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To the Trustees of \_\_\_\_\_

School Section, No. \_\_\_\_\_

in the Township of \_\_\_\_\_

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### CONTENTS OF THIS NUMBER.

PAGE

I. METEOROLOGY AND SUBJECTS RELATING TO THE WEATHER .....	33
Meteorological Stations in Upper Canada—Smithsonian Table of Mean Temperatures for North America—Course of a Meteor through Canada—Meteorological Observations made at Senior County Grammar School Stations in Upper Canada—Meteorological Reports—Present and Future Omnious Seasons—Meteorological Observations throughout the World—Sir John Herschel and the Weather—How to use the Barometer—Foresight of the Weather—Use of a Barometer in Farming—Report on Agricultural Meteorology—The Law of Storms.....	33-40
II. EDITORIALS—(1) Official Replies of the Chief Superintendent of Education, to Local School Authorities—(Continued from last No.) (2) Examination for Grammar School Masterships. (3) Illegal Signing of Trustees' Names. (4) The Trustees' School Manual for 1861 .....	40
III. PAPERS OF PRACTICAL EDUCATION—(1) The Teacher's Office. (2) Blessed Children. (3) The Conduct of Our Saviour towards St. Peter. (4) The Outward Forms of Respect due to Parents .....	41
IV. BIOGRAPHICAL SKETCHES—No. 7. Frederick William IV. King of Prussia. No. 8. The Rev. Dr. Croly. No. 9. The Duke of Norfolk. No. 10. The Funeral of the late Baron Bunsen .....	43
V. STATISTICAL PAPERS—(1) History of the National Debt. (2) English Cotton Factories. (3) Cotton Trade of France. (4) English Railroads .....	44
VI. MISCELLANEOUS—(1) The Falling Snow. (2) Education of the Queen's Children. (3) The Queen and her Daughters. (4) Lord Brougham's Letter to the Queen. (5) The Calligraphy of Important Personages. (6) Booty taken by the Allies in China. (7) Wellington never lost a gun .....	46
VII. Short Critical Notices of Books .....	47
VIII. Educational Intelligence .....	47
IX. Literary and Scientific Intelligence .....	48
X. Departmental Notices and Advertisements.....	48

### THE GRAMMAR SCHOOL METEOROLOGICAL STATIONS IN UPPER CANADA.

The extraordinary character of the weather both in Europe and America, during 1860, has caused the attention of scientific men to be earnestly directed to the importance and value of a more thorough system of meteorological observation. In France these observations are regularly taken at various points, and the results transmitted to Paris by telegraph, there to be published in the newspapers. In England several meteorological stations have been established at various points; and the London daily journals have a column specially set apart for the publication of meteorological information. During the late severe weather in England the papers were filled with reports on the subject, many popular errors were exposed, and the cause of meteorological science advanced. The London correspondent of a Toronto paper, under date of the 24th ult., thus refers to the subject:—"The Press has lately filled its columns with reports and communications respecting the extreme cold and the effects arising out of it. In recognition of the absorbing interest taken in anything relating to the weather by the British people, our chief newspapers have for some time past devoted considerable space to meteorological reports and their attendant phenomena; but to any one unaware of the national hobby, the importance given to this subject would seem incredible. Every one who owned a thermometer appeared to think the world at large ought to be informed of its daily statements through the medium of the press; and, to make

the matter more interesting, generally added an abstract of their observations for many years back. That thermometers, like doctors, differ, was convincingly shown from the different readings transmitted for publication on the same day and from the same place. Many ludicrous errors were exposed by this means, and much reliable information as to the degree of cold prevailing throughout the country was obtained. Among the reports whose accuracy is questionable, there was a statement from the North of England which mentioned that the thermometer stood there as low as fifteen and even twenty degrees below zero. This extreme degree of cold appears hardly possible to occur in this country without a total change in the character of its climate; and although the latter proposition has been seriously entertained and debated upon lately by our savants, yet this fact one is not disposed to grant. However, for a considerable time the mercury descended regularly below zero every night, so as to cause ice nearly two feet thick to form in our rivers and ponds." In the United States, chiefly under the auspices of the Smithsonian Institution at Washington, a great number of meteorological stations have been established. That institution has furnished valuable information on the subject, and provided tables, charts, and regulations and suggestions for taking observations in a correct and uniform manner. In Upper Canada (in addition to the Provincial Observatory in Toronto) meteorological stations have been authorized by law and have been established at various Senior County Grammar Schools, and the instruments, tables, charts, instructions, &c., for these stations have been furnished by the Educational Department at Toronto. Already the value of these stations has been appreciated by scientific men in the United States, as will be seen by the correspondence which we publish in connection with this brief notice. A list of the stations is also inserted, together with a record of the returns, &c., which have been transmitted to the Educational Department up to the end of 1860.

Every enlightened country in Europe is now more or less engaged in prosecuting inquiries in this particular branch of science. In other parts of Her Majesty's dominions in various quarters of the globe, meteorological stations have been long established. Although the science is yet comparatively in its infancy, yet from the aggregate of facts which have already been collected at various points, and in different countries, truths of the highest value and importance in scientific research have been unfolded; unsettled theories have been tested, and ques-

tions relating to Physical Phenomena, which had long remained among the sealed mysteries of nature, have been satisfactorily solved.

A summary of the more important and valuable items of information which have been furnished to the Department in the monthly returns of the observations at the stations is inserted in this number of the *Journal*, and it is our intention to insert a similar table from time to time.

In addition, we append various papers and extracts on meteorological subjects, which will, no doubt, be found interesting. The most important one is the Table of Mean Temperatures which has lately been prepared at the Smithsonian Institution at Washington, and, for the preparation of which, meteorological abstracts were furnished by the Educational Department, as will be seen by the following correspondence which we insert from the *Journal of Education* for January, 1860 :—

SMITHSONIAN INSTITUTION,  
Washington, D. C., Nov. 3, 1859.

DEAR SIR,—I write to ask as to the progress you are making in the establishment of the Canadian system of Meteorology, since we are anxious to co-operate with you in collecting materials for tracing the origin and progress of atmospheric movements. We are particularly desirous at this time to obtain as many records as possible of the period from about the middle of December, 1858, to the middle of January, 1859. The Institution would readily pay the expense of copying records for this period, and will be gratified to reciprocate in any way in its power the favours which may be conferred.

Very respectfully,  
Your obedient servant,  
JOSEPH HENRY, *Secretary*.

J. GEORGE HODGINS, Esq.,  
Education Office, Toronto, Upper Canada.

EDUCATION OFFICE, Toronto, Nov. 16, 1859.

SIR,—I have the honour to acknowledge the receipt of your letter of the 3rd instant, and being desirous of co-operating with you as far as I can, in the important object you have in view, I transmit to you, by Express, such Meteorological Reports as I have received during the period to which you refer. We have got 14 stations established in connection with the County Grammar Schools of Upper Canada. We have made arrangements to establish 30. As yet, we have not made any practical use of the observations taken. I will thank you to return these reports at your earliest convenience, as soon as you shall have done with them.

I have the honour to be, Sir,  
Your obedient servant,  
(Signed,) E. RYERSON.

JOSEPH HENRY, Esq., LL.D.,  
Secretary, Smithsonian Institution, Washington, D.C., U.S.

SMITHSONIAN INSTITUTION,  
Washington, D.C., Nov. 30, 1859.

DEAR SIR,—I write to thank you for the loan of the Meteorological Observations, which have been safely received, and will be returned as soon as we can extract from them the facts which have a bearing upon the points in which we are at present most interested. We find the progress of the change of weather, which we mentioned in our last letter, very strikingly exhibited in your Observations, and therefore the data with which you have furnished us will enable us to extend our investigations to the north, and be of essential service in tracing the extent and character of the great waves of temperature which traverse the North American continent.

Very respectfully, your obedient servant,  
JOSEPH HENRY, *Secretary*.

The Rev. Dr. RYERSON,  
Chief Superintendent of Education for U. C., Toronto.

SMITHSONIAN TABLE OF MEAN TEMPERATURES FOR NORTH AMERICA.

Prepared from the reductions of Observations at more than One Thousand Places, for an aggregate period of several Thousand Years, by the Smithsonian Institution, Washington, D. C., 1860.

Places.	Spring.	Summer.	Autumn.	Winter.	For the Year.	No. of Years.	Places.	Spring.	Summer.	Autumn.	Winter.	For the Year.	No. of Years.
<b>Iceland:</b>							<b>Rhode Island:</b>						
Reikjavik .....	37.04	53.54	37.94	29.18	39.43	14½	Newport .....	44.84	68.12	53.42	31.16	49.39	40
<b>Greenland:</b>							Providence .....	44.87	68.17	50.32	28.06	47.85	23
Godhaab .....	23.26	40.62	29.14	14.14	26.79	13½	<b>Connecticut:</b>						
Omenak .....	14.15	40.77	23.07	-5.12	18.22	5	Hartford .....	47.92	69.45	51.75	30.07	49.80	15
<b>Russian America:</b>							New Haven .....	46.27	68.73	51.94	29.60	49.13	12
Iluluk .....	33.42	47.97	39.72	32.07	38.30	2	<b>New York:</b>						
Sitka .....	43.78	67.50	47.06	35.55	45.97	9½	Albany .....	47.61	70.17	50.01	25.83	48.40	24
<b>British America:</b>							Auburn .....	44.87	67.19	51.80	26.18	47.39	22
Boothia Felix .....	-5.21	38.04	9.69	-27.71	3.70	2½	Flatbush .....	46.62	70.48	53.97	32.67	50.93	24
<b>Labrador:</b>							Fort Columbus .....	48.74	72.31	54.41	31.38	51.71	33
Nain .....	21.65	47.08	32.20	-0.38	25.11	9½	Ithaca .....	46.87	68.12	49.35	29.62	48.12	17
<b>Hudson's Bay Territory:</b>							New York City .....	49.07	72.43	54.57	31.63	51.92	30
Fort Chippewayan .....	22.76	58.70	31.89	-3.34	27.50	3½	Penn Yan .....	44.26	66.87	48.43	26.61	46.54	26
Fort Simpson .....	26.10	59.16	26.24	-11.04	25.12	2½	Rochester .....	44.84	67.36	48.78	27.26	47.06	19
Norway House .....	26.53	59.89	29.99	-2.81	28.40	7	Utica .....	44.48	66.50	47.35	24.47	45.70	23
<b>Nova Scotia:</b>							West Point .....	48.72	71.38	53.21	29.68	50.74	30½
Albion Mines .....	37.82	63.52	46.17	20.85	42.09	11½	<b>New Jersey:</b>						
Windsor .....	48.78	73.77	53.85	29.32	51.43	17½	Lambertville .....	49.70	72.95	52.95	30.99	51.50	12½
<b>Newfoundland:</b>							Newark .....	45.46	68.52	50.16	28.86	48.25	22
St. John's .....	32.28	57.80	43.93	23.19	39.18	5	Trenton .....	49.83	71.06	52.75	32.32	51.49	6
<b>Canada:</b>							<b>Pennsylvania:</b>						
Montreal .....	43.70	70.77	46.93	17.19	44.65	27	Alleghany .....	49.97	71.14	51.43	30.61	50.79	21½
Quebec .....	38.63	65.34	43.97	13.82	40.31	10	Carlisle .....	49.76	72.10	52.05	30.45	51.09	11½
Hamilton .....	45.04	72.35	51.29	23.13	49.20	6	Easton .....	48.64	70.71	51.40	31.06	50.45	2½
Toronto .....	41.31	64.49	46.34	25.15	44.32	13½	Erie .....	39.42	69.76	56.59	32.31	49.52	1½
<b>Maine:</b>							Gettysburg .....	50.46	71.36	50.41	30.42	50.66	16
Castine .....	40.78	62.97	48.37	28.17	43.82	40	Harrisburg .....	53.07	76.00	55.73	32.86	54.41	14½
Gardiner .....	41.95	66.99	46.83	20.58	44.09	16	Philadelphia .....	50.70	73.04	54.03	30.47	52.06	67
Portland .....	40.12	63.75	45.75	21.52	42.78	35½	Somerset .....	45.93	65.13	47.41	27.24	46.43	6½
<b>New Hampshire:</b>							<b>Delaware:</b>						
Concord .....	43.52	66.73	48.11	22.85	45.30	14½	Fort Delaware .....	63.55	75.91	58.50	36.35	56.08	5½
Hanover .....	40.76	65.01	44.52	19.09	42.34	18	<b>District of Columbia:</b>						
<b>Vermont:</b>							Washington .....	55.77	76.33	56.43	36.05	56.14	11½
Burlington .....	42.81	67.39	47.65	21.77	44.90	18	<b>Maryland:</b>						
Newbury .....	41.60	67.01	46.09	19.21	43.48	13½	Baltimore .....	52.87	74.23	56.17	35.07	54.58	22
<b>Massachusetts:</b>							Frederick .....	52.78	75.29	54.85	33.66	54.14	3½
Amherst .....	44.46	67.67	48.18	24.15	46.11	19	<b>Virginia:</b>						
Boston .....	45.88	69.21	51.16	28.41	48.66	34	Alexandria .....	53.02	76.70	56.88	34.56	55.29	2½
Nantucket .....	45.65	68.52	55.03	34.66	50.96	10½	Fort Monroe .....	56.87	76.57	61.79	41.75	59.24	30
New Bedford .....	44.82	67.15	51.93	29.66	48.39	42½	Norfolk .....	56.50	76.53	61.48	41.57	59.01	25
Springfield .....	47.02	71.43	51.50	27.01	49.24	7	Richmond .....	55.73	75.40	56.27	37.20	56.15	4
Williamstown .....	43.80	67.69	47.84	23.40	45.56	23							

SMITHSONIAN TABLE—(Continued.)

