

PHENOLOGICAL OBSERVATIONS IN CANADA, 1903.—BY A. H. MACKAY, LL. D., F. R. S. C., *Halifax*.

(Read 9th May, 1904).

OBSERVERS ETC. FOR THE FIRST TABLE, CANADA, 1903.

Nova Scotia : The average of about 300 selected schedules.
Prince Edward Island : Mr. John MacSwain, Charlottetown.
New Brunswick : George U. Hay, D. Sc., F. R. S. C., Saint John ; J. Baxter, M. D., Chatham.

Quebec : Miss A. M. Dresser, Francois Xavier, Brompton, Richmond Co.; Miss J. M. Varney, Richmond, Richmond Co.

Ontario : Cephas Guillet, Ph.D., Ottawa ; Mr. A. B. Klugh, Guelph, Wellington Co.; Mrs. F. E. Webster, Creemore, Simcoe Co.; J. H. Elliott, M. B., Gravenhurst, Muskoka.

Assiniboia : Mr. Thos. K. Donnelly, Pheasant Forks.

Alberta : Mr. Percy B. Gregson, Blackfalds.

British Columbia : J. K. Henry, B. A., Vancouver.

The first table of phenochrons contains the observations of this staff of observers at the stations indicated, the observations being confined to the "time when first seen" except where indicated in a few cases.

PHENOLOGICAL OBSERVATIONS, SECOND TABLE, NOVA SCOTIA, 1903.

The second table gives the phenochrons for each of the ten biological regions into which the Province of Nova Scotia has been provisionally subdivided, each phenochron being the average of a few or many observations within the region. Over 300 selected schedules of observations are represented in this summation.

The schedule of the school teachers who directed the observations at each school were sent in at the end of the school year to the Inspectors who transmitted them to the Superintendent of Education for the province, who in turn submitted them to the following staff for criticism, selection, and compilation into "belt" and "region" phenochrons. The

critical comments of each of this staff of phenologists were published in the April *Journal of Education*, 1904, pages 74 to 81, for the benefit of the observers for next year.

PHENOLOGICAL REGIONS AND COMPILERS, NOVA SCOTIA.

Region I. (Yarmouth and Digby Co.): Principal A. W. Horner, Yarmouth.

Region II. (Shelburne Co.): Principal C. Stanley Bruce, Shelburne.

Region II. (Queens Co.): Miss Minnie C. Hewitt, Science Teacher, Lunenburg Academy.

Region II. (Lunenburg Co.): Principal Burgess McKittrick, Lunenburg.

Region III. (Annapolis and Kings Co.): Principal Ernest Robinson, Kentville.

Region IV. (Hants Co.): J. E. Barteaux, Science Master, Truro Academy.

Region V. (Halifax and Guysboro Co.): Principal G. R. Marshall, Halifax.

Region VI. (Cum. and Col. on Cobequid Bay): J. E. Barteaux, Truro.

Region VII. (Cum. and Col., North slope): Principal E. J. Lay, Amherst.

Region VII. (Pictou and Antigonish Co.): W. P. Fraser, Science Master, Pictou Academy.

Region VIII. (Richmond Co.): Principal Geo. W. McKenzie, Sydney Mines.

Region VIII. (Cape Breton Co.): Loran A. DeWolfe, Science Master, North Sydney.

Region IX. (Victoria Co.): Loran A. DeWolfe, M. Sc., North Sydney.

Region X. (Inverness Co. sloping to Gulf): Loran A. DeWolfe.

The compilations of this staff were further reduced into the form published in the second table, "The Phenochrons of Nova Scotia, 1903," by Miss Jean Lindsay, B. A., Halifax. The phenochrons of the several divisions of the province, as well as the individual schedules are bound into annual volumes for preservation and the convenience of future phenological students.

