

Binding and No. 606
MG 24, H 56

EDWARD SABINE

AF/M/241/65
1 July 1966

I N D E X

MG 24
H 56

Historical Records Met. O.O.M.7.3.2.5.
Le Hers (General) from Sabines office
to Canada, 1841-1859. (Item 78 List
A 17864/61 dated 3rd Jan. 1962).

1841	<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
	August 3	Lieut. Riddell to Lt. Younghusband	Additions required to complete the Toronto Returns for 1840.	1 a
	August 25	Professor Lloyd to Lt. Younghusband	Remarks on Observations taken in January, February & March 1841.	1 b
	September 14	Lieut. Riddell to Lt. Younghusband	Forwarding a Copy of Supplemental Instructions.- relative to the erection of an additional building for Auxiliary Apparatus. Enclosing copy of a Letter from Secretary to the Board authorizing the Storekeeper to pay the extra pay of an additional N.C. Officer, and forwarding Copies of the Form of Publication.	2
	October 4th	" "	List of Articles forwarded to Toronto in charge of Lieut. Pollock. Remarks on an omission in Supplemental Instructions. Enclosing a new Form for the Observation of Temperature Corrections.	4
	December 2	" "	Answers to Queries respecting Times of Observation, additions and alterations required in making out the Returns, etc. - Enclosing copy of a Letter from Mr. Byham relative to the payment of bills for Instruments, etc. - term day Curves. Requesting information respecting Observations taken in temporary Observatories.	5
	July 21	" "	List of Articles forwarded to Toronto.	9
	December 23d.	Lieut. Riddell to Lt. Younghusband	Acknowledging receipt of Two Orders on Messrs. Cox and Co. - returns for October 1841, etc. - Requesting Half Yearly statement of the expenditure of Contingent Allowance. Enclosing term day Curve paper, etc., and asking for additional information relative to the Observations taken at Toronto.	10

1841
MG 24
H 56

- 2 -

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
June 3	Lieut. Riddell to Lt. Younghusband	Enclosing Bills and Receipts from Simms and Newman. Memo. from D. A. General relating to promotion of N.C.O.☞ Sundries -	10
July 1	" "	Copy of memo. on Absolute Intensity, magnetic moments etc. - Answers to former Queries, and directions.	"
" 19	" "	Directions not to move H. F. Bar when possibly to be avoided. - To discontinue Meteor returns, also Barometer uncorrected and attached Thermometer - these last to be Copied into Abstract Books only.	"
August 3d.	" "	Magnetic Affairs - Additional returns required of Dec. H. F. and V. F. adjustments - Grubb's memo. as to Glass Scales being rubbed with black lead. Sundries.	"
September 17th	" "	Sundries - Grubb's apparatus and the Copper Nails to be sent by Lieut. Gibbon - Stands used in Repository described & recommended moon culminating Stars asked for - meteor. Returns unnecessary Directions to apply for a new grant of £100, sending Abstract of previous Expenditure.	"
1842 February 2	" "	Enclosing Letter from Mr. Lloyd, with other papers connected with the Observatory at Toronto.	11
March 3	" "	Acknowledging receipt of Letters and Returns	12
February 17	Lieut. Younghusband to Lieut. Col. Sabine	Forwarding detailed Account of the Expenditure of grant for Contingent Expenses.	13
April 16	Lieut. Riddell to Lt. Younghusband	Financial observation - Hourly Observations to be made at Toronto - instructions relative thereto - Additional observations not sent home.	16

MG 24
H 56

1842 Date
May 18

From Whom
Lt. Riddell to Lt. Younghusband

Subject
Enclosing Memoranda - Form of abstract. - copy of letter, instruction on the use of instruments.

Page
17

June 18

" " "

Enclosing correspondence, curve paper, and forms.

18

July 4

" " "

Acknowledging receipt of letter - notifying receipt of Treasury letter. - remarks on the new observatory, etc.

18

August 3

Lt. Riddell to Lt. Lefroy

Copy of Board's Order. Sundries private.