Places.	Spring.	Summer.	Autumn.	Winter.	For the Year.	No. of Years.	Places.	Spring.	Summer.	Autumn.	Winter.	For the Year.	No. of Years.
<i>North Carolina:</i>							<i>Illinois:</i>						
Chapel Hill . . . . .	59.35	76.23	60.15	43.05	59.70	10½	Augusta . . . . .	51.34	72.51	53.38	29.80	51.76	11½
Fort Johnson . . . . .	64.46	80.19	67.46	50.60	65.68	15½	Highland . . . . .	56.99	78.09	56.83	34.08	56.50	12
<i>South Carolina:</i>							Ottawa . . . . .	49.96	74.24	51.28	27.77	50.81	2
Camden . . . . .	63.20	79.09	62.65	46.83	62.94	5½	Warsaw . . . . .	51.16	74.18	67.22	27.50	52.51	4½
Charleston . . . . .	65.37	80.03	67.43	51.10	65.98	20	<i>Missouri:</i>						
Fort Moultrie . . . . .	65.72	80.67	68.13	51.18	66.60	26½	Jefferson . . . . .	56.14	76.19	55.52	33.85	55.43	25½
<i>Georgia:</i>							St. Louis . . . . .	56.34	76.40	55.84	33.98	55.64	21
Athens . . . . .	62.70	76.53	61.40	47.57	62.05	4½	<i>Wisconsin:</i>						
Augusta . . . . .	64.37	80.21	63.70	48.07	64.09	19½	Beloit . . . . .	45.48	71.23	49.89	24.52	47.78	5
Savannah . . . . .	68.20	80.61	67.11	52.67	67.15	14½	Fort Crawford . . . . .	48.66	72.28	48.53	21.25	47.68	18½
<i>Florida:</i>							Green Bay . . . . .	44.03	68.60	46.80	20.10	44.88	23
Fort Barrancas . . . . .	68.57	81.55	69.86	54.94	68.74	15½	Milwaukee . . . . .	44.87	67.51	49.59	25.97	46.98	10½
Fort Brooke . . . . .	72.14	80.20	73.43	62.35	72.03	23½	<i>Iowa:</i>						
Fort Marion . . . . .	68.54	80.21	71.53	58.08	69.59	14½	Dubuque . . . . .	47.36	71.42	50.34	25.88	48.75	3½
Key West . . . . .	75.77	82.52	78.19	69.67	76.54	10½	Fort Madison . . . . .	50.83	74.77	53.77	27.25	51.65	6½
Warrington . . . . .	69.79	82.96	70.44	56.70	69.97	5½	Muscatine . . . . .	48.36	69.63	49.33	24.73	48.01	16
<i>Alabama:</i>							<i>Minnesota:</i>						
Mobile . . . . .	66.87	79.00	66.27	52.43	66.14	10	Fort Snelling . . . . .	45.20	70.61	45.89	16.04	44.43	35
Huntsville . . . . .	59.93	75.62	59.80	42.15	59.38	13	Hazlewood . . . . .	42.33	69.82	42.60	13.06	41.99	2
Mount Vernon . . . . .	67.02	78.98	66.05	51.70	65.94	12½	<i>Nebraska:</i>						
<i>Mississippi:</i>							Council Bluffs . . . . .	50.84	77.15	51.46	22.06	50.38	6
Garlandville . . . . .	68.71	85.18	69.60	48.91	68.35	1	Fort Kearney . . . . .	46.81	71.47	49.35	23.04	47.67	6½
Jackson . . . . .	64.13	78.90	64.96	49.68	64.42	3½	Fort Laramie . . . . .	46.84	71.94	50.32	31.54	50.16	5½
Natchez . . . . .	67.92	80.98	70.08	51.70	67.67	14½	<i>Kansas:</i>						
Vicksburg . . . . .	65.42	78.62	69.46	49.05	65.64	3½	Fort Leavenworth . . . . .	53.76	74.05	53.66	29.77	52.81	25
<i>Louisiana:</i>							Fort Scott . . . . .	54.77	74.95	55.25	32.93	54.48	10½
Baton Rouge . . . . .	68.94	81.13	68.21	54.21	68.12	18½	<i>Indian Territory:</i>						
Fort Jessop . . . . .	66.89	81.27	66.22	51.18	66.39	22½	Fort Arbuckle . . . . .	61.67	80.04	62.17	40.78	61.16	4½
New Orleans . . . . .	69.94	82.26	70.71	56.53	69.86	18½	Fort Gibson . . . . .	61.28	79.16	61.66	41.13	60.81	27½
West Feliciana . . . . .	65.90	78.67	66.27	52.30	65.78	13	Fort Towson . . . . .	62.39	79.16	61.27	43.72	61.64	18½
<i>Texas:</i>							Fort Washita . . . . .	62.15	79.29	63.11	44.04	62.15	12
Corpus Christi . . . . .	71.46	82.53	73.11	56.72	70.95	2½	<i>New Mexico:</i>						
Fort Brown . . . . .	74.85	83.37	74.77	62.28	73.82	7½	Albuquerque . . . . .	55.90	74.91	57.33	37.15	56.32	4½
Fort Chadbourne . . . . .	64.35	76.77	62.55	45.90	62.39	4½	Fort Defiance . . . . .	45.34	66.95	46.03	28.74	46.77	4½
Huntsville . . . . .	67.96	83.15	69.57	55.64	69.08	2½	Santa Fé . . . . .	49.68	70.46	50.59	31.64	50.59	4½
San Antonio . . . . .	69.68	82.15	71.26	53.92	69.25	3½	<i>Utah:</i>						
<i>Arkansas:</i>							Salt Lake City . . . . .	51.78	75.92	—	32.06	58.24	1½
Fort Smith . . . . .	60.73	77.60	60.08	41.11	59.88	11½	<i>Washington Territory:</i>						
Little Rock . . . . .	63.57	86.98	69.11	42.23	65.47	1	Fort Steilacoom . . . . .	49.21	62.89	51.69	39.59	50.84	5½
<i>Tennessee:</i>							<i>Oregon:</i>						
Glenwood . . . . .	59.02	76.11	58.93	39.72	58.44	3½	Astoria . . . . .	51.16	61.36	53.55	42.43	52.13	1½
Memphis . . . . .	61.48	79.97	62.21	41.71	61.34	4½	Fort Dallas . . . . .	53.	70.36	52.21	35.59	52.79	3½
Nashville . . . . .	59.90	77.28	57.08	39.61	58.47	5	Fort Vancouver . . . . .	51.88	65.65	53.54	39.58	52.65	4½
<i>Kentucky:</i>							<i>California:</i>						
Springdale . . . . .	55.89	73.64	55.74	36.31	55.39	13	Benicia . . . . .	56.54	67.01	60.57	49.02	58.29	5½
Newport . . . . .	54.52	75.00	56.24	35.50	55.32	6½	Fort Ross . . . . .	52.17	57.73	53.43	43.03	52.34	4
<i>Ohio:</i>							Monterey . . . . .	53.99	58.64	57.29	51.22	55.29	4½
Cincinnati . . . . .	53.90	73.23	53.07	33.60	53.45	14	San Diego . . . . .	59.97	71.08	64.36	52.29	61.92	5½
Granville . . . . .	50.29	70.64	50.79	30.67	50.60	15½	San Francisco . . . . .	54.51	57.33	56.33	50.86	54.88	3½
Hillsboro . . . . .	50.61	70.23	51.76	31.63	51.06	19	<i>Mexico:</i>						
Marietta . . . . .	52.39	71.11	52.76	33.53	52.45	29	Matamoros . . . . .	75.94	84.97	76.98	64.29	75.54	9½
Portsmouth . . . . .	54.91	74.08	56.57	36.36	55.48	23	Mexico . . . . .	63.42	65.23	60.13	53.64	60.60	1
Steubenville . . . . .	50.85	71.27	50.62	30.31	50.76	14	Vera Cruz . . . . .	77.	81.92	78.26	70.88	77.02	13
<i>Michigan:</i>							<i>Bermuda:</i>						
Ann Arbor . . . . .	46.25	69.68	50.24	25.31	47.87	2½	Bermuda . . . . .	65.36	77.88	72.96	61.53	70.92	4
Detroit . . . . .	49.38	73.81	52.47	28.99	51.16	15½	<i>Cuba:</i>						
Fort Brady . . . . .	37.53	62.21	43.54	18.32	40.41	31	Havana . . . . .	76.22	81.35	78.12	72.98	77.17	7
Sault Ste. Marie . . . . .	39.42	62.33	42.97	20.32	41.38	1½	<i>Jamaica:</i>						
<i>Indiana:</i>							Kingston . . . . .	78.07	81.09	79.75	76.16	78.77	5
Jeffersonville . . . . .	57.66	80.33	61.00	43.33	60.58	1	<i>Bahamas:</i>						
Milton . . . . .	51.36	74.43	53.26	31.18	52.56	2	Nassau . . . . .	76.09	82.41	79.05	72.51	77.52	2½
New Harmony . . . . .	56.37	75.55	57.46	35.19	56.14	3½							

COURSE OF A METEOR THROUGH CANADA, IN JULY, 1860.

The following correspondence has also taken place with the Department:—

LA FAYETTE COLLEGE,  
Easton, Pa., October 8th, 1860.

DEAR SIR,—Will you allow a stranger to address you on a matter of scientific interest?

I am investigating the path of a meteor that attracted much attention in this region on the evening of July 20th, and must have been seen, I presume, by many of the meteorological observers and others in Canada West, as observations here indicate that it was vertical over a line extending from the southern part of Lake Huron, to the western part of Ontario; and my object in this note is to inquire whether the returns received at your office for that month afford any data that would be useful in the investigation. I am

particularly anxious to have its apparent altitude above the horizon, as seen from Berlin in the directions S. 59° E., and S. 82° W.; if the meteor passed south of the zenith, or in the contrary direction, if it passed north—from Port Sarnia in the directions N. 70½° W., and N. 77½° E.—from Brantford N. 61½° W., and N. 77° E.—from London N. 66° W., and from Goderich and Owen Sound in any direction, or vertical circles passing through the first four places in the direction named. I have measurements already from other places, so that they, with these, would fix positions to points in the path, and I would address notes of inquiry to the masters of Grammar Schools there, but I do not know that they are yet established except at Port Sarnia.

Any aid that your interest in science may incline you to afford, in pointing out how or when data can be procured from the meteorological stations or other places, or other places in Canada, for the solution of an interesting problem that can be solved only by the cooperation of many observers, will be most thankfully received and

duly acknowledged;—and hoping you will pardon my freedom in troubling you with this note, I am, Very respectfully,  
Your obedient servant,  
JAMES H. COFFIN,  
Prof. Math. and Astronomy.

J. GEORGE HODGINS, Esq.

EDUCATION OFFICE, Toronto, 16th Oct., 1860.

SIR,—I have the honor to state, in reply to your letter of the 8th inst., that, we have meteorological stations at Brantford and Port Sarnia, but, singular to say, the reports from them for the month

of July, make no mention of any meteor having been seen by the Observer.\*

Possibly, and, I think very likely, the Provincial Observatory at Toronto may be able to answer your inquiries, so far as that station is concerned.

I have the honor to be, Sir,  
Your obedient servant,  
J. GEORGE HODGINS,  
Deputy Superintendent.

PROFESSOR JAMES H. COFFIN,  
La Fayette College, Easton, Pa., U. S.

\* It appears that one was seen at Hamilton.—See Table for 1860. :

ABSTRACT OF METEOROLOGICAL OBSERVATIONS MADE AT SOME OF THE SENIOR COUNTY GRAMMAR SCHOOL STATIONS IN UPPER CANADA, DURING THE YEARS 1859 AND 1860.

(Compiled at the Educational Department, Toronto.)

NOTE.—As the prescribed monthly Meteorological Reports have not been regularly received from the different Stations (see Table A), we are not able to insert a complete abstract for the entire year; we have, however, selected four monthly reports of each year, the calculations of which are actually correct.

1859.	BAROMETER.			TEMPERATURE OF AIR.				WARMEST DAY.		COLDEST DAY.		Humidity.	RAIN. No. of Days.	SNOW. No. of Days.	REMARKS.
	Highest.	Lowest.	Greatest Daily Range.	Highest °Temp-ature.	Lowest °Temp-ature.	Greatest ° Daily Range.	Lowest ° Daily Range.	Date.	Mean °Temp-ature.	Date.	Mean °Temp-ature.				

1. BARRIE.—REV. W. F. CHECKLEY, B.A., Observer.

January.....	29.531	28.414	.458	46.8	-37.9	40.0	1.4	20	40.6	8	-1.0	66	..	9	
June.....	29.478	28.822	.471	91.1	28.0	42.6	14.1	28	76.4	4	36.6	44	10	..	
August.....	29.330	28.976	.120	91.6	44.0	37.9	5.4	1C	77.9	29	52.8	54	5	..	
October.....	29.449	28.698	.462	78.3	19.8	28.0	4.6	4	65.9	26	28.8	36	7	2	

2. BELLEVILLE.—A. BURDON, Esq., Observer.

January.....	30.292	28.924	.669	46.3	-30.0	36.7	5.0	20	40.1	10	19.1	86	2	7	
April.....	29.966	28.980	.531	68.6	20.7	27.3	7.5	30	58.7	5	29.6	69	7	..	Aurora on the 29th of April.
June.....	29.912	29.288	.452	83.5	33.8	33.9	8.8	27	76.4	4	40.5	76	6	..	
October.....	29.936	29.064	.596	76.5	17.4	26.4	7.0	4	62.8	26	27.0	78	5	..	

3. CHATHAM.—G. JAMIESON, Esq., Observer.

January.....	29.919	28.807	.519	47.5	-16.0	38.0	3.0	20	41.8	10	0.5	79	3	1	
February.....	29.655	28.927	.502	56.2	-1.5	38.6	6.9	19	40.7	7	12.6	80	4	4	
July.....	29.806	29.062	.301	95.0	40.2	37.5	12.6	18	80.2	5	61.8	72	4	..	
October.....	29.702	29.049	.404	76.5	21.6	37.9	4.3	13	59.5	27	29.4	75	4	4	

4. CORNWALL.—REV. H. W. DAVIES, M.A., Observer.

January.....	30.523	29.005	.529	49.0	-7.1	38.7	4.1	21	36.6	12	-6.9	71	N.R.	2	
March.....	30.398	28.491	.596	57.7	-3.8	28.4	3.8	29	45.2	1	7.7	78	6	2	
June.....	29.987	28.906	.731	78.2	34.2	33.3	7.1	2	70.0	4	42.9	80	6	..	
October.....	30.103	29.223	.453	77.2	17.7	42.6	6.3	13	63.7	20	20.8	76	3	3	

5. HAMILTON.—A. MACALLUM, Esq., Observer.

January.....	30.452	28.888	.667	47.4	-29.7	41.4	4.6	20	45.0	10	-14.4	78	4	2	
April.....	29.967	28.785	.549	59.5	24.6	27.6	7.6	12	53.7	5	31.9	75	3	4	Two Auroras seen in April.
June.....	29.946	29.246	.488	80.5	37.5	33.0	10.5	15	70.5	4	39.6	76	9	..	
October.....	29.980	29.329	.372	76.7	24.1	40.3	11.3	4	68.7	26	27.0	70	8	2	

6. PERTH.—R. T. LIVINGSTONE, Esq., Observer.

September....	29.320	28.694	.727	74.2	27.8	35.2	7.0	12	63.2	14	42.7	N.R.	15	1	
October.....	29.779	28.830	.730	73.8	14.6	38.2	10.1	5	62.5	26	23.4	75	7	..	First Snow on the 14th of Sept., at 7 a.m.
November....	29.946	28.744	1.062	63.8	13.4	27.8	8.1	5	51.8	29	18.8	84	N.R.	N.R.	
December....	30.189	28.924	.825	54.6	-30.2	39.1	6.1	1	41.0	28	19.6	82	N.R.	13	

7. SARNIA.—W. B. EVANS, Esq., M.A., Observer.

January.....	29.920	28.715	.605	46.4	-23.6	33.8	3.5	14	39.9	10	-1.0	91	2	4	On April 10th, a white luminous streak was visible in the heavens for about an hour. It was first seen at 8 p.m., extending from E. hor. to Z.; afterwards to W. hor., forming an arch.
April.....	29.739	28.536	.576	66.1	22.7	33.9	3.8	11	55.9	4	30.9	91	2	..	
October.....	29.648	28.969	.450	N.R.	25.5	N.R.	N.R.	5	65.6	26	23.1	92	2	..	
December....	29.932	28.831	.624	53.9	8.6	35.9	4.1	13	46.6	9	9.7	95	1	7	

ABSTRACT OF METEOROLOGICAL OBSERVATIONS—(Continued.)

