M.R.O. 1—77,006—8-6-31.

(1) Number of pages 14

(2) Date of repair 21-11-38

(3) Initia's of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public (Miscellaneous) DEPARTMENT. 1873/60

G.O. No. 470 Press Mis.

59.53

Dated 3-3- 1860

Not to be folded or roughly handled

Read again the following papers from the Government Astronomer, dated November 1st 1859, and recorded in Proceedings 3rd January 1860, No. 2.

No. 52. Read also the following letter from Major J. F. TENNANT, Bengal Engineers, Government Astronomer; to J. D. BOURDILLON, Esq., Secretary to Government, dated 9th January 1860, No. 10.

I have the honor to acknowledge the Proceedings of Government, No. 2, dated 3rd January 1860.

2. Whenever Government may honor me by calling for my advice I shall always deem it my duty to lay before them such information as I possess. I shall, therefore, always be ready to be their adviser as to the mode of procuring instruments, and I have already in my letter, dated 1st November last, (on which the Proceedings under acknowledgment were taken) made a general recommendation. If the purchase of particular instruments in the local market be the subject on which advice is required, I can only offer it on the understanding, that such a cursory examination of an instrument as can be made is of little value, and I can only repeat that a direct application to the maker is the best security for obtaining a valuable article.

3. The only possible exception I know to this rule is in the case of barometers which are exposed to great risk in carriage. Even in this case, however, I believe that careful packing which can always be secured, will answer as a security. At all events I have myself twice imported barometers safely and they have reached me safe after hundreds of miles of land carriage.

4. As regards undertaking the repairs of instruments, I beg to say that I could only do so at the expense of my efficiency as Astronomer without special arrangements. I am indeed at present repairing and altering several instruments belonging to the Observatory, but I am only able to do this, as, owing to the delay in mounting the new transit circle, I have an amount of time available which I could never reckon on regularly. Even now I find that I am unable to finish some computations which I am anxious to complete. My predecessors I suppose, must have felt the same difficulty, since I find that Government resolved on the 9th December 1852, in the Military Department, that the Astronomer should have charge of all scientific instruments, though the resolution appears never to have been acted on.

5. It would not be possible for the Astronomer, fully employed as he is, to carry on repairs without a professional mathematical instrument maker as head of the workshops, on whom practically all superintendence would fall; and I believe that it would be necessary besides to have an assistant for the Observatory. There is hardly any detail of the Observatory at present, which does not require my direct supervision, and the qualifications of the Assistants, (natives) are not sufficiently high to allow of any aid being derived from them in matters involving investigation.

6. I beg to refer to a printed series of Proceedings of a committee appointed for the establishment of an instrument depôt, terminating with the resolution to which I have alluded, (of which you have doubtless a copy), from which much valuable information will be derived. As regards the Roorkee shops, it has been found advisable to obtain a professional instrument maker from England. The project for making delicate instruments and dividing them has never been carried out. Captain Allen (an excellent workman, himself) had no experience of instrument making, and he very much underrated the difficulties both of procuring apparatus and using it to good purpose. Where the labor is a large portion of the value of an instrument, and particularly if the skill required be great, and the bulk small, it cannot, I believe, be profitably made in India; as the habits of native workmen are very dilatory, and little reliance can be placed on their care, while European workmen and superintendence are of necessity very expressive. Repairs, however, are more highly charged by instrument makers, and the expense of a voyage to England and back as well as the resulting delay are all saved by their being done in this country.

7. I consider the supplying of private individuals with instruments is important, because, as Colonel Cautley remarks, it prevents the accumulation of instruments, without the heavy loss to Government attending auction sales. The ruling rates of shops are so high, that it would be

ways be secured will answer as a security. At all

easy to command the whole market without any risk of loss to Government. This may not be considered desirable; and Government would probably prefer only such an amount of sale as would allow of new instruments being available without overstocking. It must be considered, however, that at present the most ordinary instruments can only be procured in India at prices rendering them inaccessible to a large class of the community and that to offer to supply at fair prices, would enable many who learn the rudiments of science in the Government and other educational establish. ents, to cultivate their tastes and put in practice the theoretical knowledge they have acquired.

6. If my personal acquaintance with the Superintendents of the Calcutta and Rookee depôts can be of any use to Government in procuring information, I shall be glad to assist in a matter which appears to me of such importance.

