

PAPER X.—LATITUDE OF THE OBSERVATORY.

By LIEUTENANT E. D. ASHE, B. N., F. R. A. S.

[Read before the Society, 5th May, 1864.]

THE many advantages and accuracy of results in obtaining the Latitude, by placing a transit instrument in the prime vertical, induced me to prefer that method to any other.

A small transit instrument of 24 inches focal length, by Simms, was placed nearly in the prime vertical; the place of observation was immediately to the northward of the transit room, in a temporary wooden building erected for the purpose.

The assistant, Mr. Heatley, was the observer and computer.

A mean-time chronometer; that beat half-seconds, was placed upon a table near the transit instrument, and the beats could be distinctly heard when taking the observations, with but few exceptions, when the noise common to a barrack-square interfered.

The level was always applied, and the chronometer compared, both before and after each observation.

Observations were taken with the instrument in reversed positions, and the same star taken generally east and west, and the star was also taken as it passed the meridian by the transit instrument of the Observatory; and always a sufficient number of clock-stars were taken to insure the angle Z , being, known to a tenth of a second. When this formula was used.

$$\text{Tan } \odot = \frac{\tan \delta + \cos Z.}{\text{Cos } \frac{1}{2} \text{ time elapsed.}}$$

Where \odot = Latitude, and δ declination of star.

By reversing the instrument any error of collimation, or inequality of pivots, will produce exactly a contrary effect on the Latitude; and it is presumed that the Latitude of the Observatory is determined with as much accuracy as the declination of the stars are known.

The stars selected are taken from the B. A. C., 1850, Nat. Alk. and Radcliff Cat., and out of 15 stars with lamp N., and 10 stars taken with lamp South, there is a range of only 1".3 in the means.

RESULT OF OBSERVATIONS FOR THE DETERMINATION OF THE
LATITUDE OF THE QUEBEC OBSERVATORY.

STAR'S NAME.	Position of Lamp.	Date of Observation.	° ' "	Mean of Each Set.
♄ Herculis.....	N.	3rd August, 1863	46...48...22...5	} 46 48 21 5
Do	N.	4th do do	46...48...21...0	
Do	N.	6th do do	46...48...21...0	
α Cygni.....	N.	21st do do	46...48...21...0	} 46 48 21 0
Do	S.	28th do do	46...48...20...3	
Do	S.	31st do do	46...48...21...2	
Do	N.	20th October, do	46...48...21...5	
Do	N.	26th do do	46...48...21...8	
♁ Cygni.....	N.	29th do do	46...48...20...5	} 46 48 20 2
Do	N.	26th August, do	46...48...21...6	
Do	S.	27th do do	46...48...20...5	
Do	S.	31st do do	46...48...18...5	} 46 48 20 2
♁ Cygni.....	S.	27th do do	46...48...21...6	
Do	S.	28th do do	46...48...18...0	
Do	S.	31st do do	46...48...18...5	
Do	N.	20th October, do	46...48...20...6	
Do	N.	26th do do	46...48...21...0	} 46 48 21 2
Do	N.	27th do do	46...48...22...1	
Do	N.	29th do do	46...48...19...6	
16 Lyrae.....	N.	10th Sept'r. do	46...48...22...0	
Do	N.	16th do do	46...48...23...0	
Do	S.	28th do do	46...48...21...2	} 46 48 21 2
Do	S.	29th do do	46...48...20...5	
Do	N.	30th do do	46...48...20...5	
Do	S.	1st Novemer., do	46...48...20...0	
Lat of Observ'y.				} 46 48 20 8
Mean.....				

TRANSACTIONS

OF THE

Literary and Historical Society

OF QUEBEC.

SESSION OF 1864-5.

.....
NEW SERIES.—PART 3.
.....

Quebec :

PRINTED BY HUNTER, ROSE & CO.

1865.



TRANSACTIONS

OF THE

Literary and Historical Society

OF QUEBEC.

SESSION OF 1864-5.

.....
NEW SERIES.—PART 3.
.....

Quebec :
PRINTED BY HUNTER, ROSE & CO.
1865.

CONTENTS.

	Page
PAPER I.—By JOHN LANGTON, M.A., President,—Opening Address	1
“ II.—By WM. COUPER,—List of Coleoptera taken at Quebec and other parts of Lower Canada	25
“ III.—By HERBERT WILLIAMS, M.E.,—Copper Mining in Canada East	37
“ IV.—By Professor PAUL C. SINDING,—The Ancient Scandinavians : their Maritime Expeditions, their Discoveries, and their Religion	51
“ V.—By Professor PAUL C. SINDING,—The Sleswick-Holstein Question	69
“ VI.—By E. A. MEREDITH, LL.D.,—Short School Time, with Military or Naval Drill, in connection especially with the subject of an Efficient Militia System	84
“ VII.—By Rev. JAMES DOUGLAS,—On Two Mummies from Thebes, in Upper Egypt	108
“ VIII.—By E. T. FLETCHER,—The Lost Island of Atlantis	113
“ IX.—By E. T. FLETCHER,—On the Secular Change of Magnetic Declination in Canada, from 1790 to 1850	137
“ X.—By JOHN LANGTON, M.A., President,—On Some Early Records of the Magnetic Declination in North America	145

