore, North Arcot, Kurnool and in Wynaad.

A

A large deciduous tree, wood dark red brown extremely hard, strong and heavy, and of excellent quality. It is perhaps the heaviest and hardest in India. Extremely durable, and though liable to split, does not warp; a first rate building and Engineering timber, but not utilized as it might be, has been recommended for sleepers.

Descriptive Note of a specimen of timber attacked by dry rot in the North Arcot District.

The specimen of dry rot was taken from the end of a teakwood beam in a house at Ranipet lately under repairs as a residence for King Theebaw.

2. The house is supposed to have been built in 1790; the beam was, so far as could be judged, quite sound throughout its length with the exception of this end.

3. The beam had a bearing on the wall of the full width of the wall, and though built-in the surface at end was exposed.

4. The dry rot was caused by this exposed surface being alternately dry and wet, the action being hastened, I think by the fact of the beam being built into the masonry and thus having no free current of air round it.

Descriptive Note of a Specimen of timber attacked by white ants in the North Arcot District.

The specimen forwarded is taken from a teak beam in a house at Ranipett lately under repairs as a residence for King Theebaw.

2. The house is said to have been built in 1790; the beam on examination was found to be quite sound with the exception of this end.

3. The room adjoining that in which the beam was used had its terracing carried merely on joists, and to allow of cornice work and masonry being built round the end of the joists, the end of the beam resting on the wall had been cut as shewn; the lower portion of the beam was quite sound, the white ants having only attacked the shaded portion.

4. Teak is supposed to be impervious to the attack of white ants, and in this case I am of opinion that the portion of the beam attacked, had decayed before the white ants entered it; they had not gone far into it and were easily dug out; there was an irregular crack in the wall below the beam, up which the white ants must have travelled.

5. Owing to the character borne by teak as impervious to white ants two sound pieces of the beam are enclosed.

Descriptive Note of a Specimen of Bangalore Granite.

The quarry from which the accompanying sample of granite was taken is situated about 7 miles south west of the Bangalore Cantonment and is called the "Sarake Quarry".

The stone is quarried as follows:—

A clear and extensive a surface of stone as possible is selected and large fires of wood are lighted thereon and allowed to burn for about 6 hours. This causes the upper lamina of the rock to separate which is known by the sound given out when the surface is tapped with a crowbar. If building stones only are required the detached lamina is broken up by throwing heavy weights upon it, generally boulders of trap stone or a long round shot.

Should long slabs be wanted, parallel lines of holes at required distance apart are sunk, and the slabs are separated by plugs and feathers being driven into thin holes.

Slabs 15ft long and 2 ft wide with a thickness of from 3 to 9 inches can be thus obtained; the price being one rupee for 10 Sqr feet, 6 inches thick.

Stones required for masonry walls &c are called "sized" stones, and average ½ cubic foot each, they cost Rs 6 per 100 stones and very neat coursed rubble in lime mortar can be built with them in Mysore for 2½ annas per cubic foot.

Descriptive Note of 6 Specimens of wood destroyed by insects &c.

I Tectona Grandis – Teak – Thaika Marum (Tamil) Unsurpas for Ships and house building, useful for furniture and many other purposes. The specimen has been bored by the Carpenter Bee.

II The same - These pieces have been destroyed by damp rot.

III Casurina muricata - Casurina, Indian Pine - Chowk Marum - (Tamil). Used for spars, rafters for sheds and as firewood - Injured by dry rot insects.

IV Spondias Magnifera - Hog plum or wild Mango - Mari manga marum (Tamil)

The fruit is eaten ripe, also pickled unripe. Wood of little or no use. A gum resembling gum arabic exudes from the tree. The specimen has been damaged by dry rot.

V Mangifera Indica - Mango - Mam-marum (Tamil)
Produces a delicious fruit. The wood is used in common buildings. Planks 4 feet wide can be obtained in one width.

Damaged by white ants.

VI Tamarindus Indica - Tamarind - Polian Maram (Tamil)
Used where a hard wood is required as for Mills and the teeth of wheels. Good fuel for burning bricks.