No. 53. ORDER THEREON, 3rd March 1860, No. 470.

The foregoing papers relate to recommendations made by the Government Astronomer, on the subject of the purchase, custody, and repair of the scientific instruments required by the various departments of the State, which he justly represented as one of much importance. Major Tennant recommended that all instruments with few exceptions should be procured direct from the best makers in England; and that the care of all instruments in store, their issue, and their repair when injured, should be made the special duty of an officer. He mentioned that both at Calcutta and at Roorkee a "mathematical instrument department" has thus been formed.

2. The Government are indebted to Major Tennant for his recommendations on this subject, the importance of which they fully recognize. They have given careful consideration to the suggestions made, but they are not prepared to advocate the formation of a separate department for the purpose in view. They are of opinion that the best means of providing for the custody, issue, and repair of instruments, will be to entrust these duties to the Superintendent of the Engineer workshop, under the general control of the Chief Engineer and with the assistance of a trained mathematical instrument maker.

3. The Government resolve to request the Chief Engineer to report on the details of the arrangement sketched in the proceding paragraph, with his opinion as to the best means of obtaining the services of an instrument maker. He will also report as to the best method to be adopted for procuring scientific instruments.

4. Adverting to the 7th paragraph of Major Tennant's letter of the 9th January, the Governor in Council considers that the instrument depôt should be on the scale necessary to supply public departments only. He considers it undesirable that the State should enter into competition with private dealers for the supply of the general market.

(Signed) T. PYCROFT,
Chief Secretary.

No. 10.

3 K

From Major J. T. Tennant Bengal Engineers
Government Astronomer.

To J. D. Bourdillon Esqr.
Secretary to Government Public Works Dept.

Sir.

I have the honor to acknowledge the Proceedings of Government No. 2 dated 3rd January 1860.

2 Whenever Government may honor me by calling for my advice I shall always deem it my duty to lay before them such information as I possess. I shall therefore always be ready to be the adviser as to the mode of procuring instruments, and I have already in my letter dated 1st November last for which the proceedings under acknowledgement were taken made a general recommendation. If the purchase of particular instruments in the local Market be the subject on which advice is required, I can solely offer it on the understanding, that such a cursory examination of an instrument as can be made is of little value and I can only repeat that a direct application to the Maker is the best security for obtaining a reliable article.

3 The only possible exception I know to this rule is in the case of Barometers which are exposed to great risk in carriage. Even in this case however I believe that careful packing which can always be secured will answer as a security. At all

I have myself twice imported Barometers safely and they have reached me safe after hundreds of miles of land carriage -

4 As regards undertaking the repairs of Instruments I beg to say that I could only do so at the expense of my efficiency as Astronomer without special arrangements. I am indeed at present repairing and altering several Instruments belonging to the observatory, but I am only able to do this, owing to the delay in mounting the new Transit Circle, I have an amount of time available which I could never reckon on regularly. Even now I find that I am unable to finish some Computations which I am anxious to complete. My predecessors I suppose must have felt the same difficulty since I find that Government resolved on the 9th Dec. 1852 in the Military Department that the Astronomer should have charge of all Scientific Instruments, though the Resolution appears never to have been acted on

5 It would not be possible for the Astronomer, fully employed as he is, to carry on Repairs without a professional Mathematical Instrument Maker at head of the Works shops, on whom practically all supervision would fall; and I believe that it would be necessary besides to have an Assistant for the Observatory. This is hardly any detail of the Observatory at present which does not require my direct supervision and the qualifications of the Assistants (Natives) are not sufficiently high to allow

5K

of any detail being derived from them in matters involving investigation

6. I beg to refer to a printed series of proceedings of a Committee appointed for the establishment of an Instrument Depot terminating with the Resolution to which I have alluded (of which you have doubtless a copy) from which much valuable information will be derived. As regards the Workshops it has been found advisable to obtain a Professional Instrument maker from England. The project for making delicate Instruments and dividing them has been in hand carried out; Captain Allen (an excellent workman himself) had no experience of Instrument making and he very much underrated the difficulties both of procuring Apparatus and using it to good purpose. Where the labor is a large portion of the value of an Instrument and particularly if the skill required be great, and the bulk small, it cannot I believe be profitably made in India as the habits of native workmen are very dilatory, and little reliance can be placed on their care; while European workmen and superintendence are of necessity very expensive. Repairs however are more highly charged by Instrument makers and the expenses of a voyage to England and back as well as the resulting delay are also saved by their being done in this country