In previous reports attention was called to the phenological work in other countries, especially that of Mr. Edward Hawley, F. R. Met. Soc., V. M. H., in England; of Dr. Ihne of Darmstadt, in Europe; and of the public school work of Michelsen and Mathiassen in Denmark, on Nova Scotian lines. Nothing strikingly new has appeared during the year abroad or at home in this department. The Marine Biological Station of Canada under the directorship of Professor Ramsay Wright of Toronto University, was working at Malpeque in Prince Edward Island during the year. Incidentally botanical work was done, more particularly the determination of the microscopic flora on which the oysters of the region feed. Mr. A. B. Klugh of the Wellington Field Naturalists' Club published valuable botanical papers during the season, and the Guelph *Herald* distinguished itself by the publication of an interesting series of botanical and other natural history articles and notes from members of the club. The *Ottawa Naturalist* had a specially valuable series of articles on Nature Study. The *Journal of Education* of Nova Scotia functions as the organ of the phenological observers of the province. The Bibliography of Canadian Botany for the year was presented to the Royal Society in a special report as usual.

The botanical nomenclature used is that of the latest edition of Gray's Manual, and the names of the birds are those of the American Ornithological Union.

The tables are also published in the proceedings of the Royal Society, as a part of the report of the Botanical Club of Canada.

[At the date this is going to press (Jan. 1906) it is satisfactory to see that the *annual* date instead of the *mensual* date is beginning to be used in Great Britain by Mr. Edward Mawley, F. R. Met. Soc., V. M. H., as can be seen in his valuable and interesting "Report on the Phenological Observations for 1904." The Nova Scotian system now used throughout Canada, and demonstrated to be so clear and space-saving in some of Mr. Mawley's tables, is undoubtedly the simplest system for the notation of dates and the recording and calculation of all phenochrons, individual, special and general. In Germany and Denmark a step has been taken in this direction by utilising the dates of the spring months for obtaining averages, means or "middle dates." But this method confines comparisons to different series of phenochrons for each month. The "annual" dates form a single series for the year; and after very little use become as full of meaning as the popular "day of the month," and very much more convenient for recording and averaging].

PHENOLOGICAL OBSERVATIONS, CANADA, 19.3.

OBSERVATION STATIONS.

Number.	Day of the year 1903 corresponding to the last day of each month.		Average dates for												
	Jan 31	July 212	† Nova Scotia.	Charlottetown, P. E. I.	St John, N. B.	Chatham, N. B.	Brompton, Que.	Richmond, Que.	Ottawa, Ont.	Guelph, Ont.	Creemore, Ont.	Gravenhurst, Ont.	Pheasant Forks, Assn.	Blackfalds, Alberta.	Vancouver, B. C.
1	Alnus incana, Willd	104	128	109	84	73	99	80	106	119	106	133	130	119	106
2	Populus tremuloides	118	128	115	90	90	106	133	130	119	106	133	130	119	106
3	Epigæa repens, L.	102	118	115	99	100	101	102	102	119	106	133	130	119	106
4	Equisetum arvense	127	132	132	109	109	110	121	138	90	106	133	130	119	106
5	Sanguinaria Canadensis	125	132	132	109	109	110	121	138	90	106	133	130	119	106
6	Viola blanda	121	132	132	109	109	110	121	138	90	106	133	130	119	106
7	Viola palmata, cucullata	123	129	143	120	122	118	118	119	116	116	140	140	119	106
8	Hepatica, triloba, etc	118	118	93	88	90	89	79	100	100	106	133	130	119	106
9	Acer rubrum	126	137	121	119	107	104	97	106	106	106	133	130	119	106
10	Fragaria Virginiana	124	129	119	100	112	118	105	124	144	106	133	130	119	106
11	“ “ (fruit ripe)	163	179	148	151	150	158	178	171	106	133	130	119	106	106
12	Taraxacum officinale	126	142	141	119	116	109	90	106	133	106	133	130	119	106
13	Erythronium Americanum	133	129	143	112	113	107	116	104	104	106	133	130	119	106
14	Coptis trifolia	131	136	143	106	120	118	126	126	126	106	133	130	119	106
15	Claytonia Caroliniana	123	123	90	79	106	133	130	119	106	133	130	119	106	106
16	Nepeta Glechoma	140	132	108	108	108	108	108	108	108	108	108	108	108	108
17	Amelanchier Canadensis	140	136	135	119	129	129	121	149	148	106	133	130	119	106
18	“ “ (fruit ripe)	196	210	183	106	133	130	119	106	133	130	119	106	106	106
19	Prunus Pennsylvanica	143	151	132	124	128	132	134	127	144	120	120	120	120	120
20	“ “ (fruit ripe)	221	212	106	133	130	119	106	133	130	119	106	106	106	106
21	Vaccinum Can. and Penn.	141	145	143	119	120	122	106	133	130	119	106	106	106	106
22	“ “ (fruit ripe)	195	188	106	133	130	119	106	133	130	119	106	106	106	106
23	Ranunculus acris	148	136	141	132	136	136	140	119	166	106	133	130	119	106
24	R. repens	154	160	132	106	133	130	119	106	133	130	119	106	106	106
25	Trillium erythrocarpum	147	136	143	134	116	126	115	131	106	133	130	119	106	106
26	Rhododendron Rhodora	145	145	106	133	130	119	106	133	130	119	106	106	106	106