18

Sept^r. 1

Lt. Riddell to Major Carter-Bonns

Contents of a Case sent to Lt. Lefroy.

19

October 3

Lt. Riddell to Lt. Younghusband

Hints for Term days '43, 4 & 5 - Sundries.

19

November 3

Lt. Riddell to Lt. Lefroy

Enclosing Bills of Lading. - Sundries.

19

December 3

Lt. Riddell to Lt. Lefroy

Enclosing bills and receipts for contingent expenses to Lt. Lefroy.

20

December 17

Lt. Colonel Sabine to Lt. Lefroy

That Mr. Lefroy is to make certain alterations in his paper communicated to the R. Society.

21

December 29

" " "

Respecting Lieut. Lefroy's route to Lake Superior and from thence to the shores of Hudson's Bay.

22

1843

March 31

Lt. Colonel Sabine to Lt. Lefroy

Lieut. Lefroy's approval of the arrangements proposed by Sir George Simpson.

24

March 3

Lt. Riddell to Lt. Lefroy

Notifying the number of Instruments, etc. sent to Lt. Lefroy per "Columbia" Steamer.

25

MG 24
H 56
1843

- 4 -

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
April 1	Lt. Riddell to Lt. Lefroy	Contents of a parcel forwarded to Lt. Lefroy by Sir G. Simpson	26
April 1	Lt. Riddell to Lt. Younghusband	Notifying to Lt. Younghusband a parcel sent for Lt. Lefroy.	27
May 1	Lt. Colonel Sabine to Lt. Younghusband	Instructions for Lt. Younghusband respecting observations.	27
May 3	Lt. Riddell to Lt. Younghusband	Enclosing a Copy of Portable Apparatus, revise page 1 to 28, etc.	29
May 18	" " "	Enclosing to Lieut. Younghusband a letter for Lt. Lefroy.	29
June 2	" " "	Sending to Lt. Younghusband 2 copies of Dr. Lloyd's papers on Magnetical Intensity.	30
June 2	" " "	Enclosing two letters and Sundries to Lt. Lefroy.	30
June 10	Lt. Riddell to Lt. Lefroy	Contents of a Case in charge of Capt. Burn, R.L. Artillery.	31
June 16	" " "	To Lt. Younghusband, acknowledging receipt of returns	31
September 2	Lt. Riddell to Lt. Younghusband	Requiring Plan of observatory, etc.	32
September 30th.	Lt. Col. Sabine to Lt. Younghusband	Questions concerning the Barometer, Thermometer & Absolute Declination.	32
October 16	" " "	Returns allowed to go to the rear, and requesting tabular views of direction & force of the wind.	33

MG 24
H 56

- 5 -

<u>1843</u>	<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
	October 31	Col. Sabine to Lt. Younghusband	Answering Lieut. Younghusband's letter, detailing the breaks in the differential Series.	35
	December 2	" " "	Deducting Mr. Geo. Allen's Bills from the enclosure for Cox & Co.	36
	December 31	" " "	Enclosing Mr. Geo Allen's receipt and requesting the absolute Declination for 120 scale Division of the Declination Magnetometer.	37
<u>1844</u>				
	January 31	Lt. Col. Sabine to Lt. Younghusband	To Lt. Younghusband, requesting plan for buildings, and detailing Mr. Airy's Anemometer results.	39
	February 2	Lt. Riddell to Lt. Younghusband	Answering Lt. Younghusband's letters of Aug. 7 & Nov. 20.	39
	March 29	Lt. Col. Sabine to Lt. Lefroy	Informing Lt. Lefroy of Dr. Locke's coincident Observ ^m .	40
	February 19	Lieut. Riddell to Lt. Younghusband	Apparant errors in Term - days of Jan. & Sept. '42.	43
	March 29, 30	" to Lt. Lefroy	Enclosing to Lt. Lefroy Portable Instructions pp. 1 - 64, etc.	43
	April 3rd.	" " "	Forwarding to Lt. Lefroy remainder of Portle Instructions.	43
	April 18	" Lt. Younghusband	Acknowledging receipt of Term days, etc.	44

