

to say nothing of the future, while it only tends to perplex his ideas and unsettle his reason. Taking this view of the subject I am quite content in my belief that man was the last mammal created. That he had his time and place assigned to him in that sublime expression of the Will of the Almighty Creator, with whom to will is to execute, Who said—"Let us make man in Our image, after Our likeness—and let them have dominion over the fish of the sea—and over the fowl of the air—and over the cattle—and over all the earth—and over every creeping thing that creepeth upon the earth."

ART. X. NOTES ON THE WEATHER AT HALIFAX, NOVA SCOTIA,
DURING 1864. BY COLONEL MYERS.

[*Read Monday Evening, April 6, 1865.*]

THE year 1864 began with a gale of wind from S. E., and snow, which latter, however, soon turned to rain. The remainder of the month of January was generally fine, and, with the exception of two days, when the mercury stood a few degrees below zero, the weather was mild for the season. The mean temperature was 23° , being 7° lower than it was in 1863.

The weather in February was unsettled; the mean temperature 26° , being 3° higher than in 1863.

March was stormy and unsettled; mean temperature 28° , being 3° higher than 1863.

April weather variable, with high winds; mean temperature 36° , being 2° lower than in 1863.

May generally fine, though fogs were frequent; mean temperature 48° , being 10° higher than 1863.

June fine, but season backward, in consequence of the want of rain and prevalence of cold sea fogs; mean temperature 57° , being 3° higher than in 1863.

July very fine and dry; mean temperature 62° , being 3° lower than 1863.

August, though generally fine was characterized by occasional heavy rains; mean temperature 64° , being exactly the same as last year.

September very fine, with the exception of a few days of heavy rain; mean temperature 56° , being 2° lower than 1863.

October for the most part lowering and rainy. Frosts occurred towards the end of the month; mean temperature 46° , being 5° lower than 1863.

November generally unsettled; mean temperature 39° , being 1° lower than in 1863.

December weather variable and stormy; mean temperature 27° , being 1° higher than in 1863. The year closed with some severe weather.

The highest temperature in the shade recorded by me during 1864, was 92° , on the 15th June; the lowest— 5° during the nights of 23rd and 24th of December. The highest monthly range, 55° , in June; the lowest 33° , in July and September.

Yearly range 97° ; the hottest month was August; the coldest January; the mean temperature of the year was 43° , being 1° lower than that of 1863.

The highest reading of the barometer was $30^{\circ}.26$ on the 10th December; the lowest, $28^{\circ}.48$ on 22nd December. The highest monthly range, $1^{\circ}.78$ in December; the lowest, $.54$ in July. Yearly range, $1^{\circ}.78$. The mean for the year, $29^{\circ}.65$.

The most prevalent winds during the year were N.W. and S.W. The least prevalent S. and E.

Rain fell on 118 days; snow on 49; hail on 8; and fog was present on 56 days.

Aurora Boreales were visible on 54 nights; there were 16 solar, and 17 lunar halos.

Thunder storms occurred on 12th March at 8 o'clock, A. M., and at 1 o'clock, P. M.; on 31st May; 27th June, and 12th July; on the 2nd, 11th, and 26th August; on 12th and 13th September, and on 14th and 17th October. Lightning was seen, but thunder not heard, on 3rd and 12th July; on 25th September, and on 8th October. Thunder was heard, but lightning not seen, on 13th, 20th, and 23rd June.

The latest fall of snow in the Spring was on the 20th April, and in the Autumn a few flakes were observed as early as the 20th October. Fine weather predominated during the year, and the summer was remarkable for its dryness. In some places the want of rain was much felt, and, even in our abundantly supplied city, apprehensions were entertained of a failure of water, the lakes

having fallen below their usual level. There were but few heavy gales, and I may here mention that the late Judge STEWART favored me with a communication, only a few months before his death, in which he stated that he had frequently noticed that storms, which from time to time prevailed in the northern parts of this continent, extending as far south as New York, and approaching as near as Truro and Windsor in this Province, did not reach Halifax, where, while New York, Boston, St. John, and the circumjacent country were devastated, calm and fine weather prevailed. The Judge had hence assumed the hypothesis that Halifax is the centre of a storm circle, and he thought, if the attention of the government were called to the subject by this Institute, it might be induced to regard it as worthy of notice, and grant a small sum annually to be expended in obtaining from the telegraph company such daily information as would enable us to ascertain whether this view is a correct one; which, if established, would be of some importance to disabuse the world of the idea, so universally entertained, that this is pre-eminently the land of fog and storms. If an interchange of weather signals between the Smithsonian Institute at Washington and Halifax, which is now under consideration, can be accomplished, it will do much in furtherance of this object, and should the assistance of the government be required in carrying out any arrangement of this kind, it will no doubt be freely accorded.

Among several fine displays of aurora borealis, for which the past year was distinguished, one, on the night of 7th—8th of June, surpassed in magnificent beauty, extensive diffusion, and length of duration, anything of the kind I had ever before witnessed. At eight o'clock, P. M., of the 7th, a violent squall of wind from the N. W., with heavy rain, passed over the city, after which the weather became calm and cloudless. At about nine o'clock bright undulating sheets of light were first observed in the whole northern part of the sky, extending upwards beyond the zenith, and, by degrees, overspreading the heavens in the form of an immense tent, making the night as light as day. At midnight its appearance was peculiarly beautiful. Iridescent rays, darting rapidly upwards from the north, mingled together beneath the apex of this vast canopy, forming large luminous masses, which, with a rolling motion, at one time gradually faded away, only shortly to re-appear with additional

splendour. Thus it continued until about one, A. M., of the 8th, when the whole began to subside towards the north, forming an arch, which extended from east to west about fifteen degrees above the northern horizon. The arch was depressed at the centre, and luminous streamers occasionally shot up from it, till it entirely disappeared soon afterwards. The weather of the preceding week had been calm and fair, with the exception of the squall on the same evening, and two days on which there had been rain and fog. The atmospheric pressure was $29^{\circ}.73$; the temperature 45° . Two days afterwards stormy southerly weather prevailed, which I have often observed to follow the appearance of Aurora Borealis. I have been led to notice this phenomenon more particularly from having read in the Proceedings of the British Meteorological Society of November, 1864, an interesting description, by F. Abbott, Esq., of a rich and rare Aurora Australis he had observed at Hobart Town, on the evening of the 8th June, 1864. The occurrence of two such unusual appearances, at nearly the same time, in the northern and southern hemispheres, and their resemblance to each other in some of their features, struck me as being very remarkable.