* When becoming common.

† The phenochrons for Nova Scotia are the averages of over 300 selected schedules, the fractions being omitted. In some of the schedules from the Western Provinces of Canada, the cognate western species are taken as indicated exactly in previous reports.

PHENOLOGICAL OBSERVATIONS, CANADA, 1903.

OBSERVATION STATIONS.

Number.	Day of the year 1903 corresponding to the last day of each month. Jan 31 July ... 212 Feb 59 Aug ... 242 March .. 90 Sept ... 273 April ... 120 Oct ... 304 May ... 151 Nov ... 334 June ... 181 Dec ... 365	Average dates for											
		† Nova Scotia.	Charlottetown, P. E. I.	St. John, N. B.	Chatham, N. B.	Brompton, Que.	Richmond, Que.	Ottawa, Ont.	Guelph, Ont.	Creemore, Ont.	Gravenhurst, Ont.	Pheasant Forks, Assa.	Blackfalds, Alberta.	Vancouver, B. C.
27	Cornus Canadensis.....	151	145	157	119	150	*140	143	146				
28	“ “ (fruit ripe)	208						198					
29	Trientalis Americana	150	151	157	119	150	135	144	144				
30	Clintonia borealis	152	151	167			*142	135	144				
31	Calla palustris	159		155	149	117	154		141				
32	Cypripedium acaule	159		167			147	150	139				
33	Sisyrinchium augustifolm	160		179	139	119	138		158		166		
34	Linnæa borealis	167		172	118		149	149	154				
35	Kalmia glauca	150		162			147		131				
36	Kalmia angustifolia	168		179			161						
37	Cratægus Oxyacantha	161	162						144				
38	Cratægus coccinea, etc.....	156		..			129						
39	Iris versicolor.....	170					155		157				
40	Chrysanthemum Leucan.	166					*156		149				
41	Nuphar advena.....	163					142		158				
42	Rubus strigosus.....	164					141	145	*156	141	173		
43	“ “ (fruit ripe)	214						186			210		
44	Rhinanthus Crista-galli ..	171											
45	Rubus villosus	166		171			148	149	*161	141			126
46	“ “ (fruit ripe)	241						206					
47	Sarracenia purpurea	144					*161	144					
48	Brunella vulgaris	172		179			159	154	153				
49	Rosa lucida	178				153	145		166	165	164	162	
50	Leontodon autumnale ..	168		160									
51	Linaria vulgaris	168					161						
52	Trees appear green	138					129	134	132				
53	Ribes rubrum (cultivated)	142							131				