MG24
H 56
1844

- 6 -

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
May 2	Lieut. Riddell to Lt. Younghusband	Forwarding a copy of Instructions to Lt. Younghusband and ordering the <u>Triple Observations</u> to be discontinued.	44
May 3	Lt. Colonel Sabine to Lt. Young- husband	Estimating the force of the Wind in figures, according to Mr. Airy's scale.	44
"	Lt. Riddell to Lt. Younghusband	Instruments forwarded for the Observatory and Survey.	45
May 17	Lt. Col. Sabine to Lt. Younghusband	To send the returns monthly and not $\frac{1}{2}$ yearly.	47
May 18	" " "	Comparison of Daniell's Hygrometer with simultaneous observations of the wet and dry thermometers.	49
May 18	Lt. Riddell to Lt. Younghusband	That the forms printed on one side were for surveys with remarks on the Bifilar readings.	49
June 3	" " "	Pressure of the anemometer plate.	52
June 27	Lt. Riddell to Lt. Clerk	This is inserted here erroneously (See the Index of the Cape of Good Hope Book).	52
July 15	Lt. Col. Sabine to Lt. Younghusband	To renew the observations with Daniells' Hygrom ^r .	57
July 18	Lt. Riddell to Lt. Younghusband	Means of Temp ^r . Correc ⁿ . - Remarks on the junior N.C. Officers.	60
July 16	" " "	List of Instruments forwarded per "Apollo".	63
July 21	Lt. Colonel Sabine	Memo. of letters to Mr. Renwick, Dr. Locke, and Lt. Younghusband.	64

MG 24
H 56
1844

- 7 -

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
August 1	Lt. Riddell to Lt. Younghusband	Enclosing Mr. Jone's Bill for Portable Apparatus	65
August 3	" " "	Requiring information on the Dip Observations	67
September 18	" " "	Acknowledging Lt. Younghusband's letters of 9th & 26th August.	68
September 18	Lt. Col. Sabine to Lt. Younghusband	Memo. of letter to Lieut. Younghusband on observations of falling stars.	70
September 19 October 1	Lieut. Riddell to Lt. Younghusband	Requiring Actinometric observations in detail.	71
October 14	Lt. Col. Sabine to Lt. Younghusband	Inquiries concerning the Wind Results	73
October 17	Lieut. Riddell to Lt. Younghusband	Calculations and results of Deflection.	75
October 18	" " Lt. Lefroy	Memo. of letter acknowledging returns, etc.	78
October 31	" " to Lt. Younghusband	On the difference between the readings of the self - registering and Standard thermometers.	78
November 4	" " "	Answering letters of 5th and 10th October, with remarks on the observations of absolute Declination.	81
November 11	" " "	Memo. of letter explaining the alteration of signs+ and -.85	85
November 18	" " to Lt. Lefroy	Receipt of a letter brought home by mistake, by Mr. Lee Lewis.	85
November 26	Lt. Colonel Sabine to Lt. Lefroy	On calculating the elastic force of the vapour.	86

MG 24
H 56
1844

- 8 -

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
December 3	Lieut. Riddell to Lt. Younghusband	Explaining the principles of correction for the terms $\frac{P}{z2}$ and $\frac{Q}{z4}$ in Experiments of deflection, etc.	87
December 16	Lt. Col. Sabine to Lt. Younghusband	Remarks on the reports of the wind in 1841 and '42.	89
December 17	" to Lt. Lefroy	Enclosing a reply made to the Secretary of the Hudson's B. Company, on the subject of Lt. Lefroy's travelling account.	91
December 24	" "	Upon the same subject.	92
December 24	" "	Intention of the Government to send another expedition to the N. American Continent.	92
 <u>1845</u>			
January 1	Lt. Col. Sabine to Lt. Lefroy	Forwarding Report on the Meteorology of Canada	93
January 17	" "	Acknowledging letter of 9th Dec. and Enclosures of accounts to the Royal Society.	94
January 31	" "	Returning the bills, etc. to Lieut. Lefroy.	94
January 31	" "	Remarks on Lieut. Lefroy's survey.	95
February 3	Lieut. Riddell to Lt. Lefroy	Answering letters of 10th, 16th and 21st. Dec. etc.	96
February 1	Lt. Col. Sabine to Lt. Lefroy	Caution respecting observations made after the time duly specified.	96
February 14	" "	On various magnetic subjects	97

