

ART. XXI.—*Abstract of a Meteorological Journal, kept at Marietta, Ohio: lat. 39°25 N. and lon. 4°28 W. of Washington City; by S. P. HILDRETH, M.D.—For 1859.—[Thirty-third annual report.]*

1859. MONTHS.	THERMOMETER.					Inches of rain and melted snow.	Prevailing Winds.	BAROMETER.		
	Mean temperature.	Maximum.	Minimum.	Fair days.	Cloudy days.			Maximum.	Minimum.	Range.
January, . . .	33°00	63	4	17	14	3·10	W., S.W.	29·85	28·95	0·90
February, . . .	37°77	62	10	10	18	7·20	S.W., & E.	29·60	28·85	0·75
March, . . .	48°48	77	25	12	19	5·08	S.E., & S.W.	29·70	28·80	0·90
April, . . .	52°03	83	28	14	16	6·46	N., & N.W.	29·60	28·85	0·75
May, . . .	67°20	90	46	21	10	1·56	S.W., & N.	29·50	29·10	0·50
June, . . .	67°23	93	33	17	13	4·62	S., W., & E.	29·70	29·20	0·50
July, . . .	74°23	102	49	23	8	1·08	E., S.E., & N.	29·73	29·20	0·53
August, . . .	72°10	95	46	15	16	4·46	S., & N.	29·53	29·30	0·23
September, . . .	63°51	86	46	12	18	4·95	S., & W.	29·70	29·10	0·60
October, . . .	49°12	79	26	17	14	2·79	S.W., & N.W.	29·65	28·85	0·80
November, . . .	45°50	72	20	20	10	2·08	S.S.W., & E.	29·85	29·00	0·85
December, . . .	30°48	71	5	12	19	5·17	N. & W.	29·75	28·80	0·95
Mean for year,	53·38					Rain 48·55 inches.				

Remarks on the seasons.—The mean temperature for the year 1859 is 53·38, which is somewhat above the average for this locality.

The amount of rain and melted snow is 48·55 inches. The average in a series of years, being forty-two inches, falling occasionally to thirty-two inches, and again rising, as in 1858, to near sixty-two inches, so that our climate is quite variable in this respect. The number of cloudy days bear testimony to the humidity of the year.

Winter.—The mean of the winter months is $37^{\circ}14$, which may be considered very mild for this latitude. The thermometer was at no time as low as zero, so that it did not make ice sufficiently thick for filling ice houses, only two or three inches being the extent of the best, and the main supply for summer use was brought from the heads of the Muskingum river. Steam boats were laid up only a few days, by the floating ice, during the winter. In the eastern states the cold was excessively severe. On the tenth of January, after a great snow storm on the eighth of that month, extending from the borders of Pennsylvania to Maine, the mercury sunk in Salem, Mass., to 23° below zero, in the city of New York to 11° below, and at Ogdensburgh, N. Y., to -38° . The extreme cold on the Atlantic coast was said to be greater than at any time during the last seventy years.

Spring.—The mean for the spring months is $55^{\circ}90$, an unusual high range, being nearly four degrees above 1858, and more than ten above 1857, that being only $45^{\circ}89$, so that there is a wide range in the temperature of our springs, which is most strikingly apparent in the blossoming of trees, especially that of the peach, there being a variation of not less than forty days in the opening of the fruit buds of this highly prized tree. The later the bloom is retarded the greater the chance for a crop, but so variable is the climate of southern Ohio, that only one season in three can be counted on for the production of this delicious fruit. The apple crop is rather more certain, and yet nearly every other year is a failure from the blighting effects of late spring frosts. But for this drawback it would be one of the most productive countries in the world in fruit, and the valley of the Ohio as celebrated pomologically as it now is for the growth of Indian corn. The unusual heat of the spring is chiefly attributable to the month of May, which was $67^{\circ}20$, or six degrees above the average temperature, which is sixty-one degrees. The heat was nearly that of June, and rarely experienced, as there is commonly a difference of ten or twelve degrees in these two months. The peach was in blossom this year on the 28th of March, and the apple on the 12th of April. In 1857 the peach opened on the 2nd of May, and the apple on the 9th.