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		+ Nova Scotia.	Charlottetown, P. E. I.	St. John, N. B.	Chatham, N. B.	Brompton, Que.	Richmond, Que.	Ottawa, Ont.	Guelph, Ont.	Creemore, Ont.	Gravenhurst, Ont.	Pheasant Forks, Assa.	Blackfalds, Alberta.
54	Ribes rubrum (fruit ripe)	199					189				210		
55	R. nigrum, (cultivated)	134											
56	" (fruit ripe)	210					193		*182				
57	Prunus Cerasus	147	160		132				*130				109
58	" (fruit ripe)	205											
59	Prunus domestica	151			129	128			*130				
60	Pyrus malus	151	157		136	131	131		*132				117
61	Syringa vulgaris	162	166	158	142	139	134		*141				130
62	Trifolium repens	162			149	139				143		164	133
63	Trifolium pratense	160			149	141	139			147			139
64	Phleum pratense	174											
65	Solanum tuberosum	182				169			*184				
66	Ploughing (first of season)	113			121	80	89		91			93	
67	Sowing, "	123	127		129	117	104		105		103	96	
68	Potato-planting "	123			145	120	142		138		127	115	
69	Sheep-shearing "	129			139						152	166	
70	Hay-cutting "	200									199	220	
71	Grain-cutting "	246	239				205				246	228	
72	Potato-digging "	266					278		274		265	220	
73a	Opening of rivers "	71	88			75			67			105	
73b	Opening of lakes "	89				83						128	
74a	Last snow to whiten gr'nd	116		115	95	113	94		84		119	140	
74b	" to fly in air	130		115	121	113	111		86			140	
75a	Last spring frost—hard	140	146	101	152		122				161	142	
75b	" " —hoar..	158					124				162	142	
76a	Water in streams—high	89				79			79		247	223	
76b	" " —low	193				158						312	

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Number.	Day of the year 1903 corresponding to the last day of each month.		Average dates for Nova Scotia.	Charlottetown, P. E. I.	St. John, N. B.	Chatham, N. B.	Brompton, Que.	Richmond, Que.	Ottawa, Ont.	Guelph, Ont.	Creemore, Ont.	Gravenhurst, Ont.	Pheasant Forks, Assa.	Blackfalds, Alberta.	Vancouver, B. C.
	Jan 31	July 212													
	Feb 59	Aug 242													
	March 90	Sept 273													
	April 120	Oct 304													
	May 151	Nov 334													
	June 181	Dec 365													
77a	First autumn frost—hoar..		257	..	..	..	..	..	283	..	..	..	..	245	..
77b	" " —hard..		284	..	..	..	..	..	..	..	..	..	..	312	..
78a	First snow to fly in air ..		290	..	..	..	..	296	281	..	..	..	252	255	..
78b	" " whiten ground		306	351	..	..	..	331	330	..	299	..	255	255	..
79a	Closing of lakes		339	..	..	..	..	335	..	..	..	..	..	320	..
79b	" " rivers		344	351	..	..	..	340	..	..	..	..	..	320	..
81a	Wild Ducks migrating, N.		85	..	..	90	54	61	..	91	..	..	100	93	..
81b	" " S.		302	..	..	..	..	286	..	..	..	..	..	..	..
82a	Wild Geese migrating, N.		78	75	..	71	..	66	100	86	..	..	98	93	..
82b	" " S.		318	246	..	..	..	285	..	..	..	..	310	..	..
83	Melospiza fasciata, North.		84	87	..	100	..	110	78	68	73	..	..	..	..
84	Turdus migratorius "		78	85	..	79	65	65	75	70	60	..	103	110	..
85	Junco hiemalis "		81	96	..	86	56	..	78	Res	..	..	..	..	..
86	Actitis macularia "		131	..	..	147	..	..	122	127	130	..	..	..	..
87	Sturnella magna "		121	..	..	..	..	..	101	76	131	..	96	..	..
88	Ceryle Aleyon "		125	..	..	128	115	..	117	99	115	..	151	..	..
89	Dendroeca coronata "		137	..	..	141	..	109	..	122	..	..	..	..	..
90	D. æstiva "		138	..	..	146	..	..	130	124	..	..	..	..	..
91	Zonotrichia alba "		116	..	..	126	..	..	119	109	..	..	..	..	..
92	Trochilus colubris "		147	..	..	151	..	..	..	140	..	..	..	..	..
93	Tyranus Carolinensis "		136	..	..	140	..	..	141	121	131	..	119	..	..
94	Dolychonyx oryzivorus "		136	..	..	147	138	137	141	128	..	..	..	..	..
95	Spinis tristis "		145	..	..	145	..	..	115	Res	129	..	..	..	..
96	Setophaga ruticilla "		133	..	..	148	..	..	135	129	..	..	..	..	..
97	Ampelis cedrorum "		144	..	..	159	..	..	..	136	..	..	107	..	..
98	Chordeiles Virginianus "		128	164	..	152	..	..	141	140	..	..	148	..	..
99	First piping of frogs		100	119	..	111	99	82	78	73	105	112	..
100	First appearance of snakes		100	115	84	85	78	..	109