3d. I consider the supplying of private individuals with Instruments is important, because as Colonel Cautley remarks it prevents the accumulation of Instruments without the heavy loss to Government attending Auction sales. The selling rate of shops is so high that it would be easy to command the whole market without any risk of loss to Government. This might not be considered desirable; and Government would probably prefer only such an amount of sale as would allow of new Instruments being available without overstocking. It must be considered however that at present the most ordinary Instruments cannot be procured in India at prices rendering them accessible to a large class of the Community and that to offer to supply at fair prices, would enable many who learn the Rudiments of Science in the Government and other Educational Establishments, to cultivate their tastes and put in practice the Theoretical knowledge they have acquired.

4th. If my personal acquaintance with the Superintendents of the Calcutta and Roorkee depôts can be of any use to Government in procuring information I shall be glad to assist in a matter which appears to me of such importance.

I have the honor to be
Sir
Your most obedient Servant
J. Beaumont Major R.E.
Govt Astronomer

Madras Observatory
Jan 9th 1860

Proceedings of the Madras Government
under date 6th March 1860

No 470

P.W.D.

Sent again the following
Letter — from Major Tennant
Govt astronomer, dated
Nov 11/59 (illegible) 2
Breaks of Govt Lens
3 Dec 1/60
Encl

Read also the following
Letter
from do
Astronomer, dated
Nov 30 1859

The foregoing
Letter relate to certain
Instructions made by the
Govt Astronomer, on the
subject of the purchase
Cutcherry, & repairs of the
Circular instruments
required by him

Read

P.W. 1860 Observatory
Proceedings 10th May No 73
Dated 9th January 1860

Received 11th do
From the Govt Astronomer.

Replies to Government
Proceedings No 2 of January 3rd
Major Tennant will observe that
Cannot at present superintend the repair of Instruments

Madras Observatory
January 9th 1860.

P.W. Proc. 10 January 1860
No 3-4

Copy of the above to Govt
Dated 23 Jany 1860 No 35

No 52

Read

No 470. 3d March

Dated 18th January 1860 No 4

Depts of the State, which
he justly represented as [illegible]
[illegible] of much importance.
Major Renaut recommended
that all instruments with
few exceptions should be
procured direct from the
best makers in England;
& that the care of all
instruments in store,
their issue, & their repair
when injured, should be
made the special duty
of an officer - He recom-
mended that both at
Calcutta & at Roorkee
a "Mathematical instru-
ment Dept" had thus
been formed -

2 The Government
are indebted to Major
Renaut for his recommen-
dations in this subject,
the importance of which
they fully recognize.
They have given careful
consideration to the sug-
gestions made, but they
are not prepared to
associate the formation
of a separate 11K Dept for
the purpose in view. They
are of opinion that the
best means of providing
for the custody, issue,
& repair of instruments,
will be to entrust these
duties to the Supt of the
Engr workshop, under
the general control
of the Ch. Engr & with
the assistance of a
trained mathematical
instrument maker.

3 The Govt resolve
to request the Ch. Engr
to report on the details
of the arrangements sketch-
ed in the preceding
paragraph, with his
opinion as to the best
means of obtaining the
services of an Instrument
maker - He will also
report as to the best
method to be adopted
for procuring scientific
instruments -

4.— Referring to the 7th Para: of Major Gen-
erals letter of the 9th
Janr, the Govr in C
considers that the Instru-
ment Depôt should be
on the scale necessary
to supply Public Depts
only. He considers it
undesirable that the
State should enter
into competition with
private dealers for the
supply of the general
market.

10 Copies to the Chief Engineer Cap.s
" " Govt Astronomer

1st July 1829

10th Lancy /60 No. 384.

Copy in a Letter to Govt
Dft 22d Lancy /60 No. 35.

Public Works 1860 Dept.
Pro: of Govt 10th March
No 470.
Pro: of the Madras Govt
Dft 3d March /60
From the Chief Engr Dft 2d
May /60 No 1090 with Do.

On the subject of
purchase, Custody and
Repair of the scientific
instruments required by
the various departments
of the State.

No 52 to 53.