Attacked by white ants.

(True Copy)

Hugh. O'Connell
Genl. Supt. P.W. Stores

List of Building materials the specimens of which were received from the Executive Engineer Coimbatore Division, and forwarded by the Superintending Engineer II Circle to the Superintendent of P. W. Stores, for transmission to England for purposes of instruction at the School of Military Engineering at Chatham (vide Chief Engineer's Memo No. 2110 C dated 10th December 1885.

No.	Botanical Name	English name	Vernacular Name	Where obtainable	For what purpose used.
1.	Tectona Grandis	Teak	Teku	Anamalay	Beam Joists, Floors and for general purposes of carpentry and Joinery
2	Do	Do	Do	Do	Do Do
3	Do	Do	Do	Do	Do Do
4	Dalbergia Latifolia	Rosewood or blackwood	Eettie	Do	Do Do
5	Do	Do	Do	Do	Do Do
6	Do	Do	Do	Do	Do Do
7	"	Limestone	"	Madukarai bed near Coimbatore	As a building stone and for decorating purposes.
8	"	Do	"	Do	Do Do
9	"	Do	"	Do	Do Do
10	Tectona Grandis	Teak	Teku	Anamalay	Seeds
11	Dalbergia Latifolia	Rosewood or blackwood	Eettie	Do	Do
12	Tectona Grandis	Teak	Teku	Do	Leaves and pods
13	Dalbergia Latifolia	Rosewood or blackwood	Eettie	Do	Do

(True Copy)

Hugh. O'Connell
General Supt: P.W. Stores

2/7093
27-3-86

PW Se1
2576/86

No. 15

SUPERINTENDING ENGINEER'S OFFICE,
V CIRCLE, MADRAS,
Chepâk, 1st April 1886.

From

THE SUPERINTENDING ENGINEER,
V CIRCLE,

To

THE Chief Engineer
P. W. Deptt.,

SIR,

Enclosures. 2

With reference to paras 2 and 8 of your Circular No. 2110C dated 10th December 1885, I have the honor to report, that the General Superintendent P.W. Stores has received from all the Officers concerned, the specimens of building materials &c. for the School of Military Engineering at Chatham. Almost all the articles have been packed and labelled by the Officers who sent them, and the cases have not been opened by the General Superintendent P.W. Stores.

The Specimens received are shown in the enclosed two Statements.

Mr O'Connell asks for orders for the despatch of the cases.

I have the honor to be
Sir
Your most Obedt Servt
Hew L Prendergast Coll. R.E.
Superintg Engr
5th Circle

P.W.C. 2596

From

THE SUPERINTENDING ENGINEER,
V CIRCLE,

To

THE Chief Engineer,
P.W.D.

SECRETARY TO GOVERNMENT
2 APL [illegible]
DEPARTMENT

Dated 1st } April 1886.
Recd. 2 }

ENCLOSURES. 2

No 1422 C d/ 8-4-86

No. 15

Specimens of building materials &c. — Forwards two statements of — for the School of Military Engineering at Chatham.

No. 1422 C d/ 8th April 1886

P.W. Department

Memo.

With advertence to letter from the Suptg: Engr: V Circle No. 15 d/ 1st April /86, the undersigned has the honor to state that the specimens for the School of Military Engineering Chatham may be despatched to England at once to the address of the Rt: Hon'ble the Secretary of State for India, the cases being labelled "Specimens for the School of Military Engineering, Chatham".

2. The date of despatch should be reported with the least possible delay, in view to the same being intimated, and copies

of the lists forwarded to the Home Government and the Government of India.

5/4/86

5-4-86

G.O. B. No. 2493 W d/ 22-10-85
- 2110 C - 10-12-85
- 3074 W - 19-12-85
- 2206 C - 21-12-85
- 2208 C - 22-12-85

No. 1422 G d/ 8-4-86

S. E. V Circle

Desptd. 8-4-86.