MH 24
H 56
1845

- 9 -

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
February 28	Lieut. Riddell to Lt. Lefroy	Acknowledging receipt of various returns.	100
February 28	Lt. Col. Sabine to Lt. Lefroy	Magnetic Survey North west of America.	101
March 3	Lieut. Riddell to Lt. Lefroy	Respecting outer cases for small Observatory Instruments.	103
April 1	Lt. Col. Sabine to Lt. Lefroy	Dip observations made with a needle marked A	104
March 29	Lieut. Riddell to Lt. Lefroy	Various suggestions and comments on Observation, Etc.	106
April 11	" "	Contents of a case forwarded in charge of Lt. Boothby.	109
June 3	" "	Comments and suggestions on various points.	109
June 14	Lt. Col. Sabine to Lt. Younghusband	Vibrate needles in possession of Dr. Locke at Toronto.	115
July 1	" to Lt. Lefroy	Conclusions come to by Magnetic Conference	116
July 2	" "	Survey in the Hudson's Bay Territories	118
July 3	Lieut. Riddell to Lt. Lefroy	Instruments shewing decreasing instead of Increasing force.	122
July 5	" to Mr. Jones	Account for the Observatory to be amended.	123
July 8	" to Lt. Lefroy	Review of Public and Private account with.	124
July 18	" "	Suggestions and comments respecting Observations	125
July 18	Lt. Col. Sabine to Lt. Lefroy	Lieut. Lefroy's leave of absence, continuance of observatories.	128
July 23	" "	Direction and force of the Wind - a table of, etc.	130
July 23	to Lt. Younghusband	General Abstract of receipts and expenditure	131

MG 24
H 56
1845

- 10 -

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
August 1	Col. Sabine to Lt. Lefroy	Survey observations form in which to be printed	132
July 31	Lt. Riddell to Lt. Lefroy	Acknowledging receipt of returns, etc.	136
August 2	Col. Sabine to Lt. Lefroy	Information on points connected with certain magnets	137
August 18	" "	Are the Bills now forwarded chargeable to the Contingent.	138
August 18	Lt. Riddell to Lt. Lefroy	Remarks and comments on certain magnetic returns.	138
August 18	Col. Sabine to Lt. Lefroy	Various copies relative to the observations and Observatories	141
August 22	" "	Annual variation of the Horizontal force, etc, etc.	142
August 29	Lt. Riddell to Lt. Lefroy	How has the Fox left at the Cape by Lt. Lefroy been disposed of.	144
September 17	" "	Acknowledging the receipt of certain returns.	144
October 3	Col. Sabine to Lt. Lefroy	Survey observations relative to, etc.	145
October 7	Lieut. Riddell to Lt. Newman	Returning a Bill to Mr. Newman presented a second time for payment - this bill was paid by Mr. Riddell.	149
October 13	Col. Sabine to Lt. Lefroy	Monthly determinations of the absolute Hor. force & etc.	150
October 16	Lt. Riddell to Lt. Lefroy	Remarks upon the returns for May and June	155
October 16	Col. Sabine to Lt. Lefroy	Observations made at Fort William relative to	157