1859.	BAROMETER.			TEMPERATURE OF AIR.				WARMEST DAY.		COLDEST DAY.		Humi- dity.	RAIN.	SNOW.	REMARKS.
	Highest.	Lowest.	Greatest Daily Range.	Highest °Temper- ature.	Lowest °Temper- ature.	Greatest °Daily Range.	Lowest °Daily Range.	Date.	Mean °Temper- ature.	Date.	Mean °Temper- ature.				
<b>8. WHITBY.—WILLIAM McCABE, Esq., Observer.</b>															
January .....	30.327	29.428	.432	48.8	-22.6	43.2	1.8	21	35.6	11	6.4	72	1	4	
March .....	30.225	28.413	.364	59.6	16.9	31.8	8.8	28	50.1	1	16.7	78	10	1	
July .....	30.132	29.291	.408	94.6	53.9	40.8	15.8	12	82.1	26	56.6	76	4	..	
October .....	30.047	29.132	.703	70.6	21.3	..	..	6	60.1	26	27.7	76	4	..	
<b>1860.</b>															
<b>1. BARRIE.—REV. W. F. CHECKLEY, B.A., Observer.</b>															
February .....	29.486	28.826	.709	51.6	-30.1	44.6	7.1	22	44.4	10	1.7	62	5	6	
March .....	29.436	28.571	.368	60.6	-0.3	41.1	13.8	3	42.3	12	13.6	74	2	..	
May .....	29.357	28.517	.301	89.1	19.9	46.6	10.4	30	65.9	2	42.6	77	7	..	
<b>2. BELLEVILLE.—A. BURDON, Esq., Observer.</b>															
January .....	30.123	29.222	.662	43.7	-14.4	40.1	8.5	24	38.9	2	-3.8	85	3	8	
February .....	30.101	29.068	.734	48.1	-12.5	38.0	8.6	22	43.9	17	-2.6	86	4	6	
April .....	30.210	29.025	.957	67.0	14.4	35.8	8.1	30	58.1	2	22.1	69	6	1	
June .....	29.825	28.998	.369	79.7	49.9	27.2	4.6	28	70.6	9	55.6	76	11	..	
<b>3. BRANTFORD.—D. C. SULLIVAN, Esq., AND OTHERS, Observers.</b>															
June .....	29.471	28.600	.322	87.5	39.1	38.8	12.1	28	74.7	9	53.6	71	6	..	
July .....	29.545	28.847	.256	95.0	43.3	38.6	13.1	19	75.8	23	60.1	70	11	..	
August .....	29.599	28.978	.270	91.0	44.3	41.3	8.6	6	77.6	27	54.8	75	8	..	
October .....	29.582	28.700	.562	68.0	31.1	27.4	7.6	31	60.1	12	38.7	84	9	..	
<b>4. CORNWALL.—REV. H. W. DAVIES, M.A., Observer.</b>															
January .....	30.275	29.072	.585	49.5	-9.9	39.0	4.4	21	38.3	13	-5.5	86	2	5	April 20. First boat passed thro' the canal.—Oct. 17. At 5.45 a.m., an earthquake was felt: it lasted about 4 minutes. A lighter shock was felt on the 24th, at 7 a.m.
April .....	29.912	29.191	.512	53.5	11.5	24.1	10.3	12	45.0	2	17.4	84	3	1	
June .....	29.958	29.071	.427	83.2	54.9	30.1	8.6	14	71.8	19	45.1	81	10	..	
October .....	30.113	29.028	.579	64.0	29.2	22.8	6.5	31	59.8	15	37.2	68	18	1	
<b>5. HAMILTON.—A. MACALLUM, Esq., Observer.</b>															
January .....	30.004	29.150	.476	46.8	-0.3	39.2	5.9	24	44.1	31	7.3	67	5	9	July 1. A comet was seen in the N.W. at 9 p.m. About 20 min. past nine, a meteor of great brilliancy passed from S.W. to E.
April .....	30.199	28.944	.966	78.7	23.7	N. E.	N. E.	30	60.2	14	30.7	66	12	3	
July .....	29.861	29.018	.582	89.7	42.8	33.2	11.2	16	79.3	10	61.9	70	11	..	
October .....	29.894	28.961	.680	69.6	28.6	35.2	3.2	5	62.9	12	40.2	85	13	..	
<b>6. PERTH.—R. T. LIVINGSTONE, Esq., Observer.</b>															
January .....	29.981	28.955	.825	45.4	-30.8	44.4	11.0	24	38.5	2	-17.6	80	5	17	
February .....	29.949	28.801	.792	48.7	-25.7	40.9	10.1	22	43.2	1	-12.5	80	5	10	
March .....	29.762	28.679	.830	64.8	8.3	35.9	5.0	19	49.5	22	15.4	76	4	7	
April .....	29.959	28.835	1.008	68.8	9.7	41.6	11.5	30	59.8	2	16.6	63	6	3	
<b>7. PICTON.—STUART FOSTER, Esq., Observer.</b>															
April .....	30.241	29.031	.952	74.4	16.0	36.1	9.0	30	57.1	2	22.0	65	13	4	April 12. At 8 p.m., a narrow belt of light, extending from N.W. to S.E., and a small auroral arch, were observed.—Oct. 23. Eclipse of the sun, visible from 7 a.m. till 3.36. At 6.46 p.m., an earthquake was felt, accompanied by noise resembling thunder.
July .....	29.819	29.170	.395	85.4	50.4	29.7	10.2	19	73.1	5	58.2	78	13	..	
November .....	29.997	28.928	.791	68.7	17.4	23.5	6.7	1	64.3	24	23.2	84	19	9	
October .....	29.979	29.076	.582	69.4	27.1	26.5	5.9	31	64.0	6	38.5	85	17	..	
<b>8. SARNIA.—W. B. EVANS, Esq., M.A., Observer.</b>															
January .....	29.927	28.885	.554	48.8	-12.0	N. E.	N. E.	24	44.5	1	4.9	98	2	2	
February .....	29.758	28.741	.721	61.6	-9.2	41.8	6.7	22	50.3	1	4.2	95	1	5	
June .....	29.606	28.651	.955	87.2	39.8	36.7	7.4	28	74.0	5	51.1	90	3	..	
October .....	29.651	28.820	.458	76.7	31.8	32.8	6.1	18	64.8	27	45.1	92	5	..	
<b>9. STRATFORD.—C. J. MCGREGOR, Esq., M.A., Observer.</b>															
September .....	29.169	28.413	.403	76.3	25.5	35.2	9.9	5	67.9	29	36.2	81	11	..	Auroras seen on the 6th, 10th, and 17th of Sept.—An Érolite was seen on 14th of October: time of flight, 2 sec.—Auroras seen on the 10th and 15th of November.
October .....	29.049	28.192	.559	63.8	26.2	25.3	3.6	31	56.9	12	35.6	85	15	..	
November .....	28.967	27.970	.525	65.4	5.8	26.5	3.7	2	56.9	24	12.0	84	7	13	
December .....	29.249	27.975	.640	36.3	-14.4	29.8	3.5	20	34.5	14	-2.4	89	2	14	
<b>10. WHITBY.—W. McCABE, Esq., Observer.</b>															
January .....	30.185	29.278	.549	48.7	-3.6	36.6	4.8	24	40.9	31	4.4	77	2	3	
April .....	30.274	29.042	.761	72.7	20.7	30.7	4.7	30	54.7	2	26.8	68	5	..	
July .....	29.922	29.178	.435	86.3	53.0	29.3	5.8	19	77.4	27	60.3	80	8	..	
October .....	30.015	29.140	.258	68.7	32.5	30.3	5.8	30	58.3	18	37.1	87	2	..	

TABLE A.—METEOROLOGICAL STATIONS AT THE SENIOR COUNTY GRAMMAR SCHOOLS.

Under the authority of the Consolidated Grammar School Act, a special grant of \$400 per annum is made to each Senior County Grammar School with participation in the distribution of the general Grant near School Fund; provision is also made for the establishment of a Meteorological Station at each of these Senior Schools, and it is declared to be the duty of the Master to make the prescribed meteorological returns every month to the Educational Department. Out of the 31 Counties in which Senior County Grammar Schools have been established, only 16 have contributed the necessary sum of half-price to purchase the necessary instruments, and but few of these (as will be seen from the following table), make the returns required by law. Steps, it is hoped, will shortly be taken to enforce the law, or to restrict the grant to those stations only from which returns are received.

Name of Meteorological Station.	No. of months the Station has been established, to Dec. 1860, inclusive.	No. of monthly abstracts received at the Education Office, to Dec., 1860, inclusive.	Character of Abstracts received.			Name of Meteorological Station.	No. of months the Station has been established, to Dec. 1860, inclusive.	No. of monthly abstracts received at the Education Office, to Dec., 1860, inclusive.	Character of Abstracts received.		
			Well prepared.	Indifferently prepared.	Badly prepared.				Well prepared.	Indifferently prepared.	Badly prepared.
1. Niagara ..	36	2	..	2	..	9. Guelph ..	28	1	1	..	..
2. Hamilton ..	36	25	22	3	..	10. Whitby ..	28	24	23	1	..
3. Belleville ..	36	26	24	2	..	11. Perth ...	27	9	9	..	..
4. Barrie ....	36	19	19	..	..	12. Picton ...	27	11	11	..	..
5. Chatham ..	36	15	..	11	4	13. Brantford ..	18	12	10	2	..
6. Port Sarnia	36	26	26	..	..	14. L'Original	Instruments	purchased, but	not yet	sent for.	..
7. Milton ....	35	3	..	..	3	15. Stratford ..	5	5	5	..	..
8. Cornwall ..	35	20	20	..	..	16. Ottawa ...	Instruments	not yet sent.			

TABLE B.—SHOWING THE NUMBER OF MONTHS THAT METEOROLOGICAL ABSTRACTS HAVE BEEN RECEIVED FROM THE DIFFERENT STATIONS, FOR THE YEAR 1860.

Name of Meteorological Station.	Character of Abstracts received.		
	Well prepared.	Indifferently prepared.	Badly prepared.
*Niagara .....	..	..	..
Hamilton .....	12	..	..
*Belleville .....	6	..	..
*Barrie .....	3	..	..
*Chatham .....	..	..	..
*Port Sarnia .....	8	..	..
*Milton .....	..	..	..
*Cornwall .....	10	..	..
*Guelph .....	..	..	..
Whitby .....	12	..	..
*Perth .....	4	..	..
*Picton .....	11	..	..
Brantford .....	10	2	..
*L'Original .....	..	..	..
Stratford .....	5	..	..
Ottawa .....	..	..	..

\* The returns required by law have only been in part, or not at all, received from these Stations during the year 1860.

METEOROLOGICAL REPORT.

At a late meeting of the Canadian Institute, Professor Kingston read a Meteorological Report of Toronto for 1860, from which we take the following extracts:

The mean temperature of the year was 44°32, a number exceeding by 0°20, the average of 21 years. This slight excess was due to the mildness generally of the Spring and Autumn, since the mean both of the Summer and Winter were mostly below the average. The average of the differences, without regard to the sign of the monthly means, from their respective normals was 1°98 for the year 1860, and 2°42 for the period 1853-60. As far as this can be taken as a test, 1860 in respect to temperature may be regarded as approximately a normal year.

The warmest day was July 19, with a mean temperature of 75°, and the coldest, December 14, when the mean was 1°08. The highest temperature of the year, which was 88° and 2°4 below the average, occurred on July 19; and the lowest, which was 8°5 below zero, and 3°2 above the average, occurred on February 1.

The mean humidity of the year was 77°, which is rather in excess of that of the preceding year. The distribution among the several months was more than usually equal.

The most windy month in the year was March, with a mean velocity of 12.41 miles; and the calmest month September, when the mean velocity was 5.79 miles. The most windy day was March 21, when the velocity averaged 28.83 miles through the day; the calmest day was February 4, when the mean velocity was only 0.85 miles. The most windy hour was from 8 p.m. to 9 p.m. on February 9, when the velocity attained to 40.6 miles.

The depth of rain was 23.434 inches, or nearly 10 inches less than in 1859, a deficiency occurring in every month but February, July, and August. The amount of snow, 45.6 inches, was also below the average to the extent of 15.3 inches, and the rain and melted snow

combined fell short of the average by 8.589 inches. While the quantity of rain and snow was deficient, the number of days on which rain fell was about 8 per cent. and the number of days of snow about 2 per cent. and the number of days of rain or snow about 5 per cent. greater than the average of the six years 1855-60.

Of the 31 thunder storms recorded, the earliest took place on February 22, and the latest on October 15. The storm of August 24 was one of peculiar violence.

Of the 58 Auroras the most brilliant occurred on March 26, 27, September 6 and 15.

PRESENT AND FUTURE OMINOUS SEASONS.

(To the Editor of the London Free Press, Upper Canada.)

SIR,—Oblige me by inserting a few remarks upon the Cycle of the Seasons, as it is only at intervals of a series of years that public attention is drawn to the periodical recurrence of certain visitations of severity or of mildness in the System of the Weather. Here I may be permitted to observe to those who have paid little or no attention to the atmospheric phenomena that regulate seasons of scarcity or abundance in the Cereal creation, that it may be something fresh to learn that a system elucidating and forestalling such visitations has been in print ever since the year 1810, founded on observations commencing in 1801, and unremittingly continued till the year 1854, onwards for any future period, and for any length of time, giving the character of each forthcoming season, defined and determined. The key to this system is exhibited in a diagram, entitled, "The Primary Cycle of the Winds," showing the excess and deficiency, as well as the averages of Easterly and Westerly Winds, and proving that all other atmospheric phenomena are chiefly governed, regulated or tempered, by these great elements of the weather.