On the 22nd of April a fine Parhelion was visible between five and six o'clock, P. M.

At midnight, 24th June, a bright stream of light was observed to rise vertically from the eastern horizon, gradually spreading out in its progress upwards, like the vast tail of a comet; a similar appearance occurred on the 27th September, at 7 P. M.

The following periodic phenomena will not probably be uninteresting:—

January—16th, smelts taken in Porter's Lake full of spawn.

February—7th, black and white birch bear catkins owing to the very mild weather; red maple and currant bushes in bud; 8th, moose bush buds bursting into leaf.

March—3rd, migratory thrush seen; 5th, a silver thaw; 8th, gnats and small flies appear in houses; 10th, blue jays seen; 11th, wild geese going north, and pine grosbeak about; 21st, migratory thrushes in fields; 31st, Mayflower plucked near North West Arm.

April—1st, song sparrow and blue bird seen; 2nd, white throated sparrow first heard; 5th, North West Arm frozen over

again slightly, after having been free of ice for some days; 7th, water spider on brooks; 22nd, "Camberwell beauty" butterfly flying about; gnats dancing in the air; swallows first seen; migratory thrush sings; 24th, hermit thrush first seen; 25th, frogs heard; meadows getting green, and rhubarb sprouting; 26th, poplar (*P. tremuloides*) in blossom; 30th, frog spawn in ponds; pine in new leaf.

May—2nd, red maple buds in forward state; 3rd, birch and hachmatac in bud; blue violet in blossom; 4th, brown snake first seen; 5th, wild gooseberry in leaf; 6th, gray hunting spider on stone walls; 22nd, frost occurred; 29th, apple trees in full leaf; blueberry in blossom.

June—4th, clouded yellow butterfly about; 5th, birch and red maple in full leaf; balsam poplar in leaf; dandelion in seed; 6th, pigeon-berry in blossom; buttercup in flower; 8th, Bermudiana in blossom; 9th, ash in young leaf; 11th, red spruce in flower; apple in blossom; large tiger swallow-tail butterfly about; 12th, ground juniper in flower; withrod flowers just forming; 13th, timothy grass in flower; 14th, yellow potentilla in blossom; 17th, lilac in full bloom; 18th, white weed in full bloom; 19th, ash in blossom; 21st, firefly first seen; 29th, ash in full leaf; lilac blossoms fading.

July—6th, blackberry in full bloom; withrod in blossom; 9th, timothy grass ripe; 10th, white acacia in bloom; 15th, strawberries abundant; wild rose in blossom; gad-fly abound and troublesome to cattle; 19th, brooks and watercourses dried up; cattle suffer for want of rain; 25th, cracking locust first heard; 30th, black and red spruce bear cones in abundance. During this and the succeeding month vast quantities of *medusæ* were observed floating about the harbour.

August—7th, blueberries abundant; 21st, red maple leaves turning crimson in wet places; 28th, golden rod in flower.

September—5th, Michaelmas daisy in full bloom; 9th, field cricket sings in pastures; 21st, mackerel abundant in the harbour; 22nd, maples, birch, and poplar turning colour rapidly in the forests; 23rd, blueberry leaves changing colour; pigeon-berry still in flower.

October—2nd, pine sheds its leaves; 7th, grasshoppers still about.

December—2nd, snow bunting first seen on the common; 10th, witch hazel in blossom.

By the kindness of Judge Wilkins I have had an opportunity of inspecting a register, in his possession, of observations, regularly noted three times a day, of the temperature at Halifax during the months of December and January in three successive years, from December 1809 to January 1812. With the assistance of this interesting document, I have been enabled to compare the mean temperature of these winter months, upwards of fifty years ago, with that of the same months in 1863, 1864, and 1865, and the result is as follows:—

Date.	Mean temp.	Date.	Mean temp.	Date.	Mean temp.
Dec. 1809	33°	1810	27°	1811	36°
		1863	26°	1864	27°
Jany. 1810	21°	1811	27°	1812	25°
“ 1863	30°	1864	23°	1865	22°

This tends rather to invalidate the supposition, so generally admitted, that the winters of the present time are milder than those of former years: but it would be premature to form a decided opinion upon this point without a more extended investigation, the means for pursuing which may possibly yet be found.

ART. XI. ON THE GASPEREAUX. BY J. BERNARD GILPIN,
A. B., M. D., M. R. C. S.

[Read April 6, 1865.]

Alosa Tyrannus { Gasperot (Mons. Deny, 1675,) Gaspereau.
Spring herring Blue back.
Alewife Kiack.

SHOULD any one on a warm evening of the last of April or beginning of May, stand at the mouth of any of our rocky streams, pouring their snow-swollen torrents down to join the sea, he may see, as the last of the flood tide sweeps up to meet their turbulent waters, on every jutting point, on every isolated rock, a figure with a bag net on the end of a ten or fifteen foot pole, casting his net again and again, into every little pool or whirling eddy at his feet, and returning it as often filled with one, two, or more glittering fish,