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132	136	141	145	139	143	156	152	153	143	8			
248	201	138	137	212	214	156	152	230	221	8			
179	129	138	139	139	145	149	150	149	141	7			
173	179	181	177	179	169	446	156	149	141	7			
134	139	139	139	145	149	147	157	183	185	8			
141	143	151	154	152	157	158	168	157	146	4			
140	144	151	154	152	157	158	168	157	146	5			
138	136	140	145	142	148	146	160	155	147	5			
138	144	149	148	148	151	149	163	159	163	5			
232	199	...	232	166	...	...	213	208	5	8			
140	141	142	149	152	149	161	160	160	150	5			
145	148	143	155	160	150	156	169	148	152	9			
...	168	...	160	...	169	150	159	150	159	5			
149	149	152	158	161	156	157	173	164	...	5			
146	149	154	156	163	158	160	171	171	160	3			
155	155	158	161	166	170	169	173	183	178	67			
141	143	149	142	152	151	155	156	162	150	4			
150	161	166	174	161	177	174	166	183	168	2			
164	153	153	157	164	161	164	169	166	161	4			
155	153	153	157	154	158	...	170	157	4	3			
158	162	166	170	168	169	178	179	180	170	3			
154	161	162	163	160	161	163	178	180	180	6			
171	155	157	163	171	156	171	165	165	163	9			
150	207	207	219	163	161	179	172	168	164	2			
163	157	171	177	175	178	238	209	214	2	2			
159	160	167	168	163	154	171	173	177	171	3			
230	229	229	240	...	263	240	256	237	241	3			
161	167	164	167	168	166	170	156	...	144	9			
164	168	173	173	...	173	179	...	169	172	2			
177	175	179	179	...	173	179	...	185	178	6			
162	163	166	166	173	166	169	...	181	168	5			
149	195	...	158	158	168	169	...	...	168	...			
129	135	132	139	138	134	140	154	145	...	3			
131	133	138	142	141	143	142	154	147	142	8			
137	186	184	195	...	199	239	...	207	196	7			
134	136	140	143	142	143	144	155	158	146	3			
...	199	...	210	...	193	237	...	211	210	...			
133	137	138	144	150	147	148	162	158	153	14			
...	189	...	186	...	205	...	...	221	205	4			
136	137	140	146	153	150	149	170	170	156	51			
139	140	142	154	150	150	170	163	138	151	8			
151	151	154	158	160	160	160	177	169	179	62			
147	155	157	157	162	162	161	172	174	169	69			
140	148	155	156	158	163	161	175	174	172	60			
177	167	171	169	166	173	172	...	169	174	7			
174	174	180	182	...	182	...	...	189	174	7			
...	...	...	...	...	...	...	...	200	182	3			
191	Prunus Pennsylvania	fruit ripe	149.4	139.0	141	142	147	151	143	148	162	162	155
20	"	fruit ripe	228.6	233	210	222	222	222	221	221	139	106	236
21	Vaccinium Can. and Penn	...	149.1	136	136	146	147	146	147	147	169	166	154
22	"	fruit ripe	221.4	220	206	...	...	...	205	205	253	222	...
23	Ranunculus acris	...	154.6	143	147	149	153	147	155	157	165	161	166
24	R. repens	...	161.	148	149	157	163	161	157	165	173	...	173
25	Trill. erythrocarpum	...	154.1	147	151	150	159	159	155	163	165	...	159
26	Rhododendron Rhodora	...	153.2	147	143	143	152	151	155	152	165	160	157