MG 24
H 56
1845

- 11 -

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
October 18	Lt. Riddell to Lt. Lefroy	Dip and Induction Inclinator results, etc.	159
October 25	" "	Meteorology of Bombay, Russian Annuaire ^{Gen.} forwarded to Lefroy.	160
November 1	Col. Sabine to Lt. Lefroy	Inclination returns, Toronto forwarding a report of examination on & requesting his remarks.	161
November 3	Lt. Riddell to Lt. Lefroy	Dip by Induction Inclinator ^{Gen.} relative to a disagreement of the Diurnal Variation of -	161
November 15	Col. Sabine to Lt. Lefroy	Accommodation for Toronto Detachment.	162
August 18	Lt. Riddell to Lt. Younghusband	Former observations of vibrations	142
November 15	Col. Sabine to Lt. Lefroy	Capt. Lefroy's leave granted	163
November 17	" "	Dew and Co-operation Hygrometers comparisons on to be made.	164
November 18	Lt. Riddell to Lt. Lefroy	Parcel from Allens, method of conveyance, etc.	164
December 2	" "	Dip Observations comments on, Sheet Scales sent with Allens parcel of Stationery, alluded to in preceding letter.	167 & 166
 <u>1846</u>			
February 18	Col. Sabine to Lt. Lefroy	Curves of Survey term Observations called for Absolute determinations of the Declination Dew Point comparison of. To write a memoir on what he has accomplished during the winter. Geographical positions of La Combes & Pt. Bapteme. Memo of Latitudes & Longitudes made by Capt. Lefroy asked for.	168

MG 24
H 56
1846

- 12 -

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
October 13	Col. Sabine to Capt. Lefroy	Mr. Brookes self registering apparatus directions for	169
December 18	" "	Serjeant Johnston to have extra pay for extra work.	170
<u>1847</u>			
February 2	" "	Mr Airre on temperature expts - Serjeant Henry's relief.	171
February 3	Capt. Young ^d to Capt. Lefroy	Corrections to be made on a certain return-	172
April 23	Col. Sabine to Capt. Lefroy	Instructions for erecting and using the Anemometer	173?
May 17	" "	Gunner Jones embarks to relieve Serjt. Henry - Disturbance, Observations arrangement of, for publication.	178
July 19	" "	Comparison of Thermometers; Standard, Wet and dry bulbs.	181
September 2	Capt. Younghusband to Capt. Lefroy	Azimuth of the Declination Telescope, etc.	182
September 10	<u>I B I C</u>	How the various Thermometers should be distinguished	184
October 13	Col. Sabine to Capt. Lefroy	Receipts for money paid to Serjeant Johnson. Robinson's and Osler's Anemometer registration Athabasca Observations. The two force Magn ^{ars} . ces should be observed simultaneously during disturb ^{ces} . Mr. Airy is about to adopt Mr. Brooke's system of self registry.	184 to
November 3	" "	In following disturbances Mr. Brooke's apparatus perfectly successful.	186 187

MG 24
H 56
1847

- 13 -

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
November 12	Col. Sabine to Capt. Lefroy	Complete the series of six years hourly observations after which, directions are given for what is, and what is not to be done at the Observatory in future.	188
December 3	" "	Changes proposed by Captain Lefroy Mr. Airy's opinion on. Projections of the disturbances of Sept. & Oct. 1847 how to be arranged and executed.	193
December 18	Capt. Younghusband to Capt. Lefroy	New Mode of ascertaining the scale Coeff ^t of the Induction Inclinator according to Dr. Lloyd.	194
December 31	Col. Sabine to Capt. Lefroy	Scale and temp ^r e coeff ^t Induction Inclinator how to be determined.	195
<u>1848</u>			
Jan 25 + July 10	" "	Books and Stationery, etc. forwarded when and how	196
July 18	" "	Apparatus for Photographic registration, etc. & etc.	197
October 6	" "	Notifying that Credit had been given for $\frac{1}{2}$ 26. 15. 9 & Boddey's Bill paid £7.7.0.	198
October 27	" "	Enclosing a letter received from Dr. Lloyd, description of his method of obtaining the scale Coefficients of the Bifilar and Induction Inclinator with remarks upon Mr. Ronald's apparatus.	198
December 15	" "	Enclosing receipts from R. S. for Admission fee and year's Subscription. Answering queries respecting Athabasca observations.	200