No. 2493 Wd/ Octr 22d 1885

Comd to S. Engrs and the Cong: Architect, who will report, with the least practicable delay, what specimens of the materials and other articles indicated can be sent from their respective Circles —

2. On receipt of the reports now called for instructions will be issued for the transmission to England of the specimens selected.

Sd/ J S S.
20-10-85

Sup Engrs
S. E. I. M. S
C A to Govt

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
GENERAL.

To

No. 1476 G.
Dated Simla, October 5, 1885.
Received

No. 2493 Wd/ Octr 22d 1885

Samples of Indian building materials for use of School of Military Engineering, Chatham.

G. C. B. Press, Simla.—No. 454 P. W. D.—7-10-85.—487.

With Order

Stone.—As the collection should be decidedly characteristic, specimens should be sent only of such stones as are in large use in India and are also peculiar to India (rare in England) *e.g.*, Laterite, Gneiss, Basalt, Kankar (both block and nodular), Soapstone, Agra and Gwalior Sandstone, &c. The specimens should be blocks of about 6 to 36 cubic inches, showing some faces rough, some dressed, and some polished.

Timber.—Specimens should be sent only of the woods which are in common use for timber, carpentry, joinery, upholstery, or as ornamental trees. The specimens should be of about 6 to 36 cubic inches, and should show the wood both with and across the grain, with one face of each rough and one polished. A specimen of a few leaves and seeds (in the pod) of each tree should also be sent if available.

Timber destroying agents.—Specimens of white ants and of the common boring beetles should be sent preserved in spirit. Specimens of wood attacked by dry rot, wet rot, white ants, beetles, &c., should be sent.

N.B.—Every specimen should be labelled with a gummed label, and enclosed in a separate wrapper (so that the label, even if the gum fails, will remain enclosed).

P.S.—As it would take much time to gather a collection representative even roughly of the whole of India, a preliminary collection should be sent of such specimens as are readily available locally, and are fairly representative of a large district (*e.g.*, North-Western Provinces or Punjab). Early receipt of such a collection is important.

Public Works Department

No. 2110 C dated 10th. December 1885.

MEMORANDUM.

From the Consg. Archt. to Govt. No. 1081 dated 23rd. October 1885.
Suptg. Engr. Tank Maintenance Scheme No. 2624T dated 24 Octr85
Suptg Engineer Vl Circle No. 1210 T.J. dated 26th. Octr. 1885.
111 No. 1690 dated 7th. November 1885.
V No. 3526 dated 18th. November 1885.
1 No. 1691 G.D. dated 17th November 1885
1V Circle No. 474/E.W. dated 27th. November 1885.
V No. 3728 dated 1st. December 1885.

In their letters quoted above officers of the P.W. Department mention the various descriptions of building materials used in their respective circles of which specimens can be supplied for transmission to England for purposes of instruction at the School of Military Engineering at Chatham.

2. The Chief Engineer has decided that samples of the undermentioned materials are suitable for the purpose, and officers concerned are requested to forward the specimens with the least practicable delay to the Superintendent P.W. Stores, Madras, who will inform the Chief Engineer when all have been received.

From the 1 Circle.

1. Godavari teakwood.
2. Sal Wood.
3. Dowlaishweram Stone.
4. Pedavege Stone.

From the 111 Circle.

1. Granite
2. Blue limestone.
3. Yagee wood.
4. Gneiss.
5. Dark blue and light coloured limestones.
6. Red Sanders Wood.

From the 1V Circle.

1. Madukaray limestone.
2. Anamalai teak wood
3. Anamalai rosewood.
4. Laterite, from west coast.

From the V Circle.

1. Granite.
2. Laterite.
3. Nodular limestone.

From the V1 Circle.

1. Coral.

From the Consg. Architect's Division

1. Cuddapah Stone.
2. Coimbatore "
3. Sholinghur "
4. Pullaveram "
5. Six bricks. } Manufactured at the Govt. kilns
6. Six roofing tiles }
7. Six pieces terra cotta }
8. Fifteen samples of timber.