27	Coronaria Canadensis	fruit ripe	158.7	146	150	157	157	157	157	157	167	168	168
28	...	...	220.	239	208	233	239	183	...	...	...	218	...
29	Trientalis Americana	...	156.7	146	148	148	154	157	154	155	170	167	165
30	Clintonia borealis	...	158.7	154	154	152	159	166	153	162	175	...	152
31	Calla palustris	...	164.8	...	174	...	...	171	158	...	...	156	...
32	Cypripedium acule	...	164.2	156	154	158	166	168	161	167	177	168	...
33	Sisyrinchium angustifolium	...	168.7	157	156	159	163	171	164	166	176	177	177
34	Linnaea borealis	...	171.1	161	161	166	169	174	172	175	178	181	181
35	Kalmia glauca	...	157.3	147	150	156	164	154	159	159	174	158	166
36	Kalmia angustifolia	...	174.	156	168	172	179	180	180	180	170	...	188
37	Crataegus oxyacantha	...	166.5	166	158	163	161	171	169	169	171	...	169
38	Crataegus coccinea, etc	...	163	158	155	159	165	165	165	164	172	...	172
39	Iris versicolor	...	175.7	165	169	174	176	176	175	173	189	183	182
40	Chrysanthemum Leucanthemum	...	174.7	166	168	171	173	177	170	172	182	184	183
41	Nuphar advena	...	170.8	175	168	171	174	173	167	175	183	...	183
42	Rubus strigosus	fruit ripe	170.9	163	162	171	169	174	164	170	184	...	178
43	"	fruit ripe	222.9	212	213	218	223	...	239	209	244	...	222
44	Rhinanthus Crista-galli	...	176.3	174	174	177	180	171	181	181	178	180	180
45	Rubus villosus	fruit ripe	173.3	168	167	173	170	161	178	180	180	180	178
46	"	fruit ripe	249.8	286	243	237	253	...	273	252	262	262	241
47	Sarracenia purpurea	...	171.3	172	173	171	167	172	171	176	167	...	170
48	Brunella vulgaris	...	176.	173	174	180	177	...	147	180	...	...	189
49	Rosa lucida	...	183.4	184	182	185	178	...	179	185	...	...	182
50	Leonotus autumnale	...	174.7	173	173	174	175	174	170	174	...	...	189
51	Linaria vulgaris	...	185.2	230	...	...	...	190	176	...	...	...	...
52	Trees appear green	...	152.2	142	140	161	153	151	141	155	167	155	...
53	Ribes rubrum (cultivated)	...	148.8	137	138	145	147	149	149	148	150	161	151
54	"	fruit ripe	216.7	217	202	214	...	...	206	246	261	215	...
55	R. nigrum (cultivated)	...	219.9	149	141	149	148	149	147	149	158	161	151
56	"	fruit ripe	150.8	201	...	...	...	217	...	242	242	219	219
57	Prunus Cerasus	...	138	138	143	145	151	159	154	154	164	162	158
58	"	fruit ripe	200	200	201	170	170	170	157	155	175	177	161
59	Prunus domestica	...	156.6	143	143	146	155	160	157	155	175	177	161
60	Pyrus Malus	...	159.6	147	147	157	160	164	155	157	160	172	164
61	Syringa vulgaris	...	168.1	158	156	159	166	174	169	165	180	177	176
62	Trifolium repens	...	168.9	198	161	164	164	171	168	169	170	176	173
63	Trifolium pratense	...	167.1	151	156	165	166	168	171	168	170	176	178
64	Phleum pratense	...	176	176	171	167	178	171	183	175	175	179	205
65	Solanum tuberosum	...	180	183	190	182	...	...	...	...	...	...	205