MG 24
H 56
1849

- 14 -

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
April 12	Capt. Younghusband to Capt. Lefroy	Various remarks connected with the proof of photographic apparatus.	200
		Relative to observations made with Collisnator magnets at Toronto.	201
August 15	Mr. Brooke to Capt. Lefroy	Camphine may be dispensed with; directions for obtaining combined register of Declination & Horizontal Force on one paper:	204
August 24	Col. Sabine to Capt. Lefroy	New Instruments sent to Toronto; relative to their use, and to a change in the scale coefficient of the large Bifilar at that observatory.	206
September 6	" "	Relative to a newly proposed value of the Bifilar x: coefficient by Capt. Lefroy: and Temperature coefficient g-	208
September 7	" "	Supports of Mr. Ronald's self registering apparatus, of the suspension of the Lens; & enclosing one of Mr. Ronald's engravings.	211
September 25	" "	Electricity of the Atmosphere, replying to a Letter from Captain Lefroy relative thereto.	212
September 27	" "	"Fluctuations" that Captain Lefroy's time & thought must be at present too much occupied with Brooke's & Ronald's apparatus, to bestow any attention on this subject.	213
October 9	" "	Refixing the Instruments in Toronto Observatory.	214
October 25	" "	Value of x by vibration of Bar 17. 1846 & 1847.	215
October 26	" "	Professor Henry's visit to England: non-arrival of "Pearl" at Toronto. & relative to Instruments contained in her,	217

I N D E X

MG 24
H 56
1850

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
May 9	Col. Sabine to Capt. Lefroy	Captain Lefroy's Athabasca observations.	219
May 17	" "	Forwarding a paper on Absolute Hor: Intensity at Toronto.	220
May 24	" "	Capt. Lefroy's Athabasca observations; Standard Thermometers.	221
May 31	" "	Non-agreement of Disturbances, Toronto, Athabasca & Hobarton. & acquainting Capt. Lefroy that 2 Boxes of Instruments, etc. have been sent.	224
June 14	" "	Whether the Instruments sent to Toronto by "Pearl" & "Lady Elgin" have arrived safe? Trial of Messrs. Ronald's & Brooke's methods of Photography. Toronto contingent.	225
June 21	" "	Capt. Lefroy's Athabasca observations; scale coefficient of large Bifilar: Master General's approval of system of Auroral observations; comparative merits of Messrs. Ronalds' & Brooke's Instruments.	227
June 24	" "	Captain Lefroy's Introduction to Athabasca observations	229
June 24	" "	Extra Pay for senior N.C. Officer at Toronto Observatory	230
June 28	" "	Relative to his paper on Absolute Determinations	230
July 4	" "	Brooke's & Ronald's Instruments: Athabasca observations; Scale coefficient of Bifilar. Copy of recommendation to continue Toronto observatory.	230

MG 24
H 56
Date

I N D E X

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
<u>1850</u> July 4	Col. Sabine to Capt. Lefroy	Relative to printing the Disturbances	234
July 10	" "	Accounts between Toronto observatory & Col. Sabine	235
July 10	" "	Brooke's & Ronald's apparatus. Athabasca Observations.	236
July 31	" "	Ronald's Bifilar	238
August 9	" "	Self recording Instruments.	239
September 30	" "	Continuation of Toronto observatory: reply to Captain Lefroy's question "what is a disturbance"? Toronto contingent.	241
October 2	" "	Relative to a conversation with M. Regnault on the subject of Daniell's hygrometer: standard Thermometers , etc.	244
October 22	" "	Newhaven, Resolutions. Cases sent on board the "Gentoo".	246
November 4	" "	Mr. Walsh's experiments with Bifilar Magnetograph	247
<u>1851</u> February 19	" "	Applying for a grant to pay for repairs & etc. at Toronto Observatory.	249
April 16	Col. Sabine to Secretary, Board of Ordinance, Mr. J. Welsh (Hew) Capt. Lefroy	Performance of Capt. Lefroy's magnet at Kew	250