3. The Superintending Engineer V Circle is requested to furnish samples of wood attacked (1) by dry rot, (2) by wetrot, (3) by white ants, (4) by beetles &c. Also specimens of woo destroying insects carefully preserved in spirits.

4. In submitting specimens of wood, officers are requested to furnish if possible a few leaves and seeds (in the pod) of each tree.

5. The attention of all officers concerned is directed to the instructions contained in the "Specification" printed with Government of India Public Works Department No. 1476 G dated 5th. October 1885, communicated under G.O. No. 2493 W dated 22nd. October 1885.

Care should be taken that each specimen is carefully labelled. The label should give the Scientific designation of each article sent, as well as the name by which it is commonly known. For example, in the case of specimens of wood, the label should give

(1) botanical name.
(2) common English name.
(3) vernacular name.

The labels should also state the purpose or purposes for which each article sent is best adapted.

6. The Superintendent of Works 11 Circle is requested to expedite the submission of his reply to the G.O. quoted in the preceding para, and the further report promised by the Superintending Engineer 1V Circle is awaited.

7. The sample of Bangalore granite and the descriptive note received from the Superintending Engineer V Circle are herewith returned.

8. On receipt of a report from the Superintendent P.W. Stores, orders will issue in regard to the transmission of

the specimens to England.

(By Order)

D. McW. Campbell Captain. R. E.
Dy. Chief Engineer P. W. D.

To

The Suptg. Engineers 1, 111, 1V, V1 Circles
Suptg. Engineer V Circle with 1 sample & 1 note.
Supt. of Works 11 Circle.
Suptg. Engineer Tank Maintenance Scheme.
Consg. Archt. to Govt.

B/

P. W. D.

No. 3074 W.d/ Decr. 19. 1885

To
The Secretary to the
Govt. of India.
P. W. Deptt.

Sir,

With advertence to your letter No: 1476 G/ dated 5th October 1885, on the subject of the despatch to England of samples of Indian building materials for use at the School of Military Engineering Chatham, I am directe to forward for th information of th Govt. of India, a cop of a Circular on th subject issued by

the Chief Engineer
P. W. Deptt. Madras,
and to state that
a further report
will be made after
the despatch of the
Articles to England.

W.S.
18.12-85

Despd. 19.12.85 with a copy
of Circular

Cn

No. 3074 Wd / Decr. 19. 188

C

No. 2206 C of 21 Decr. /85

P. W. D.

Memo

In continuation
of memo No. 2110 C of
10 Decr 1885, the
Chief Engr. has the
honor to request that
the specimens of Indian
building stone and
timber to be prepared
for transmission to
Chatham may be
of a uniform size,
2 by 3 by 6 inches.

19/12/85

W.S.
19.12.85

Cn

Dw
W approved this
suggestion yesterday
Cn
19.12

Supdg Engrs &
C.A. to Govt. / DES 22/12

No. 2206 C d/ 21-12-85

5/1

×
10301

×disposed of by
Memo. No. 2110 C / 10/12/85

No. 497
E.W.

Supg. Engineer's Office IV Circle
Coimbatore 16th December 1885.

From
The Superintending Engineer
Fourth Circle

To
The Chief Engineer
P. W. Department

Sir,

In continuation of this office No. 474 of 27th Ultimo I have the honor to suggest, for transmission to England for purposes of instruction at the School of Military Engineering at Chatham, in addition to the articles already named, the following:-

I Káramadai Stone; this is the white stone used in the building of the Coimbatore Church, and some of which has been used to ornament buildings at Ootacamund. The village of Káramadai is situated about 6 miles from Mettupalaiyam.

II Vengay, Benteak, and Iyney woods, from the West Coast and

Nilgiris.

I have the honor to be
Sir,
Your most obedt. Servt.,

L. Beatty Col: R.E.
Superintending Engineer IV Circle

E.A.

No. 2110C of 10-12-85.
2493 W of 22-10-85.

No. 2208C of 22 December 1885

Recorded with remark that the specimens named appear to be included in the list of articles to be prepared and submitted by the Consg. Architect vide Memo. No. 2110C of 10th Decr. 1885.