The author of this system and original founder of this school of physical science has passed away from us, yet he has left sufficient testimony to the value of his researches, and ample materials for future meteorologists to work upon. His primary Cycle of fifty-four years is divided, sub-divided, and characterized by Annual, Biennial, Triennial, and Quadrennial periods of certain phenomena in the weather, whether of Winds, Calms, or deficiency or excess of Rain. During that period there have been several repetitions of the same descriptions of seasons, productive of scarcity and abundance; and the average price of wheat having been traced back from the only existing records for more than two hundred years, and found to be high and low in price perfectly in accordance and correspondence with the cyclical records, divisions and observations of the author, it is not only a natural inference, but almost a conclusive evidence, that the same effects in all future time must originate and flow from the same Great Cause which has balanced the clouds since the creation of the world and the flood; who measures the winds in the hollow of His hand with the most perfect harmony, order, and unerring regularity; and therefore as susceptible of computation and reduction as the rising and setting of the sun, the age and phases of the moon, the flux and reflux of the tides, and the periodicity of eclipses, comets, &c.

This is merely a general glimpse of a most interesting subject—powerful, because knowledge is power—and quite apart from all prophetic almanacks, and productions of ephemeral character, feeding popular prejudices. These observations are called forth by the popular character of the present and three approaching years, termed a Quadrennial, which in several respects will be found to correspond with analogous Quadrennials of excess or deficiency in the Easterly



and Westerly Winds. The last were 1852, 1853, 1854, and 1855. It can be proved beyond all doubt or cavil that certain periods have been characterized by extremes in the phenomena of the weather—such as violent Winds, fierce Heats, and continuous Rains. This present Quadrennial of excess West Wind commenced on the first of November last, and may continue with greater or less intensity (probably unpropitious), for two or three seasons to come; and thus the whole system, as in years and ages past, is ordained to go on for ever and ever as long as the world lasts.

The subject of the weather is of daily conversation, especially in such a portentous season as this, and it is to be hoped that something may grow out of it to elucidate those fixed rules—proving that we are progressing in our knowledge of the seasons, as in all other sciences. No knowledge has made so little progress as that of the weather, in an educational point of view, touching favourable and unfavourable seasons, although of the utmost importance to a nation in feeding its people, as millions of money will be expended more this year than last in flour, by the labouring population only.

Hoping these few remarks may be the means of attracting attention to this important subject.

I beg to remain,

Your obedient servant,

JAMES WOODS.

STOWMARKET, SUFFOLK, ENGLAND,  
June 28th, 1860.

#### METEOROLOGICAL OBSERVATIONS THROUGHOUT THE WORLD.

At a recent meeting of the American Geographical and Statistical Society, Mr. Disturnell, on presenting the Medical Statistics and Meteorological Observations of the United States army brought down to December, and prepared by the assistant surgeon general, remarked that Mr. Quetelet, the perpetual secretary of the French academy, had said that the enterprise proposed by the United States, under the direction of Lieut. Maury, of the Meteorological congress, would be accomplished on a large scale. Very distinguished men were disposed to attend. He was about to visit England on account of it. The general congress of Vienna had charged him with the duty of making up a general programme of meteorological observations all over the globe. Unity of views were necessary in these observations. Thirty nations had assented to it, and several were at present at work. The friends of science had thus accomplished a confederation of nations, which politicians had attempted in vain.

#### SIR JOHN HERSCHEL AND THE WEATHER.

The following letter from a well known English astronomer, is interesting, as showing the present state of our knowledge with regard to the laws of atmospheric changes, as understood by one conversant with the subject. A great deal of confusion prevails among people, as to the results arrived at by men who have been investigating the subject. Almost every person has some "sign" by which he foretells the weather for a few days in advance. It appears that those who have given their time and talents to the discovery of rules for predicting the weather are unable to tell, as yet, anything whatever of what the weather will be even for a few hours into the future.

In reply to a correspondent, Sir John Herschel wrote the following letter, dated August 31st, 1860:—

SIR,—I thank you for contradicting any statements to the effect that I have 'predicted the weather,' or that I have said we should have heavy floods, &c., during the present month. At the same time I do plead guilty to having formed an opinion, from some remarkable phenomena exhibited by the sun last year, and others which it has since continued, and still continues, in a somewhat diminished degree, to exhibit, that this summer would prove, as it has done, a rainy one; and I have, perhaps, expressed that opinion in private conversation among friends, though assuredly never in such a way as I could suppose would come to be publicly cited. I have received many letters about my 'predictions,' some informing me that I stand charged with predicting the most dreadful storm ever known in the memory of man, and asking me when and where it would take place. One gentleman having heard that I had stated that several feet thick of ice are interposed between the earth and the sun, thereby causing this cold summer—very consecutively and very rationally calls on me to publish a letter in the *Times*, informing the world how it got there.

You, sir, seem to have clearer and better notions about such things; and I dare say can easily understand how it is possible for an observant person, connecting many scattered indications and some very remarkable and unusual phenomena, with speculations on their possible or probable consequences, to have been led to form a general opinion as to the character of the season in advance, without aspiring to the rather unenviable reputation of a weather prophet. Scientifically speaking, and connecting these phenomena

(which are *publici juris*) with the laws of solar periodicity, established by Schwabe and Wolf, I am disposed to regard the meteorology of the last twelve months as more pregnant with instruction than that of any equal lapse of time on record; and I may take some opportunity to state my views on that matter in a more definite and public form. But I certainly shall consider myself obliged by your repudiating for me the announcement of any given sort of weather for any given time and place, as a thing which I consider is at present quite beyond the power of any meteorologist, except in a very few cases, such as that of an imminent cyclone in the hurricane regions, from barometric indications, and one or two other strong indications of immediately impending changes, which general experience has suggested to 'the weather-wise.'

I am, Sir, your obedient servant,

J. F. W. HERSCHEL.

#### HOW TO USE THE BAROMETER.

The following is an extract from Admiral Fitzroy's instructions on the use of the barometer.

The barometer should be set regularly by a duly authorized person about sunrise, noon, and sunset.

The words on old scales of barometers should not be so much regarded for weather indications as the *rising* or *falling* of the mercury; for if it stand at *changeable*, and then rise towards *fair*, it presages a change of wind or weather, though not so great as if the mercury had risen higher; and, on the contrary, if the mercury stand above *fair* and then fall, it presages a change, though not to so great a degree as if it had stood lower; besides which, the direction and force of wind are not therein noticed.

It is not from the point at which the mercury may stand that we are alone to form a judgment of the state of the weather, but from its *rising* and *falling*; and from the movements of immediately preceding days as well as hours—keeping in mind effects of change of *direction*, and dryness or moisture, as well as alteration of force or strength of wind.

It should always be remembered that the state of the air *foretells* coming weather, rather than shows the weather that is *present*—(an invaluable fact too often overlooked)—that the longer the time between the signs and the change foretold by them, the longer such altered weather will last; and, on the contrary, the less the time between the warning and the change, the shorter will be the continuance of such foretold weather.

If the barometer has been about its ordinary height, say nearly thirty inches at the sea-level, and is steady or rising, while the thermometer falls, and dampness becomes less—north-westerly, northerly, or north-easterly wind, or less wind, less rain or snow, may be expected.

On the contrary, if a fall takes place with a rising thermometer and increased dampness, wind and rain may be expected from the south-eastward, southward, or south-westward.

A fall with low thermometer foretells snow.

When the barometer is rather below its ordinary height, say down to near twenty-nine inches and a half (at sea level), a rise fortells less wind, or a change in its direction towards the northward, or less wet; but when it has been very low, about twenty-nine inches, the first rising usually precedes or indicates strong wind—at times heavy squalls—from the north-westward, northward, or north-eastward; after which violence a gradually-rising glass foretells improving weather, if the thermometer falls; but if the warmth continue, probably the wind will back (shift against the sun's course), and more southerly or south-westerly wind will follow, especially if the barometer's rise is sudden.

The most dangerous shifts of wind, or the *heaviest* northerly gales, happen *soon* after the barometer *first* rises from a very low point; or if the wind veers *gradually*, at some time afterwards.

Indications of approaching changes of weather, and the direction and force of winds, are shown less by the height of the barometer than by its falling or rising. Nevertheless, a height of more than thirty (30.0) inches (at the level of the sea) is indicative of fine weather and moderate winds, except from east or north, *occasionally*.

A rapid rise of the barometer indicates unsettled weather; a slow movement, the contrary; as, likewise, a *steady* barometer, which, when continued, and with dryness, foretells very fine weather.

A rapid and considerable fall is a sign of stormy weather, and rain or snow. Alternate rising and sinking indicates unsettled and threatening weather.

The greatest depressions of the barometer are with gales from S. E. S., or S. W.; the greatest elevations, with wind from N. W., N., or N. E., or with calm.

A sudden fall of the barometer, with a westerly wind, is sometimes followed by a violent storm from N. W., or N., or N. E.

If wind sets in from the E., or S. E., and the gale veers by the south, the barometer will continue falling until the wind is near a



marked change, when a lull *may* occur; after which the gale will be renewed, perhaps suddenly and violently, and the veering of the wind towards the N.W., N., or N.E., will be indicated by a rising of the barometer, with a fall of the thermometer.

#### FORESIGHT OF THE WEATHER.

Admiral Fitz Roy's Barometer Manual and Barometer and Weather Guide have been printed by the board of Trade—and are sold—one at a shilling, and the other at sixpence.\* They embody all the rules which have been deduced both from theory and experience. The telegraph far outstrips the swiftest tempest in celerity. Admiral Fitz Roy, to whose unmitigated and enduring industry our fishermen and sailors owe so much, hopes soon to surround our coast with cautionary signals wherever there is a coastguard station. An approaching storm, so soon as its direction is ascertained, is to be telegraphed from any station where it is discovered, to all other stations between which there is telegraphic communication. From these stations cautionary signals are to be transferred by drums and cones at the coast guard stations, to every part of the coast which may be threatened. If our fishermen and coasters will only avail themselves of the means so furnished for them, if they will only learn the use of the barometer and thermometer, it is not too much to say that thousands of lives will be annually saved on our coast alone.—*London paper.*

#### USE OF A BAROMETER IN FARMING.

John Underwood, Esq., of Aurelius, says the *Auburn Advertiser*, secured his entire crop of hay this summer by consulting the barometer. The morning he commenced cutting his hay looked cloudy and felt like rain, still the barometer pointed unerringly to dry weather, and on the strength of that sent in his Kirby. The hay was cut, cured and secured before any rain made its appearance. But for the barometer, the hay would have been standing at this time. Who doubts that the instrument paid for itself by that one item of information? The time is coming when the farmer will as soon think of returning to the scythe as to be without the infallible weather prophet, the barometer.

#### REPORT ON AGRICULTURAL METEOROLOGY.

The Smithsonian Institute at Washington is preparing, by order of Congress, a most interesting report on agricultural meteorology, which will be a welcome boon to our farmers. Besides meteorological statistics, collected during the last ten years at nearly 400 stations, it will contain the arrival and departure of birds, fishes, and other migratory animals, and also the time of planting and harvesting of crops, &c., at the different parts of the United States.

#### THE LAW OF STORMS.

The Light House Board, in co-operation with the Naval Observatory in this city, and the Board of Trade, (and Admiralty,) London, is about to institute a system of meteorological observations, with a view to the further development of the law of storms. By reason of the great extent of coasts of the United States bounding a portion of the two great oceans, and running through many degrees of latitude, from the frozen region of the Northern lakes to the evergreen peninsula of Florida, this Board possesses peculiar facilities for an intelligent co-operation in this great work. On every headland of this immense coast is perched a light-house, and at no other expense than the cost of the necessary blank forms, each light-house keeper may be converted into a practical meteorologist. The keeper on the Penobscot, equally with the keeper of Puget's Sound, will, at given hours of the day, register the condition of the aerial currents, and such other weather phenomena as may come under his observation. The observations are to extend through an entire year, at the end of which time, no doubt, a vast mass of interesting facts, the only true foundation of science, will have been collected for the philosopher.

#### CLIMATE ON THE ATLANTIC AND PACIFIC COASTS OF AMERICA.—

The western coast of North America is so much warmer in the winter than the eastern coast, that a winter climate no colder than that of New York city extends as far north as 65°, corresponding in latitude with the middle of Hudson's Bay and the almost uninhabitable regions of Labrador. The valley of the Saskatchewan, in latitude 52°, one thousand miles north-west of Lake Superior, is very fertile, and wild cattle live through the winter upon the abundant grasses which it produces.

\* On the last page we give a list of Meteorological apparatus and works kept at the Educational Depository, Toronto.

# JOURNAL OF EDUCATION,

Upper



Canada.

TORONTO: MARCH, 1861.

\* Parties in correspondence with the Educational Department will please quote the number and date of any previous letters to which they may have occasion to refer, as it is extremely difficult for the Department to keep trace of isolated cases where so many letters are received (nearly 1,000 per month) on various subjects.

## OFFICIAL REPLIES OF THE CHIEF SUPERINTENDENT OF EDUCATION, TO LOCAL SCHOOL AUTHORITIES IN UPPER CANADA.

(Continued from the last No. of the Journal.)

*Common School Teachers cannot teach the Latin and Greek Classics in School Hours.*—Trustees of a common school have no authority to allow their teacher to employ any part of his time, during school hours, in teaching Latin or Greek, or any other subjects not mentioned in the programme of studies for common schools, published in the *Journal of Education* and in the *School Manual*. The grammar, and not the common, schools are established by law to teach the elementary classics, and the people have a right to all the common school teacher's time during school hours to teach the subjects of common school education. If the school is not conducted according to law it forfeits all right to share in the common school fund, and the trustees become personally responsible for the money thus forfeited and lost to the section through their neglect in not conducting the school according to law.

*Teachers are not required to make Fires.*—The teacher is employed to teach the school, but he is not employed to make the fires and clean the school house, much less to repair the school house.

2. It is the duty of the trustees to provide for warming and cleaning the school house, and the duty of the teacher to see that the provision thus made by trustees for these purposes is duly carried into effect by the parties appointed. If the teacher undertakes to see these things done, for a certain remuneration or for what he may have to pay to get them done, very well; but it is the clear duty of the trustees to make provision for having them done.