MG 24
H 56

I N D E X

- 17 -

<u>1851</u>	<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
May 8		Col. Sabine to Capt. Lefroy	Continuation of Toronto observatory. Serg ^t . Walker's increase pay. Annual variation of the Declination. Absolute Determinations at Cape of Good Hope.	252
May 21		" "	Capt. Lefroy's experiments of Freezing & Boiling points of Standard Thermometers; Experiments at Kew.	254
June 21		" "	Difficulties in Capt. Lefroy's lamps; Mr. Airey's opinion on Kew Instruments. Mr. Welsh's report on Daniell & Regnault.	255
July 11		" to Secretary, Board of Ordinance	Captain Lefroy's grant of extra pay during his absence from Toronto observatory.	257
July 18		" to Capt. Lefroy	Shocks and vibrations at Toronto. Shrinking of paper moistened to receive impressions on copper plate.	258
August 8		" "	M. Regnault's visit to Kew Observatory, etc.	259
September 12		" "	Observations with portable Declinometer 1845. 1846 & 1847 at Toronto; Box of Captain Lefroy's has been sent to Paris; what sum to be included for Sergeant Walker's Lodging money?	260
September 26		" "	Continuation of Toronto observatory: Disturbances at Kew; Capt. Lefroy to send correctinns for absolute determinations of Declination & Horizontal Force.	262
October 3		" "	That Capt. Lefroy will send all the verifications which have been made of v, v ₁ , v ₂ .	264

MG 24
H 56
1851

I N D E X

- 18 -

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
October 7	Colonel Sabine to Capt. Lefroy Captain Terryburton	Discrepancies between Capt. Lefroy's report of 1849 & 1851, on the Absolute Declination series.	265
October 10	Col. Sabine to Capt. Lefroy	Mr. Ronald's & Brooke's apparatus. Notice of Auroral Lights.	266
October 24	" "	Sergeant Walker's extra pay; Abstract of observations with large Declinometer at Toronto.	267
November 7	" "	M. Regnault's new hygrometer; magnetograph available for Eye observations.	268
November 13	" "	Comparison of Barometer at Toronto with Standard at Washington: construction of one at Kew.	269
November 17	" "	M. Regnault's Telescopes have arrived & will be forwarded to Toronto.	270
November 26	" "	Difference of TT ² K with different rings, probably caused by inaccuracies of measuring.	271
<u>1852</u>			
February 27	" "	Relative to difference between 2 feet and 9 in Declinometers,	272
April 8	" "	Capt. L's Therm ^r . corrections; £17.0.6 placed to his credit and that £50 will be granted for his contingencies.	273
April 16	" "	Relative to the settlement of certain sums £50 with Cox & Co. & £17.0.6. & requesting copy of the Contingent Acct.	274
June 18	" "	Requesting the series of Bifilar & ect. Obs ^y . '50-51 to detail the alteration of the Co-efficients.	275

MG 24
H 56
1852

I N D E X

<u>Date</u>	<u>From Whom</u>	<u>Subject</u>	<u>Page</u>
August 24	Col. Sabine to Capt. Lefroy, R.A.	Acknowledging a letter of 5 August.	278
November 25	" " "	Enclosing Mr. Glaisher's reply to a note sent to Mr. Airy.	278
December 3	" " "	Enclosing the first sheet of Athabasca paper.	279
December 11	" " "	Enclosing copies of letters respecting the discontinuance of the Obsy.	279
December 11	" " "	Enclosing copies of letters respecting Relief of detachment.	280
December 24	" " "	Respecting the Transfer of the Obsy & certain sums connected with the Contingent.	280
December 24	" " "	Directions for the Packing and transmission of the instruments.	282
December 30	" " "	Remarks on the examination of Total Force Observations.	282
<u>1853</u>			
January 19	Col. Sabine to Com ^r . Trollop, R.A.	Reply to a proposal to make magnetic observations	283
January 19	" to Capt. Lefroy, R.A.	Acknowledging the reports to the end of 1852. Remarks on the Photographic Traces, etc.	284
February 6	" " "	Communicating the necessity of a return to Reg ^t . duty unless otherwise ordered, etc.	285
February 7	" " "	Remarks upon the Toronto instruments	285