19/12/85

19.12.85

S.E. IV Circle
S.E. IV Circle 22/12

Incd. 10903

From
The Supg. Engineer,
Fourth Circle.

19 DEC 85

Dated 16th }
Despd 17th } Decr. 1885.
Recd 18

No. 2208C of 22nd Decr. 1885

No. 497
E.W.

Samples of Indian Building Materials:—

Suggesting for transmission, &c., in addition to the articles already named, certain other — from the Coimbatore, Westcoast and Nilgiri Divisions.

With memo

No. 430

SUPERINTENDING ENGINEER'S OFFICE,
V CIRCLE, MADRAS,
Chepâk, 1st May 1886.

From
THE SUPERINTENDING ENGINEER,
V CIRCLE,

To
THE Chief Engineer
P.W. Department.

SIR,

Enclosures.

With reference to your Memorandum No. 1422C dated 8th April 1886, I have the honor to report that three cases containing specimens for the School of Military Engineering at Chatham were shipped per S.S. "Bokhara" on the 22nd Ultimo — to London to the address of the Right Honorable the Secretary of State for India.

2

2110C of 10.12-85.

2 I enclose the Bill of lading dated 28th Ultimo.

I have the honor to be
Sir
Your Most Obedt. Servt.

W H Burton
Colle. R.E.
Superintg. Engineer 5th Circle

oC at 10. 12. 84.

No 1422C. 8. 4. 86
" 2110C 10. 12. 85
" 2206C 21. 12. 85
" 2208C. 22. 12. 85.

3074 W 19. 12. 85
2493 W 22. 10. 85

B/ No 1163 W d/ 8 May/86.

Ordered that copies of the List be forwarded to the Home Govt. and the Govt. of India.

2. The Bill of Lading will be forwarded to the Under Secy. of State for India.

3/5/86

5. 5. 86

Cu 5/5/86

S. E. V. Circle

Ordered that
Copies of the List be
forwarded to the
Home Govt and the
Govt of India.
2 The Bill of Lading
will be forwarded
to the Under Secy
of State for India

S. E. V Circle

Desp. 7/5.
C. 3. 5. 86

14/5 14/5

5 C

PWCh 3314

From (C)

THE SUPERINTENDING ENGINEER,
V CIRCLE,

To

THE Chief Engineer
P.W.D.

Dated 1st } May 1886.
Recd. 3 }

ENCLOSURES. 1

B. Wc 1163 W of 8-5-86.

No. 430

Specimens for the School of Military Engineering at Chatham — Reports that 3 cases containing — were shipped on the 22nd Ultimo to London to the address of the Right Honble. the Secretary of State for India.

P.W. / W

B. Wc 1164 W. of 8 May/86.

P.W.D.

To

The Under Secy: of State
for India.

Sir,

Adverting to despatch from the Secretary of State to the Government of India No 206, dated 6th August 1885, I am directed to forward herewith lists of samples of building materials transmitted for use at the School of Military Engineering

Chatham, and to state that the articles were despatched in three cases to the address of the Right Hon'ble the Secretary of State for India per P&O. S.S. "Bokhara" which sailed from Madras on the 22nd April 1886.

2 The Bill of Lading is enclosed.

5-5-86

Ind
7/5/86

Despd
13/5/86

Cm

7-5-86.

15/5.

6. 3. 5/86

B. No. 1164 W of 8-5-86

P.W.D.

B. No. 257 B

65 W of 8 May/86.

To

The Secretary to the Govt
of India
P.W.D.

Sir

In continuation of my letter No. 3074 W, dated 19th December 1885, I am directed to forward herewith lists of samples of building materials despatched to England on the 22nd April 1886 for use at the School of Military Engineering Chatham.

5-5-86

Despd
~~13~~/5/86
12

Ind
7/5/86

Cm

1163W
1164W
18 Wo 1165 Rd 8-5-86

P 1075 Wn 1075.

R. 7-5-86

Entd in Rept. Regr