3. The law also expressly prescribes the duty of trustees to repair the school house and keep it in repair. If any difference arise between trustees and teacher as to payment for either repairing the school house or warming it, the matter must be settled by an arbitration; and the ninth section of the School Law Amendment Act (published in the *Journal of Education* for June) makes trustees personally liable for the amount of any award of arbitrators, if they do not give effect to it within one month after being notified of it.

*Teachers cannot make up Lost Time in the Holidays or Vacations.*—Trustees can pay a teacher what they please and for teaching any time; but they have no authority to alter the period of the vacations; nor can they and the teacher make up by teaching during vacations or holidays any interruptions of the school exercises during the legal teaching days. No school can be allowed anything by way of apportionment for being kept open during legal holidays or vacations. The Legal Regu-

lations determine the days and periods of keeping the school open and closed; if any of the teaching days be lost, from any cause whatever, there must be a corresponding deduction from the apportionment; however, the teacher may be compensated by the trustees and parents for making up lost time by teaching during vacations and holidays, but not out of the school fund.

*Trustees can have no pecuniary claim upon the School Corporation.*—The sixth section of the School Act passed last May, and published in the *Journal of Education* for June, is as follows:—"It shall not be lawful for any common school trustee to enter into a contract with the corporation of which he is a member, or have any pecuniary claim on such corporation, except for a school site or as collector of school rates, and then only when he shall be appointed and the warrant be signed by the other two members of the corporation with the seal of the same.

2. No trustee, therefore, can lawfully receive or be allowed any remuneration as secretary-treasurer; no trustee is obliged to accept the office of secretary-treasurer; and if the trustees think proper to remunerate that officer, they must appoint one who is not a member of their corporation.

#### EXAMINATION FOR GRAMMAR SCHOOL MASTERSHIPS.

In future the meetings for the examination of candidates for Grammar School masterships, in the Normal School buildings, will only be held half-yearly, (instead of quarterly as heretofore) viz. : on the *first Monday in January* and on the *last Monday in June*. As intimated in this *Journal* for January, we may again state that the first book of Ovid's *Fasti* has been added to the list of subjects of examination.

#### ILLEGAL SIGNING OF TRUSTEES' NAMES.

Applications for maps, apparatus and prize books, are frequently received at the Educational Department on which the Trustees' names are written by the teacher or other person; whether with or without their consent does not often appear. As these applications are in the nature of a contract entered into by the trustee corporation with the Educational Department, and to which the corporate seal must be attached, it is obvious that no person whatever, except the individual trustees themselves, can lawfully sign these applications, unless authorized to do so by a written power of attorney. To prevent disappointment, (as these documents are invariably returned for *bona fide* signatures) it is proper to call the attention of trustees to a growing practice which is not only illegal in itself, but which might lead to many abuses, if not to actual forgery.

#### THE TRUSTEES' SCHOOL MANUAL FOR 1861.

The Trustees' School Manual, for 1861, has been sent out during the present month to the County Clerks for gratuitous distribution, to school corporations alone, through the Local Superintendents. Trustees will therefore not apply to the Department for copies, but to their own Local Superintendents. To other parties copies can be supplied from the Depository of the Educational Department, at 25 cents each, or 30 cents including postage, which must now be paid in advance. The School Manuals for Grammar and Common Schools, were sent out last July addressed to the Chairman, Secretary and Local Superintendent of schools in the Cities, Towns and Incorporated Villages. Extra copies, as above, 30 cents.

### III. Papers on Practical Education.

#### 1. THE TEACHER'S OFFICE.

"Take heed that ye despise not one of these little ones,"—MATT. xviii. 10.

Desirest thou a Teacher's work? Ask wisdom from above: It is a work of toil and care, of patience and of love. Ask for an understanding heart, to rule in godly fear The feeble flock of which the Lord hath made thee overseer.

Alas! thou surely may'st expect some evils to endure—E'en children's faults are hard to bear, and harder still to cure; They may be wilful, proud, perverse, in temper unsubdued, In mind obtuse and ignorant, in manners coarse and rude; Thou mayst contend with sluggish minds, till weary and depress'd, And trace the windings of deceit in many a youthful breast; Yet scorn them not: remember Him who loved his lambs to feed, Who never quench'd the smoking flax, nor broke the bruised reed; Who for the thankless and the vile pour'd out His precious blood; Who makes His sun to rise upon the evil and the good. The love of God extends to all the works His hand has fram'd; He would not that the meanest child should perish unreclaim'd. Pray that His Holy Spirit may thy selfish heart incline To bear with all their waywardness as He has borne with thine.

If by example, or by word, thou leadest them to sin, Thou perillest the precious souls that Jesus died to win; If thou from indolent neglect shouldst leave their minds unsown, Or shouldst their evil passions rouse, by yielding to thine own; Shouldst thou intimidate the weak, and thus destroy their peace, Or drive the stubborn to rebel by harshness or caprice; Shouldst thou their kindlier feelings chill by apathy or scorn, 'Twere good for them, and for thyself, that thou had'st ne'er been born.

But oh! what blessings may be thine, when thou hast daily striven To guide them in the narrow path that leadeth up to heaven;— What joy to see their youthful feet in wisdom's way remain; To know that, by the grace of God, thy labour is not vain; To watch the dawn of perfect day in many a hopeful child; To see the crooked mind grow straight, the rugged temper mild;— To mark the sinful habit check'd, the stubborn will subdued; The cold and selfish spirit warm'd by love and gratitude; To read in every sparkling eye a depth of love unknown; To hear the voice of joy and health in every silver tone!

If such the joys that now repay the Teacher's work of love, If such thy recompense on earth, what must it be above! Oh! blessed are the faithful dead who die unto the Lord; Sweet is the rest they find in heaven, and great is their reward; Their works performed in humble faith are all recorded there; They see the travail of their souls, the answer to their prayer: There may the Teacher and the Taught one glorious anthem raise; And they who sow, and they who reap, unite in endless praise!

—English Pupil-Teacher.

#### 2. BLESSED CHILDREN.

Christ, in blessing the little ones of Judea, blessed all children; and meant that we should reverence them as the hope of the world.—How when life grows dark before us—when its woes oppress, and its crimes appal, we turn instinctively to little children; with their brave, sunny faces of faith and good cheer—their eyes of unconscious prophecy, and drink from the full fountain of their fresh young natures, courage and comfort, and deep draughts of divine love and constancy. How a child's pure kiss drops the very honey of heaven into the heart soured by worldly misfortune!—How a child's sweet smile falls like oil on the waters of thoughts vexed by worldly care, and smooths them into peace!—Grace Greenwood.

#### 3. THE CONDUCT OF OUR SAVIOUR TOWARDS ST. PETER: A MODEL FOR TEACHERS.

From the German.

My dear friends, I am about to ask you to contemplate with me, for a short time to-day, the highest object which can engage the thoughts of man,—an object which to man is of more real worth than kingdoms and empires, than all that this earth can afford: it is the contemplation of the portrait—of the character—of our Lord Jesus Christ, to which I refer. The meditating on such high excellence will doubtless make you feel the immeasurable distance which you are removed from it, and thus, I trust, increase your humility. But it will also, at the same time, lead you to feel more deeply the dignity of your vocation, as teachers, and to strive, as

far as in you lies, to become more and more like your great Exemplar. Every Christian should endeavour to become like Jesus, and, of all Christians, the teacher ought to strive most; and especially the teacher who has not merely to impart secular instruction, but to teach Christianity itself. The Spirit of God that descended upon Jesus at his baptism will also descend upon you, and dwell with you, if you sincerely ask him. The Spirit of Duty which accompanied him in all his journeyings will not forsake you. His Spirit of Unselfishness, which sought neither lucre nor honour, but the good of man and the glory of God, will be with you. The Spirit of Love and of Patience, that prevented Him from becoming embittered, dejected, or wearied in well-doing, because of the faults of men, will also be with you in your work, which has a great similarity to that in which he engaged on earth. You, teachers, have to do with children, whose faults, no doubt, occasion you many a bitter feeling. If on this account you feel discouraged, and forget to weigh the faults of children against the yet greater faults of men, then think of our Saviour's conduct towards the erring Peter. Peter was an eminent character. He was named by Jesus himself a Rock, on which he was to build his Church. He was of a vehement disposition, prompt to engage in everything that was good, and was thoroughly penetrated with love to Jesus. Jesus knew all this, and yet he did not expect from him spotless virtue, nor sinless obedience. Jesus told him beforehand that he would fall. He knew that he would fall, and fall deeply too; but He knew also that he would bitterly repent, and would arise again from his fall. Teachers, do not you expect, do not you require, from your pupils more than can be reasonably expected from the children of fallen man. Do not look for ripe fruits in the days of blossoms. Do not reckon on steady attention in the years marked by light-mindedness, nor on manlike earnestness and imperturbable steadiness in the period of life in which all is vacillation and weakness. The faults of children should not surprise you as *something extraordinary*. If they did *not* commit faults, that would indeed be extraordinary—something to be surprised at. The physician does not vex and annoy himself because there are diseases. It is because there are diseases that he is a physician. And it is because children are not yet what they ought to be that you are teachers. But above all, take heed with respect to your favourites. Peter (after John) appears to have been one of Jesus' most favoured Apostles. But was Jesus, on that account, blind to his faults? The faults of our most hopeful pupils, we all know from experience, vex us most; still they ought not to come upon us as matters unexpected. The teacher may look round on his pupils, and fix his eyes on this one or that one, and say, "I have every reason to hope that So-and-so will grow up a good man and a useful member of society." So he may, but you must not expect him to grow up free from faults. Your expectation of him, and your prayer for him, ought rather to be, that he may never fall so far, but by God's grace he may be again restored.

My dear friends and fellow-teachers, put your hands upon your hearts, and call to mind your boyish days, and say whether in those days you were free from faults. I was not.

Jesus seemed never to doubt of the power of "*amendment of life*," and received into his peculiar favour those in whom he perceived evidences of it. He would have received even Judas, the betrayer, had he turned to him with hearty repentance, and "with full purpose of amendment of life," and had he not put such an untimely end to his life. Thus we find that the first thoughts of Jesus, after his resurrection, were of Peter. The angel sent from heaven to comfort the pious women at the sepulchre, thus spoke to them, "Go your way: tell his disciples and Peter that he goeth before you into Galilee: there shall ye see him, as he said unto you." Thus was the fallen but repentant Peter singled out by name from the rest of the disciples to be the recipient of the glad tidings that Jesus was risen indeed. How can I picture to you that meeting which took place between Peter and his Lord on the sea of Galilee? when those who had not fallen could tediously sail to the shore, but the fallen one cast himself into the sea, and swam to Jesus. The few minutes which he might be with Him, before the others came, were prized by him. Jesus did not allow his fall to pass by without mention and without reproof. To have done so would have been weakness, and perhaps even an encouragement to future transgressions. Yet how mildly, how tenderly he recalls his sin to the mind of the fallen one! "Simon, son of Jonas, lovest thou me more than these?" At one time Peter would doubtlessly have answered "Yes" to this question without hesitation; but he had now learned to know himself better. His answer was, "Lord, thou knowest that I love thee." Jesus repeated his question three times. Do you think it was to remind Peter of his threefold denial? I believe it was. Jesus assured the repentant Peter of full forgiveness, and at the same time intimated that he had yet much good to do: to feed His lambs, to feed His sheep; to glorify God in his life, and by his death.—W. R., in *English Journal of Education*.

#### 4. ON THE OUTWARD FORMS OF RESPECT DUE TO PARENTS.

There is great danger at the present day of parents neglecting to cultivate in their children a habit of reverence towards their seniors and superiors, and, most especially, towards themselves as the "father and mother," whom God commands children to "honour." By this *honour* or *reverence* to parents we mean something different from ordinary obedience—a feeling which, having its seat in the heart, shows itself in the movements of the body, the tones of the voice, and the words of the lips.

We will suppose that a family has been piously trained, taught to speak the truth, keep holy the Sabbath-day, and obey their parents. There may be no immorality, no positive disobedience, and yet there may be no reverence, none of those outward signs of respect which are due to all superiors in age or station, more especially to those who hold the parental relation. In such a household you hear the older children arguing, sometimes disputing, with their parents; entering or leaving their presence without any respectful recognition; continuing their conversation with each other or with strangers when a parent comes into the room, without even a look to ascertain whether it is agreeable; and even occupying the most comfortable seats, without offering to resign them. It is no uncommon thing to see a boy rush into his mother's presence with his hat on his head; to hear the door closed with a loud noise, if closed at all; and the parent greeted in a voice as shrill, and a tone as familiar, as that with which he would hail a companion on the playground. Is the mother who permits this conduct discharging her duty, and teaching her son to "honour" his mother?

We have too often seen young girls enter a father's presence with a brusqueness of manner, which was as irreverent to him as it was discreditable to herself. Perhaps such a daughter finds her parent reading or writing, yet, without any pause to see if he raises his head and looks a permission, she will enter into familiar discourse on some frivolous topic. We need not be surprised if, on being reproved, she leave the room with a frown, and show her reverence for the paternal relation by exclaiming to the first person she meets, "Father is so cross!" Another mode of showing a want of reverence is by a shrug of the shoulders, or a glance at a brother or sister, when anything is said by either parent that is opposed to the child's wishes. Command what is agreeable, and you are instantly obeyed; require what is painful or disagreeable, and you may see a pout or a frown. Fathers, may it not be that you allow your children to treat you with too great familiarity of manner? Have you required them, as you ought, to "rise up" and "do you reverence?"

If parents wish to be treated with respect by their sons and daughters who have arrived at an age to judge of what is right, let them train their children from infancy to observe all the outward forms of respect which are required in their own station in life. The boy who takes off his cap on entering his mother's sitting-room, who quietly closes the door, and waits till a glance assures him he may speak, is not the less likely to be received with all a mother's kindness, and to be listened to with undivided attention. Outward courtesy will be no restraint on the confidence which ought to exist between parents and children. The daughter who is accustomed from early childhood to look with respect towards her father before she addresses him, will be more likely to receive pleasure from his conversation, and to give him her confidence in return.

If mothers be allowed to indulge in a little maternal vanity—and who will deny them such a gratification?—they cannot secure it better than by accustoming their young children to habits of politeness towards themselves and each other. We were once much struck by seeing a little fellow stand some few minutes unnoticed by his mother's side, looking at a lady visitor who did not speak to him; at last he caught a glance of encouragement, walked quietly round the table, took the lady's hand, and kissed it. After answering the few simple questions put to him, he left the room on receiving a look of permission from his mother. Boys should be accustomed to hand a chair, or a book, or any other object to their mother, with the courtesy which, in after life, they would act similarly towards other ladies of their acquaintance. Why should not a little girl move as gracefully and speak as gently to her father as to a stranger? This will prove no check on the much-coveted "romp with papa;" it will render it the more certain, as the father will know that he may "indulge his pet" with safety, being assured that he will be immediately and graciously obeyed when he wishes to stop.