PHENOLOGICAL OBSERVATIONS IN

THUNDERSTORMS—PHENOLOGICAL OBSERVATIONS,
NOVA SCOTIA, 1903.

The indices indicate the number of stations from which the Thunderstorms were reported on the day of the year specified.

OBSERVATION STATIONS.

Province of Nova Scotia. YEAR 1903.	1. Yarmouth and Digby.	2. Shelburne, Queens and Lunenburg.	3. Annapolis and Kings.	4. Hants and South Colchester.	5. Halifax and Guysboro.	6. S. Cobequid Slope (S. Cum. & Col.)	7. North Cum., Col., Pictou & Antig.	8. Richmond and Cape Breton.	9. Bras d'Or Slope (Inv. & Victoria).	10. Inverness Slope to Gulf.
21	21									
22	22									
30 ⁵										
36 ⁵									30 ²	
59							36 ⁵			
86 ²		86 ²					59			
88 ²		88								
91	91						88			
93	93									
95	95									
97	97									
100 ²										
111							102 ²			
114 ²		114			111					
115 ⁴⁸		115 ³⁴	115 ⁵					114		
116 ³		116 ²	116							
121 ³										
124 ³	124	124		124		121	121 ²			
132										
133 ²			133				132			
134 ²	134		134				133			
135 ²⁰	135 ⁴	135 ²²	135							
137 ²	137						135	135		
138 ⁹	138	138 ⁵	138 ²							
139 ¹⁹	139 ²	139 ¹⁰	139 ⁵						137	
140 ⁷⁷	140 ¹⁰	140 ⁴³	140 ⁵	139			139			
141 ⁸¹	141 ⁸	141 ¹⁹	141 ²	140 ⁴	140 ¹⁰		140 ⁵			
142 ¹¹⁵	142 ³	142 ²⁶	142 ⁸	141 ⁵	141 ¹⁰	141 ²	141 ²⁸	141 ³	141 ³	
143 ⁷		143 ²		142 ⁹	142 ¹⁶	142 ²	142 ³¹	142 ¹¹	142 ⁷	
144	144						143 ³	143	143	
145	145	145								
147 ²	147		148 ²							
148 ³										
149 ⁵	149 ³	149					148			
							149			

THUNDERSTORMS—PHENOLOGICAL OBSERVATIONS.—(Continued).

OBSERVATION STATIONS.

Province of Nova Scotia. YEAR 1903.	1. Yarmouth and Digby.	2. Shelburne, Queens and Lunenburg.	3. Annapolis and Kings.	4. Hants and South Colchester.	5. Halifax and Guysboro.	6. S. Cobequid Slope (S. Cum. & Col.)	7. North Cum., Col., Pictou & Antig.	8. Richmond and Cape Breton.	9. Bras d'Or Slope (Inv. & Victoria).	10. Inverness Slope to Gulf.
156	156
159	159	.....	.....	159	.....	159	.....	.....	.....
160 ⁴⁶	160 ⁸	160 ²⁷	160 ²	160	160 ⁵	.....	160 ³	.....	.....	.....
161 ¹⁷	161 ⁸	161 ⁴	.....	161 ²	.....	.....	161 ⁸	.....	.....	.....
162 ²	162	.....	162	.....	.....	.....	.....	.....	.....
165 ²	165	165	.....	.....	.....	.....	.....	.....
166	166	.....	.....	.....	.....	.....	.....	.....
167 ⁷	167 ⁷	.....	169	.....	.....	.....	.....	.....	.....
169
170
171	171	.....	.....	170	.....	.....	.....
172	172	.....	.....	.....	.....	.....	.....
173	173	.....	.....	.....	.....	.....	.....
174 ³	174	.....	174	.....	.....
175 ⁵	175	.....	175	.....	175	175	175	.....	.....
176 ¹⁵²	176 ¹⁸	176 ⁴⁸	176 ¹⁸	176 ²⁰	176 ¹⁴	176 ⁴	176 ²⁰	176 ⁴	176 ²	176 ³
177 ²⁷	177	.....	177	177 ⁵	.....	177 ⁶	177 ³	177	177 ⁵
178 ³⁷	178	.....	178 ⁵	178 ⁵	.....	178 ¹²	178 ⁸	178 ²	178 ⁴
179 ⁶	179	.....	.....	.....	179 ³	179 ²	.....
180	180	.....	.....	.....
181 ⁴	181 ²	.....	.....	181	.....	.....	181	.....	.....	.....