MG 24
H 56
1853

I N D E X
- 20 -

<u>Date</u>	<u>To Whom</u>	<u>Subject</u>	<u>Page</u>
February 15	Col. Sabine to Capt. Lefroy, R.A.	Respecting the imprest of £50 to Col. Sabine from the Toronto Contingent, and the payment of Bills, etc.	286
March 4	" " "	An imprest of £150 for the Toronto Observatory	289
February 24	" " "	Regarding the Contingent of Expenditures	289
February 25	" " "	Regarding a Memorial from the provincial Govt. for the Transfer of the Mag. Observatory, etc.	290
March 11	" " "	The Lords Commiss ^{rs} . of the Treasury see no reason to delay the withdrawal of the Observatory detachment.	292
March 14	" " "	Reply to a letter of Feb. 11th regarding a difficulty in the H. F. absolute determination in 1852.	292
March 18	" " "	Directing the Transfer of Obsy. and insts. to provincial Authorities.	295
March 24	" " "	A letter entered in the Confidential Book.	295
March 31	" " "	Acknowledging a Copy of Mr. Morin's letter of 2 March.	297
April 5	" " "	Sale of Col. Sabine's Transit & Barrow's Incl ^r . referring to letters of 8 April 1852, and 14 June, 1850. Intimating that an Inclinator & Unifilar are ready to be sent, etc.	298
June 22	Col. Sabine to Prof. Cherriman	Standard Thermometers from Kew. Mean Time, preferred to local Time.	299
August 2	Col. Sabine to Capt. Lefroy	The Estimate of the expense of printing the Athabasca Observations, etc.	302

MG 24
H 56
1853

I N D E X

- 21 -

<u>Date</u>	<u>To Whom</u>	<u>Subject</u>	<u>Page-</u>
August 11	Col. Sabine to Prof. Cherriman	Canadian Parliament grants £2000 for the Toronto Observatory, etc.	303
August 11	" " "	Cost of Inclinator, stretching of Bifilar suspension, etc.	304
September 27	" " E.P. Taché	Acknowledging receipt of Bill of Exchange for £160	305
October 7	" " Prof. Cherriman	Bill of Exchange £160. New Unifilar, etc.	305
November 23	" " "	Inclinator and Unifilar to be forwarded in a few days. The four abstract Books to remain at Toronto, etc.	306
<u>1854</u>			
February 1	" " "	Acknowledging Receipts of Instruments; variable pendulums.	308
August 6	" " to Capt. Lefroy	Movement of papers relating to Toronto observatories prior to their checking & publication.	310
<u>1855</u>			
February 12	" " to Prof. Cherriman	Congratulatory letter on appointment re Director of Observatory at Toronto.	311
August 1	" " "	Pursuant upon the possible removal of Prof. Cherriman from Toronto arrangements for the Toronto pedulums return to U. K.	314
July 26	" " "	Letter covering transmission of work paper for reproductions of magnetic observations.	315

MG 24
H 56

I N D E X

<u>1856</u>	<u>Date</u>	<u>To Whom</u>	<u>Subject</u>	<u>Page</u>
	March 10	Col. Sabine to Mr. Kingston	Acknowledgment for table of declination, 1853-55.	315
	November 27	Col. Sabine to Prof. Kingston	Arrangements for Newman's Apparatus for observing atmosphere electricity to be constructed for Toronto Observatory.	316
<u>1959</u>				
	January 4	Col. Sabine to Prof. Kingston	Intention of publishing 4 ^{III} Toronto volume	316