The cultivation of quiet and considerate manners in children is of immense value during periods of illness, that of parents especially. We have seen a little girl literally soothe the violent pain of neuralgia by quietly climbing on to the sofa, and gently stroking the cheek of the sufferer, at the same time whispering words of endearment and condolence. We have seen the wearied, care-worn father kindly and silently received by his watchful daughter on his return from business, his hat and gloves removed, his slippers placed before him,

and a loving kiss pressed on his hand or forehead; and then a smile of encouragement was given, and words of cheerful greeting and enquiry passed between them; and the wrinkled brow was smoothed, and lines of care were toned down, and the weary eyes were again beaming with love and joy. Mothers, is it not wise and good early to train your daughters to habits of gentle, loving courtesy?

In order to secure such results as we wish to describe, parents must exercise towards each other, in the presence of their children, the habits and virtues which they desire to cultivate in their children. If the husband speaks in a loud, imperious, dictatorial tone to his wife; if he neglects to pay her those little attentions which her sex and her position demand, he will in vain require his children to "honour" her. We often see boys acting towards their sisters as they observe their father treat their mother; this is generally the case with the poor, and ignorant, and irreligious; the words, looks, and actions of the husband are repeated by his boys—first towards their sisters, and afterwards towards their mothers. The same is the case with the mother and daughter. If she neglect her husband's wishes, disregard his comforts, and disobey his commands, she need not wonder that her daughter follows her example. Even when parents live together in almost perfect unity, there will be times when differences will arise, when bodily indisposition, the trials of the world, or the cares of domestic life, make it almost impossible for the temper to be under perfect control; let not, we entreat you, parents—let not your children see or hear a jarring chord. Let not those watchful observers be present when the wife forgets that she must "obey her husband in the Lord;" or, far more onerous duty, when the husband neglects that solemn command, "And ye husbands, love your wives, even as Christ loveth the Church."—*British Mothers' Journal*.

#### IV. Biographical Sketches.

##### No. 7.—FREDERICK WILLIAM IV., KING OF PRUSSIA.

Frederick William IV., King of Prussia, was born October 15, 1795, and succeeded his father, Frederick William III., on the 7th June, 1840. Having received his education under the most eminent professors in Germany, he took part as a simple officer in the campaigns of 1813 and 1814. For some years prior to the death of his father, the Crown Prince was looked upon as the hope of the Absolutist party; but shortly before his accession to the throne, his feelings and principles are supposed to have undergone a change. It was seen with pleasure by the most enlightened men of Prussia that he inclined to the Liberal side, and a policy was expected of him which would have the effect of bringing his administration into closer harmony with the national feeling, at least in so far as its foreign policy was concerned, which leaned too much to the side of Russia to please the patriotic and intensely German party; that desired to be German above all things, even more than it desired to be Prussian. When in the fulness of time he mounted the throne, these hopes seemed on the point of realization. He conceded several reforms, which, though of a minor character, were hailed with delight as the precursors of a better system, and presented, in many respects, a marked and favorable contrast to his father, who had almost uniformly held and acted upon the doctrines of Absolutism. The new reign was unmarked by any great event until the fatal year of 1847, when the revolutionary insanity of the period infected the people of Berlin, and led to collisions between the military and the citizens. The King took measures to calm the tempest of insurrection, placed himself at the head of the national party, and proposed to fuse all the German States into a great federal union, under a single monarch. His famous saying, "Prussia disappears and Germany is born," added fervor to the existing excitement throughout Germany. But the King's enthusiasm not only led him too far for the time, but very soon cooled. An unfortunate though accidental quarrel between the people of Berlin and the soldiers induced exasperation on both sides, and renewed bloodshed was the result. Prisoners were taken, but the King released them, following up his clemency by a general amnesty for political offences, and by forming a new administration from the ranks of men in the popular confidence. Restored tranquility was the almost immediate consequence of his measures. Shortly afterwards, and still with German unity as his watchword, he undertook to protect Schleswig-Holstein in opposition to the claims of Denmark; but when the National Assembly at Frankfort passed over his pretensions, and elected the Archduke John Lieutenant General of the German empire, Frederick William became convinced to all appearances that "German unity," such as is desired by the enthusiastic students of Germany, was a game too difficult for him to play; and that as a King he would better consult the interests of his kingdom, by giving more of his attention to Prussia, and less to Germany, than he had been in the habit of doing. At the outbreak of the Crimean war, it was

confidently expected that the King of Prussia would have cast in his lot with Great Britain and France in support of the equilibrium of Europe, but with the vacillation which has marked every period of his career, his intentions were always in advance of his acts; and the reason for doing the right thing was balanced in his mind for some reason equally cogent for not doing it, or at all events for postponing it; and time wore on, and found him equally distrusted by Russia and the Powers opposed to her. In the year 1857 symptoms of mental aberration were observed by the physicians of his Majesty, and those symptoms continuing to grow stronger, it was deemed necessary to establish a regency; and on the 9th of October, 1858, the King's brother, Prince Frederick William Louis, the heir presumptive to the throne, was inducted into the office, and took the necessary oaths amid the general satisfaction of the people. The King was married on the 29th of November, 1822, to Elizabeth Louisa, daughter of the late Maximilian Joseph, King of Bavaria. There has been no issue by the marriage, so that after the actual regent, the heir presumptive to the throne of Prussia, is the Prince Frederick William Nicholas Charles, married on the 25th of January, 1858, to the Princess Royal of England.

##### No. 8.—THE REV. DR. CROLY.

We regret to state that this distinguished divine and scholar died lately in the neighborhood of his residence, Queen Square, Bloomsbury. It appears that the Rev. gentleman had only left home a few minutes, and was seen walking apparently in good health, when he staggered, fell, and almost immediately expired. The Rev. gentleman had been rector of St. Stephen's, Walbrook, for 35 years, and was much respected by his flock. Dr. Croly was eighty years of age, having been born in Dublin in 1780. He was a graduate of Trinity College, in his native city, and began his literary career in 1816, with a poem entitled "Paris in 1815," describing the art treasures of the French capital, which Napoleon I. had collected from the various cities of Southern Europe. In 1820 he wrote "The Angel of the World, an Arabian Tale," and in 1830 a collection of his satires was published. In 1822 he wrote the tragedy of "Cataline," and in 1824 the comedy "Pride shall have a Fall," which had a success at the Covent Garden Theatre. His "Salathiel," a story founded on the legend of the Wandering Jew, and written in 1827, was extensively read, and was quite popular. Dr. Croly's other works show considerable versatility of literary industry.

##### No. 9.—THE DUKE OF NORFOLK.

The deceased nobleman was the fourteenth Duke of Norfolk, was born in 1815, and had succeeded to the dukedom only four years ago. He was a son-in-law of the late Lord Lyons. His son and heir, the Earl of Arundel and Surrey, is a boy only thirteen years old.

##### No. 10.—FUNERAL OF THE LATE BARON BUNSEN.

On Saturday, the 1st December, the funeral took place of his Excellency the late Baron de Bunsen, so many years Minister Plenipotentiary from the Court of Prussia to England, and previously Prussian Minister in Rome, whose death we recorded as having taken place at Bonn on the 28th ult. The coffin was of oak in the form of a sarcophagus, the lid much raised, and composed of a succession of plain mouldings in the wood. It was covered with wreaths of evergreens, intermingled with garlands and flowers,—most of them sent by friends. Near the head was a bunch of flowers and a small wreath which her Royal Highness the Princess of Prussia, had herself sent from the station as she passed through Bonn on her way to Berlin the preceding week, as a mark of sympathy and remembrance, and which had been preserved till the death of the Baron de Bunsen, and been buried with him. A garland of evergreens in festoons surrounded the sides of the coffin, on which were six handles. The Lutheran clergyman having arrived, entered the library, in the centre of which the coffin stood, and were also the Baroness de Bunsen, with Mademoiselle de Bunsen and Mademoiselle Amelia de Bunsen, Lady Llanover, Madame Charles de Bunsen, and Madame George de Bunsen.

A favorite hymn of the late Baron Bunsen was then played on the organ, and the coffin was raised by his three sons, his son-in-law, and his two secretaries. The coffin was borne down stairs by the handles between the above-named individuals, covered (as described) with flowers and garlands, and followed by a cushion, carried by his attached servant, on which was the star and riband of the order of the Red Eagle, and the star and riband and grand collar of the order of Saxe, &c.; next to which walked his Excellency Baron d'Usedom, with Lord Llanover and Count Goltz, followed by a numerous procession of students of the different corps, in striking

costume, with their chiefs, dressed in black velvet with white gauntlets and red or white plumes, carrying standards, followed by gentlemen, two and two; the whole was preceded by the military band of the Royal Hussars, commanded by Count Goltz, who took up the same hymn which had been played on the organ until the coffin left the house, and continued playing it in the most impressive manner through the town, passing round the Grande Place, through the Stern Gate to the cemetery without the town, a distance of nearly a mile. The Baroness de Bunsen and her daughters, with Lady Llanover, met the procession at the grave, where the band having ceased playing, a hymn was sung, after which a funeral oration was pronounced by the Lutheran minister, who afterwards prayed; and then on giving a signal, a shovelful of earth was held at the foot of the coffin, out of which each son of the deceased in succession sprinkled a little with his hand on the coffin, followed by Lord Llanover and other male friends and connexions. The Lord's Prayer and a hymn concluded the ceremony, which was most impressive, and must have been truly congenial to the feelings of the nearest relations of the deceased Baron. There were no mutes, no hearse, no hired mourners, no noisy confusion of carriages and horses, and although an immense concourse of the lower class attended, there was no indecorum or confusion occasioned by any person; all reverently uncovered when the minister took off his black cap, and did not replace their hats until he set the example. When the coffin had been borne a certain distance by the sons of the deceased, their places were taken in turns by the students of the University, and at the grave the chiefs of the corps stood in the foremost line, holding their respective standards. The coffin was left on the platform over the grave, covered with flowers, and not lowered to its last resting place till all the attendants had departed. On the opposite side of the same cemetery are the remains of Niebuhr, who preceded the Baron de Bunsen as Prussian minister in Rome, who in his turn was succeeded there by the Baron d'Useedom. The late Baron de Bunsen has left, besides his widow, ten children to lament his loss, five sons and five daughters, of whom six were under his roof at the time of his decease. Of those absent, his youngest son is attached to the Prussian Embassy in Japan. His eldest son, the Rev. Henry de Bunsen, is rector of Lilleshall, having entered the established church of Great Britain. Of his daughters two are married—the Baroness d'Ungern Sternberg and Mrs. Battersby Harford; three of his married children (including Mr. Ernest de Bunsen, who married Miss Gurney) reside altogether in England.

## V. Statistical Papers.

### 1. HISTORY OF THE NATIONAL DEBT.

The first form in which the State seems to have borrowed money was by way of anticipating the duties of future quarters, or of the following year. In 1691 a sum of £3,130,000, was borrowed in this form, and in that year the only public debt consisted of that temporary loan, upon which the interest was £232,000, or at the rate of about  $7\frac{1}{2}$  per cent. These loans seemed to have ceased in 1753, or at least there is no separate account of them after that period. But the practice in another shape prevails to this day. In every quarter, where there is a deficiency in the means to meet the charges upon the Consolidated Fund, and the dividends of the public debt, there are issued to the Bank of England deficiency Exchequer-bills for the amount, which are paid off from the accruing revenue of the coming quarter, and which constitute, therefore, a loan in anticipation of duties. Again, there is extant now a law which enables the Treasury to raise money for any of the services of the year, upon an issue of what are called "Consolidated Fund Bills," but which must be paid off from the revenue of the next following quarter. These again form a loan in anticipation of duties. The next form of debt which we find was in the shape of navy bills, which were issued in 1693, to the amount of £1,430,439. This form of debt existed until 1795, when they, together with the ordnance debentures, appear to have been consolidated with the funded debt. In the following year, 1694, the first loan was made by the Bank of England to the Government, amounting to £1,200,000, at 8 per cent. This loan continued stationary until 1709, when it was increased to £3,375,028, and the interest reduced to 6 per cent. It remained at this amount until 1718, when it was increased to £5,375,000, partly at 6 per cent. and partly at 5 per cent. The debt to the Bank of England reached its *maximum* of £14,686,800, in 1816, at the rate of 3 per cent., at which it stood till the renewal of the charter in 1834, when it was reduced to £11,015,100, at which it now stands. The next form in point of date in which the nation borrowed was by the issue of the ordinary Exchequer Bills in 1698 to the amount of £500,000. This form of unfunded debt has been more largely used than any other, and their issue seems to have

reached the *maximum* in 1814, when the amount was £56,987,700. At the close of the last financial year they were reduced to £13,277,400, a quantity amounting to £7,000,000, having been funded a few months before. In point of date, the next form of public debt was a loan of £2,000,000, from the East India Company at 8 per cent. In 1707, this loan was increased to £3,200,000, and the interest reduced to five per cent. In 1744, a further loan of £1,000,000, seems to have been made at 3 per cent., and in 1757 the whole (£4,200,000), was reduced to that rate. This loan continued to that amount till 1793, when it was paid off. These loans from the Bank of England and from the East India Company must be regarded in the light of payments from their stocks as the price of the monopolies which they enjoyed. It was not until 1706 that the portion of the debt called the National annuities was contracted. In that year annuities at the rate of 6 per cent. were contracted for to the amount of £664,263. This sum was increased in 1711 to £2,125,033, and in 1712 to £9,816,563. In the following year a small amount was issued at 4 per cent. In 1716 the 6 per cent. Annuities ceased, and for many years the National Debt was in the form of 4 and 5 per Cent. Annuities. The first time the 3 per Cent. Consolidated Annuities appear is in 1722, when the whole capital of the funded debt, including the debts to the Bank of England, the East India Company, and the South Sea Company, amounted only to £49,874,736. At the same time the amount of the unfunded debt was £4,281,476. This was the growth of 31 years. The system of borrowing having been once fairly entered upon, it went on steadily from year to year, notwithstanding the remonstrances of enlightened men, until in 1761, at the beginning of the reign of George III., the funded debt had reached £109,908,947, when the unfunded debt was £4,386,040, making a total of £114,394,987. In the next 20 years the amount was increased by another £100,000,000, and in 1782 it stood at £214,792,586. In ten years more it increased to £239,663,421, at which it stood in 1792, before the commencement of the long struggles which terminated in 1815. During those 23 years the debt increased by no less a sum than £621,375,628, the total amount funded and unfunded being in that year £861,039,049, the *maximum* point to which it ever reached. The only period in English history during which the public debt did not increase, but, on the contrary underwent a diminution since 1621, when the art of State borrowing was first inaugurated, has been the time that has elapsed from 1815 to the present time. Under the influence of the sinking fund, established in 1821, the debt diminished, until, in 1834, it reached the *minimum* at which it had stood since the close of the French war. It was then £773,234,401, being a reduction from 1815 of £87,804,648, or at the rate of upwards of four millions-a-year. In 1835 an increase took place in order to raise the Slave Indemnity Fund. In 1841 it again rose to £792,308,685. A gradual reduction then took place until 1853, when it stood at £769,082,549. Then came the Russian war, in consequence of which the amount rose in 1856 to £808,108,722. Since then it has been reduced to the sum of £806,078,554, at which the funded and unfunded debt together stood on the 31st day of March, 1858. It has been thus that in 168 years the public debt of England has grown from a sum of £3,130,000, and an annual charge of £232,000, to a sum of £806,078,554, involving an annual charge of £28,204,299, to be borne by the capital and industry of the country.—*Economist*.

### 2. ENGLISH COTTON FACTORIES.

From a paper recently read by Mr. David Chadwick, of Selsford, before the "London Statistical Society," we are enabled to present several interesting facts relating to the machinery of cotton mills and the wages of factory operatives. In the cotton mill, seven classes of workmen are employed in the several departments following:—1, as engineers, porters, &c.; 2, in cotton mixing and blowing; 3, in carding and preparing; 4, in self-acting mule spinning; 5, in throstle spinning; 6, in spinning upon hand mules; and 7, in power-loom weaving. In a mill of 500 hands, the numbers employed respectively in these departments are as 27, 8, 72, 35, 69, 275, and in beaming, and twisting and sizing, 14. Of the whole number, 19 per cent are men; 50.2 per cent women; 6.6 per cent boys; and 24.2 per cent girls.

During the last twenty years, the wages of all classes of factory hands have increased from 10 to 25 per cent, owing chiefly to the improvements in machinery enabling them to perform a larger amount of work, and thereby increase the value of their labour.

In 1856, there were 3,046 cotton factories in England and Wales; 1,480 of which were situated in Lancashire. Notwithstanding that legislative restrictions were laid upon the employment of young persons, and the reduction of the time of labour from 69 hours per week to 60, the imports of raw cotton increased from 646,000,000 lbs in 1844, to 1,034,000,000 lbs. in 1858; whilst during the same



period, the value of the exports of cotton goods, twist, and yarns, increased from \$130,000,000 to \$215,000,000—an extension which illustrates alike the immense demand for cotton fabrics, the commercial development produced by machinery, and the enterprise of the cotton lords of England.

The estimated number of operatives employed in the cotton trade of Lancashire is upwards of 400,000 hands. Reckoning the average rate per head at 10s. 3½d. per week, the aggregate wages for that number would amount to about \$1,029,000 weekly, or over \$53,000,000 per year; whilst, for the whole of England and Wales, the aggregate annual wages would be about \$110,000,000. Mr. Chadwick estimates the number of spindles employed in Lancashire at 28,000,000, and of looms 360,000. The aggregate capital now invested in the cotton manufacture of Lancashire, is as follows:—

Spindles, 28,000,000, at 18s. each .....	£25,200,000
Looms, 360,000, at £20 each .....	7,200,000

£32,400,000

Add to which, as the estimated value of materials and stock, of manufactured goods, and of working capital—say .....	20,000,000
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£52,400,000

Applying the same ratio of valuation to the remaining 1,566 mills in other districts of the country and in Wales, we shall have as the aggregate capital employed in the cotton trade of England and Wales, about \$525,000,000. These figures may afford some idea of the enormous interests dependent on the cotton crop of America.—*Hunt's Merchants' Magazine.*

### 3. THE COTTON TRADE OF FRANCE—ITS COMMENCEMENT AND PROGRESS.

The Paris *Sicdele* of the 26th of January contains an article giving a historical sketch of the cotton trade in France, from its importation by the brothers Bowers, of Ghent, in 1800. There were 2,606 cotton manufactories at work in France in the year 1850. The spinning mills employed 63,064 workmen, the cotton cloth manufactories 188,567, and the manufactories of inferior articles 23,299. The spinning mills contained 16,301 frames, and the manufactories, 113,378. The production of these establishments amounted in value to only 334,000,000f., which would give only 10f. worth to each inhabitant, or scarcely four shirts, or six pairs of stockings, or one sheet, which is too little for a civilized country, particularly when we consider that a large quantity of the cotton manufactured in France is exported. The cotton imported annually into France from America, Asia, and second hand from England, is estimated at 72,000,000 kilogrammes, value about 108,000,000f. This sum is increased by the import duty, which in 1851 amounted to 12,320,000f., or about an eighth of its real value.—*Ibid.*

### 4. BRITISH RAILROADS.

The following is a summary of the annual aggregate resource of the railroads of the United Kingdom, since 1842, with the number of miles in use at the end of each year:—

	Miles opened.	Receipts.		Miles opened.	Receipts.
1842 .....	1,630	£4,470,700	1843 .....	1,736	£5,022,650
1844 .....	1,950	5,814,980	1845 .....	2,243	6,900,270
1846 .....	2,840	7,945,870	1847 .....	3,710	9,277,671
1848 .....	4,626	10,455,100	1849 .....	5,950	11,683,800
1850 .....	6,733	13,142,235	1851 .....	6,928	14,987,310
1852 .....	7,337	15,543,610	1853 .....	7,774	17,920,530
1854 .....	8,028	20,000,520	1855 .....	8,240	21,123,300
1856 .....	8,761	22,995,500	1857 .....	9,171	24,162,460
1858 .....	9,568	23,763,764	1859 .....	9,883	25,576,100

## VI. Miscellaneous.

### 1. THE FALLING SNOW!

How gently falls the snow!  
The air is calm and still,  
The whispering winds have ceased to blow  
O'er wintry plain and hill;  
And now from all the o'ershadowed skies  
All noiselessly and slow,—  
As sent on tenderest ministries,  
So falls the feathery snow.

How rudely falls the snow!  
When o'er the frost bound earth  
The angry storm-winds fiercely blow  
From the far icy north;

On, on, before the furious blast,  
Till whirled in drifts below,  
The myriad flakes go hurling past,—  
So falls the arrowy snow.

How lightly falls the snow!  
To those where fortune smiles,  
How gay the wintry moments go  
Where festal mirth beguiles,  
'Tis but the call to wilder joy  
Than milder seasons know,  
And sport and dance the hours employ,—  
So merrily falls the snow.

How heavily falls the snow!  
To those—the suffering poor—  
How cold the hearths where want and woe  
Have opened wide the door;  
O, long and lone they count the hours,  
And heart and hope sink low;  
For o'er their lot a grim fate lowers,—  
So drearily falls the snow.

### 2. EDUCATION OF THE QUEEN'S CHILDREN.

At the sea-side residence of Queen Victoria, in the Isle of Wight, a large portion of pleasure grounds is appropriated to the young princes and princesses, who have each a flower and a vegetable garden, green-houses, hot-houses, and forcing frames, nurseries, tool-houses, and even a carpenter's shop. Here the royal children pass much of their time. Each is supplied with a set of tools, marked with the name of the owner; and here they work with the enthusiasm of an amateur and the zeal of an Anglo-Saxon. There is no branch of gardening in which the royal children are not *au fait*. Moreover, on this juvenile property is a building, the ground-floor of which is fitted up as a kitchen, with pantries, closets, dairy, larder, all complete in their arrangements; and here may be seen the young princesses, arrayed *à la cuisinière*, floured to the elbows, deep in the mysteries of pastry making, like a rosy New England girl, cooking the vegetables from their own gardens, preserving, pickling, baking, sometimes to partake among themselves, or to distribute to the poor of the neighbourhood, the result of their handiwork. The Queen is determined that nothing shall remain unlearned by her children; nor are the young people ever happier than during their sojourn at Osborne. Over the domestic establishment is a museum of natural history, furnished with curiosities collected by the young party in their rambles and researches—geological and botanical specimens, stuffed birds and animals, articles of their own construction, and whatever is curious or interesting, classified and arranged by themselves. Here the most exalted and purifying tastes are cultivated. Here nature, common to us all, is studied and admired; while beyond this, a capability of entering into the condition of the people, and a sympathy for their labors, is acquired by a practical knowledge of what labor is; and though we need scarcely suppose that the royal children weary themselves as those who toil by the sweat of their brow, yet, even in their moderate digging and working, they must learn the better to appreciate the results of labor in the luxuries surrounding them. Not plants alone are cultivated, but health, vigor, and liberality—every quality, in fact, that must tend to make them better men and women, and better fitted to fill the stations Providence has allotted to them.—*Home Journal.*

### 3. THE QUEEN AND HER TWO DAUGHTERS.

Two of the little English Princesses once went into a room where a servant was polishing a stove-grate, and insisted on helping her. After getting possession of the brushes, they polished the woman's face instead of the grate. The servant was ready to sink with confusion, for she could not leave the apartment without encountering Prince Albert. He was astonished to see so dirty an object emerging from his rooms, and inquired the meaning of it. The servant reluctantly told him; it soon reached the ears of the Queen, and she was seen crossing the court, leading the two Princesses by the hand, towards the servant's quarters. Her Majesty sought out the woman, made her daughters ask her pardon, and sent them at once to the nearest millinery and dress establishment, to purchase a complete outfit—dress, bonnet, shawl, gloves, &c., and present them to the servant in lieu of the dress they had soiled upon her. The articles were purchased with their own money, and consequently their supply of it was curtailed materially; but this they said they didn't care for in the least—in fact, it rather pleased them than otherwise—it was only asking the woman's pardon they didn't like.



#### 4. LORD BROUGHAM'S LETTER TO THE QUEEN.

Lord Brougham, in reproducing his volume, entitled, "The British Constitution, its History, Structure and Functions," has heralded the work by the following dedication to Her Majesty :

TO THE QUEEN—Madame: I presume to lay at your Majesty's feet a work, the result of many years' diligent study, much calm reflection, and a long life's experience. It professes to record facts, institute comparisons, draw conclusions, and expound principles, often too little considered in this country by those who enjoy the inestimable blessings of our political system, and little understood in other countries by those who are endeavouring to naturalize it among themselves, and for whose success the wishes of all must be more hearty than their hopes can be sanguine. The subject of the book, "The British Constitution," has a natural connection with your Majesty's auspicious reign, which is not more adorned by the domestic virtues of the sovereign than by the strictly constitutional exercise of her high office, redounding to the security of the crown, the true glory of the monarch, and the happiness of the people. Entirely joining with all my fellow citizens in feelings of gratitude towards such a ruler, I have individually a deep sense of the kindness with which your majesty has graciously extended the honors formerly bestowed, the reasons assigned for that favor, and the precedents followed in granting it. With these sentiments of humble attachment and respect, I am your Majesty's most faithful subject, and most dutiful servant,  
BROUGHAM.  
Brougham Hall, Dec. 11, 1860.

#### 5. THE CALIGRAPHY OF IMPORTANT PERSONAGES.

Lord Derby's handwriting is beautiful—equally elegant and legible. Lord Stanley's is as legible as large pica, but certainly not elegant. Lord Palmerston's is free, pleasant, and by no means obscure. The Duke of Newcastle writes an excellent hand—long, well-formed letters, and very distinct. Lord John Russell's penmanship is not unlike the Colonial Minister's, but on a smaller scale. Other instances might be cited, but it is more the purport of the present paper to say that the East India Company nearly all through the present century, have been remarkably fortunate in the caligraphy of their chief servant, the Governor General, who has set an example of penmanship to the whole class of writers which ought not to have been thrown away. Lord Wellesley's handwriting is, perhaps, the best that we have ever seen. Sir George Barlow's was little inferior. Lord Minto wrote a remarkably firm, solid, legible hand. Lord Hastings and Lord Amherst were somewhat stately in their penmanship, but every letter was as clear as type. Lord William Bentinck ran his letters, and sometimes his words a little too much into each other; but he wrote a good flowing hand which was rarely otherwise than legible. Lord Auckland's writing was peculiarly round and distinct, the very reverse of his successor's, Lord Ellenborough's, which was pretty and lady-like, and not distinct; but he was always one of the honorable Company's naughty boys. Lord Dalhousie wrote a beautiful hand—flowing and elegant, but very distinct; and the present Governor General, Lord Canning, need not blush to see his handwriting placed beside that of any of his contemporaries.

#### 6. BOOTY TAKEN BY THE ALLIES IN CHINA.

With regard to the booty taken by the allies in China, inestimable conquests in an artistical and historical point of view, are spoken of. The part acquired by France would alone suffice for the formation of an immense Chinese museum. Among other things mentioned is a clock of wonderful workmanship, with carved figures representing the seasons; all the wardrobe of the Empress of China, etc. There has also fallen to the lot of the French an edition of Confucius, which belonged to the celebrated Emperor Kahg-Di, the Napoleon I. of the Chinese, and having notes in his hand-writing. Among the other objects found in the summer palace, and which are in the part reserved for France, is an elephant of natural size, in gilt and enamelled bronze, and most magnificent.

#### 7. WELLINGTON NEVER LOST A GUN.

It is a singular fact in this man's history that he never lost a gun to the enemy. "Returning with him one day from the hunting-field," says Lord Ellesmere, "I asked him if he could form any calculation of guns he had taken in the course of his career?" "No," he replied, "not with any accuracy; somewhere about 3,000 I should guess. At Oporto, after the passage of the Douro, I took the entire siege train of the enemy; at Vittoria and Waterloo I took every gun the enemy had in the field; and what, however, is more extraordinary, I don't think I ever lost a gun in the field."

"After the battle of Salamanca," he went on to explain, "three of my guns, attached to some Portuguese cavalry, were captured in a trifling affair near Madrid, but they were recovered the next day. In the Pyrenees, Lord Hill found himself obliged to throw eight or nine guns over a precipice, but these were all recovered, and none fell into the hands of the enemy."—*Brialmont's Life of Wellington*.

### VII. Short Critical Notices of Books.

— LESLIE'S AUTOBIOGRAPHICAL RECOLLECTIONS. Boston: Ticknor and Co. These Recollections, by the late C. R. Leslie, R. A., are "edited, with a prefatory essay on Leslie as an artist, and selections from his correspondence," by Tom Taylor, Esq. The English copy for this edition was furnished to Messrs. Ticknor and Co by Mr. Murray, the eminent publisher in London. The work is full of most interesting anecdotes and sketches of most of the modern English artists, authors, and politicians, as well as several American. The paper and type are excellent.

— THE KING'S HIGHWAY. New York: R. Carter and Brothers. This work contains a series of stories admirably illustrative of the Ten Commandments, by the Rev. Richard Newton, D.D. The book is well written and will be found of much practical value.

— THE PILGRIM'S PROGRESS. London: James Hogg and Sons. This is a neat edition on good paper of Bunyan's renowned allegory of the Pilgrim's Progress. The illustrations are striking but not numerous.

— THE PILGRIM'S PROGRESS. New York: R. Carter and Brothers. This edition of the great allegory is superior to the one just noticed. The illustrations are admirable. They consist entirely of characteristic portraits of nearly all the prominent characters which figure in this wonderful book.

— THE CHILDREN'S BIBLE STORY BOOK. New York: C. S. Francis and Co. This book contains a series of Bible stories in large type, with illustrations.

— THE BROTHER'S WATCHWORD. New York: R. Carter and Brothers. The motto of this book is "Seeing Him who is Invisible." In this spirit it is written, and with this object the counsels of the brother whose career is here traced are offered to and acted upon by his youthful sister. The book is a reprint of an English work. The illustrations are good.

— FLOWERS, GRASSES, AND SHRUBS. London: James Blackwood. This is a popular book on botany by Mary Price. It is written in an agreeable style and nicely illustrated. The language is not so technical as to weary, but is sufficiently so to answer all the purposes of a professed amateur botanist.

— THE LITTLE LYCHETTS. New York: R. Carter and Brothers. This is a nice reprint of a simple story of ordinary English life. The juvenile sketches are good, and the tale itself will be found highly instructive to the young.

— BOOK OF CHILDREN'S HYMNS AND RHYMES. London: James Hogg and Sons. The poems in this book are collected from various sources by the "daughter of a clergyman." They include nearly all the beautiful little hymns and rhymes by Watts, Hemanus, Howitt, Cowper, Heber, &c., which are so familiar to children, and are among their choicest poetical favorites. The type and paper are good.

— KATE AND EFFIE. New York: R. Carter and Brothers. This is also the reprint of an English book. It is designed to illustrate the sin and evil of prevarication in youth. It cannot fail to have a good influence.

— CHARLES AND MARY. New York: James Miller. This book contains a number of stories designed as a help to parents in the training of children. It is translated from the German by C. S. Salyman. The principal subjects illustrated are Duties to Ourselves, Duties to others, Cruelty to Animals, Food, Dress, &c.

— OUR YEAR. New York: Harper and Brothers. This is a child's book in prose and verse, by Miss Muloch, author of "John Halifax, gentleman." It contains a series of sketches, illustrative of English History in each month of the year. The sketches are agreeably written, and well suited to youth.

— DAYS AT MUIRHEAD. New York: R. Carter and Brothers. This is a pretty story of little Oliver's mid-summer holidays at Muirhead, a Village on the borders of the Highlands of Scotland, with lessons derived from them. There are several illustrative engravings.

## VIII. Educational Intelligence.

## CANADA.

— **UPPER CANADA COLLEGE.**—A highly complimentary address has lately been presented to George M. Evans, M.A., late third Classical Master in Upper Canada College, on his retirement from the College to follow the profession of the law. The address was signed by the principal and all the masters. Mr. Evans made an appropriate reply.

— **BELLEVILLE SEMINARY.**—A tea meeting was held in this seminary on the 11th ult. Dr. Hope was called to the chair, and addressed the meeting in favour of legislative aid being given to the seminary. He was followed by the Rev. G. Shepard, governor of the institution, who pointed out the means of extricating the institution from debt. He was followed by the Revs. Messrs. Aylsworth and Howard, both of whom spoke of the importance of the institution to them as a church and to the country. The choir performed several pieces of music during the evening in a fine style, and all went away highly pleased with the entertainment.

— **TORONTO CRIMINALS IN 1860.**—Of the male prisoners 317 could neither read nor write; 202 could read only; 496 could read and write imperfectly; and 14 could read and write well. Of the females 483 could neither read nor write; 345 could read only; 196 could read and write imperfectly; and 1 could read and write well.

— **TO MEDICAL STUDENTS.**—A late British American *Medical Journal* contains a paragraph of such importance, not only to those now studying medicine, but to those about commencing its study, that we give its purport the benefit of our circulation. It is to the effect that the College of Physicians and Surgeons for Canada East will not in future admit to examination any candidate not in possession of a certificate of having attended a course on Botany. A course of lectures on this subject is delivered at nearly all our Universities.

— **MCGILL COLLEGE.**—The *Montreal Gazette* says that, at the close of the Christmas holidays, the classes in the various departments of the McGill University contained the following number of students:—In the Faculty of Law—matriculated students, 57; in the Faculty of Medicine—do., 124; in the Faculty of Arts—do., 45; occasional students, 13; making a total in the University of 239. In the High School Department there were 281; and in the Normal School, teachers in training, 61; and in the Model Schools, 300; making the total number of students and pupils 881.

— **A PRESENTATION OF PLATE** was made on Saturday, the 19th January, to T. A. Gibson, Esq., of the High School, by the old pupils resident in Montreal.

## IX. Literary and Scientific Intelligence.

— **THE PRINCE OF WALES AT CAMBRIDGE.**—The Prince of Wales made his entry into Cambridge on the 19th January on his way to his College. The bells of the town were rung, and banners displayed, while the municipal authorities "humbly craved permission to offer to His Royal Highness their congratulations. The Prince was then duly matriculated a member of the University, swearing to maintain the supremacy of the sovereign, her heirs and successors, the Church of England as by law established, and the privileges and immunities of the University.

— **STATUE TO MACAULAY.**—Under the sanction of Prince Albert, Chancellor of the University at Cambridge, and of the members of Trinity College, a fund is now in the course of being raised by subscription for the purpose of presenting to Trinity College a statue of Lord Macaulay.

— **MACAULAY'S HISTORY.**—The fifth volume of Macaulay's history, recently announced, will be much briefer than any of the preceding volumes—including only four or five chapters, and an index.

— **NEW CANADIAN LITERARY JOURNAL.**—We see from *Le Journal de Quebec* that a new Canadian literary journal is about to be published. It is to appear under the title of "*Canadian Evenings*," and to be a repository of Canadian national literature. It is to be conducted free from either religious or political discussion. Its contents are to consist of the finest Canadian legends, and extracts from old Canadian literature. It must prove a very interesting journal, if ably conducted. Its editors and printers are to be Messrs. Brousseau & Brothers; and the contributors,

Messrs. MM. E. Parent, L'Abbe J. B. A. Ferland, F. X. Garneau, P. J. O. Chauveau, J. C. Tache, Pabbe C. Trudel, L. J. C. Fiset, O. Cremaize, Gerin Lajoie, L. Lenoir, N. Bourassa, Pabbe H. R. Casgrain, F. A. H. Laure, Pabbe C. Legare, and L. H. Frechette.

— **MR. THOMPSON'S EXPLORATIONS.**—We learn from a notice in the January number of the *Canadian Journal* that the documents left by the late David Thompson, containing details of his explorations in the Hudson's Bay Territories, and which were supposed to be buried in the Company's archives, are likely to be made available to the public at an early day; as the editor has been informed by Andrew Russel Esq., Assistant Commissioner of Crown Lands, that copies of Thompson's field notes are among the records of that department. Mr. Russel has furnished some extracts for publication, which are promised in an early number of the *Journal*. Mr. Thompson was for thirteen years in the employment of the Hudson's Bay Company, and afterwards for fifteen years engaged with the North West Company. Subsequently he was employed for ten years as an astronomer and surveyor on the Commission relative to the boundary between the British Possessions and the United States.

— **LIBRARIES.**—The largest library in the United States is that of Harvard University. Next to it ranks the Philadelphia Library, which was founded by Benjamin Franklin.

— **NUMBER OF EARTHQUAKES UP TO 1850.**—Prof. Ansted, the English geologist, says that the reported number of earthquakes from the earliest ages to 1850, is over 7,000. From 1800 to 1850, 3,240. The average for the present century is about one a week.

— **LEARNING AND SCIENCE IN HOLLAND.**—In the budget of Holland for the next year, 4,000 florins are put down for the encouragement of learning and science. A general dictionary of the Dutch language, and a work containing a description of all the insects in the country, and the best means of destroying them, being among the objects contemplated.

— **GERMAN TRANSLATION OF ENGLISH BIOGRAPHY.**—Of two volumes of biographies of famous inventors of modern times, just published at Stuttgart, both are devoted to English worthies—James Watt and George Stephenson.

— **THE ENGLISH PRESS** at the present time consists of 1,050 newspapers, which may be divided under the heads of liberal, conservative, independent, and neutral. The numbers assigned to these classes respectively in the order of their arrangement, are 397, 193, 106, and 354.

— **THE FRENCH PRESS.**—Paris possesses at present 503 newspapers; forty-two of these, as treating of politics and national economy, have to deposit a security in the hands of the government; four hundred and sixty are devoted to art, science, literature, industry, and commerce. The most ancient of the latter is the *Journal des Savans*, and dates from the year 1665.

— **LOUIS NAPOLEON'S HISTORY OF JULIUS CÆSAR.**—According to the *Paris Sport* the Emperor Napoleon, as soon as he shall have completed his History of Julius Cæsar, intends to present himself as a candidate for the French Academy upon the strength of it. This will be the first time of the election of an Emperor to that honor. The Emperor Napoleon I. was a member of the Academy, but was elected thereto whilst a General.

— **FRENCH EXPEDITION TO THE AMOOR.**—A scientific expedition is about leaving France to explore Southern Siberia, and particularly that portion contiguous to the Amoor. It will be headed by Dr. G. Meynier and M. de Louis d'Eichthal; and a commission has been appointed by the Paris Academy of Sciences to draw up instructions for the expedition.

— **THE SOURCES OF THE NILE.**—The Royal Geographical Society propose raising a subscription of £2000, for sending an expedition under Mr. Petherick (her Majesty's consul at Khartum,) up the Nile, to explore its sources, and to aid that of Captain Speke, already despatched by way of Ziuzibar in the same direction. The Society gives £100; the Foreign office £100; Lord Ashburton and Miss Burdett Coutts each contributed £50. An appeal is made to scientific men and others, and already £685 has been secured. Should the required sum be quickly raised, Mr. Petherick undertakes to reach Goudoroko in November next; he will then explore till March 1862, and after the rainy season, start afresh and continue his travels till the end of 1863, or the beginning of 1864.

— **LADIES AT RUSSIAN UNIVERSITIES.**—A somewhat singular fact is mentioned in the Russian journals: several ladies regularly attend the lectures of professors of the University of St. Petersburg, and take notes like students.

— A UNIVERSAL LANGUAGE.—The *Press Scientific des Deux Mondes* contains an extract from a pamphlet by M. Figuler in regard to an universal language. He states that the project of the celebrated Raymond Lulle, and other philosophers of the last century, is receiving considerable attention in Spain. "The most important men of Letters in Spain, in Science, and in Politics, have taken a deep interest in this humanitarian enterprise, the initiative of which belongs to Mr. Sotos Ochando. The Society of the Universal Language is constituted at Madrid, and has already held several sessions. A commission has been established to direct the labors. By means of an assessment on all the members, national and foreign, the grammar and dictionary of the future universal language will be printed and published. Many persons of distinguished ability have much faith in the success of the project. Do not discourage them. The utopias of one century are often the common-place familiarities of the following century."

— NEW SCENTED DIAMOND.—The *London Court Journal* states that a great sensation has been caused amongst the principal jewelers by the introduction of a "scented diamond." The stone has been recently discovered in Ava, and has the same value as others, the same transparency and the same weight, but it possesses the most extraordinary quality of emitting a very agreeable odor under the influence of a high temperature—such, for instance, as is more frequently than agreeably felt in a ball-room.

**X. Departmental Notices.**

**PUBLIC LIBRARY BOOKS, SCHOOL MAPS, APPARATUS, AND PRIZE BOOKS.**

The Chief Superintendent will add *one hundred per cent.* to any sum or sums, *not less than five dollars*, transmitted to the Department by Municipal and School Corporations, on behalf of Grammar and Common Schools; and forward Public Library Books, Prize Books, Maps, Apparatus, Charts, and Diagrams, to the value of the amount thus augmented, upon receiving a list of the articles required. In all cases it will be necessary for any person acting on behalf of the Municipal or Trustee Corporation, to enclose or present a written authority to do so, verified by the corporate seal of the Corporation. A selection of articles to be sent can always be made by the Department, when so desired.

**FORM OF APPLICATION FOR PUBLIC LIBRARY BOOKS, MAPS APPARATUS, SCHOOL PRIZE BOOKS, ETC.**

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SIR,—The [Trustees, or Board of Trustees, if in Towns, &c.] of the ..... School being anxious to provide [Maps, Library Books, or Prize Books, &c.] for the Public Schools in the [Section, Town, or Village, &c.] hereby make application for the ....., &c., enumerated in the accompanying list, in terms of the Departmental Notice relating to ..... for Public Schools. The ..... selected are *bona fide* for the .....; and the CORPORATION HEREBY PLEDGES ITSELF not to give or dispose of them, nor permit them to be given or disposed of, to the teacher or to any private party, OR FOR ANY PRIVATE PURPOSE WHATSOEVER, but to apply them solely to the purposes above specified in the Schools of the ....., in terms of the Departmental Regulations granting one hundred per cent. on the present remittance. The parcel is to be sent to the ..... Station of the ..... Railway, addressed to .....

IN TESTIMONY WHEREOF, the Corporation above-named, hereto affixes its corporate seal to this application, by the hand of .....\*, this ..... day of ....., 186-.

Amount remitted, \$.....

Trustees must sign their own names here.—See page 41. } ..... } Corporate seal to be placed here.

To the Chief Superintendent of Education, Toronto.

\* The Trustees of the Section; Chairman and Secretary of the Board of City, Town, or Village Trustees; Warden, Mayor, or Reeve.

NOTE.—Before the Trustees can be supplied, it will be necessary for them to have filled up, signed, and sealed WITH A PROPER CORPORATE SEAL, as directed, a copy of the foregoing Form of Application. On its receipt at the Education Office, the *one hundred per cent.* will be added to the remittance, and the order, so far as the stock in the Depository will permit, made up and despatched. Should the Trustees have no proper corporate seal, the Department will, on the receipt of *two dollars* additional, have one engraved and sent with the articles ordered.

\* \* \* If Library and Prize Books be ordered, in addition to Maps and Apparatus, it will be NECESSARY TO SEND NOT LESS THAN *five dollars* additional for each class of books, &c., with the proper forms of application for each class.

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All communications to be addressed to J. GEORGE HODGINS, LL.B., Education Office, Toronto.