Summer.—The mean of the summer months is $71^{\circ}19$, which is not much below the average, notwithstanding the uncommonly low temperature of June. The unprecedented occurrence of a severe and destructive frost as late as the fifth of June overwhelmed the country with fear and astonishment; at a period in the growth of wheat usually considered as past all danger of this kind, a sudden change of temperature in one night spread destruction and ruin to a large portion of the fields of this important cereal over all the central portions of the valley of the

Ohio, and extending from Iowa to northern New York. Indian corn shared largely in this calamity. The warmth of May had hastened the growth of this plant in many fields to the height of twelve or eighteen inches. In all such cases the fields had to be replanted, but where it was only a few inches above the surface it recovered from the injury, and produced a fair crop. The wheat being in full head, and much of the grain in the milk, was entirely ruined. Potatoes were badly frosted, but in a good measure regained a healthy state. Peaches and apples, which in most orchards had attained the size of almonds, were so much damaged as to fall from the trees in a few days, and only certain favored localities ripened any fruit. So serious an injury from untimely frost has not been experienced since the first settlement of the state in 1793. In the year 1834, severe frosts visited Ohio as late as the middle of May, but the wheat crop was not so far advanced, being only in blossom, and by throwing up new stalks from the uninjured roots, produced finally an abundant harvest. Providentially the autumnal frosts of 1859 were retarded until near the close of October, and the late planted fields of corn were fully matured, to the great delight and wonder of the husbandman, for the failure of this grain would be a more serious calamity than that of wheat, as both man and beast largely depend on it for sustenance.

Autumn.—The mean for the autumnal months is $52^{\circ}71$, which is rather below the average, but was sufficient to ripen all the late crops. Sweet potatoes were uncommonly good in quality, and abundant in quantity. Buckwheat was largely cultivated, partly in place of the common grain, and produced a great yield. The Catawba and other grapes ripened well, and abounded in saccharine principle, so necessary in making good wine. The smaller fruits were plentiful, so that on the whole we have more cause to be thankful, rather than to complain of the dealings of Providence in the past year.

Floral Calendar, &c.—February 25th, Bluebird heard; 27th, Yellow garden crocus in bloom; March 4th, Many birds of passage seen and heard; 9th, White crocus; 12th, *Hepatica triloba*; 14th, Golden bell or *Forsythia viridis*, *Acer rubrum*, (Red maple), *Ulmus Americana*; 16th, *Hepatica acutifolia*; 21st, Grass quite green in pastures; 22d, *Magnolia conspicua*, *Claytonia Virg.*; 26th, Red cherry, Balm of Gilead, and Sugar maple; 27th, Crown Imperial; 28th, Peach tree, Red *Pyrus Japonica*, *Hyalcinths*; 29th, *Sanguinaria Canadensis*; 31st, Gooseberry.—April 1st, June berry; 2d, Dandelion, Pink colored *Pyrus-Japonica*, Cherry and Plum, Primroses; 4th, Flowering almond, *Anemone nemorosa*; 5th, *Phlox divaricata*, *Dielytra cucul.*; 7th, *Annona triloba*, Papaw; 11th, Burgundy pear, *Trillium grandiflorum*; 12th, Double flow.-Peach, Siberian crab, *Spiraea prunifolia*, *Cercis Canadensis*, or Red bud; 13th, Apple tree;

14th, Chickasaw plum, Strawberry, *Sedum ternatum*; 17th, White ash tree; 22d, *Cornus Florida*; 24th, *Dodecatheon Amer.*; 27th, Harebell; 28th, Vernal snow drop; 30th, Tulips.—May 2d, Tree peony, var. papaw; 4th, Haw tree, *Dicentra spectabilis*; 5th, Mountain ash, *Aquilegia Canad.*; 6th, *Magnolia tripetala*, Viburnum, (Snow ball); 8th, European Horse chestnut; 10th, Rose colored peony, Yellow Harrison rose; 12th, Blackberry and Robinia *Pseudacacia*; 15th, Rose Acacia and Annual roses; 16th, *Iris Persica*, Crimson peony; 17th, Purple peony; 18th, Moss rose; 19th, White peony, also several new peonies from seed planted five years ago, bloom first time; 21st, Peas on table, planted in January; 22d, *Syringa Philadelphica*, Strawberry ripe; 24th, Bulbous Iris; 26th, Foliage of trees unusually rich and fine; 27th, Fragrant peony, and large rose colored; 28th, *Linocera flexuosa*; 30th, *Erigeron annuum*.—June 1, Star of Bethlehem; 2d, Common cherry, ripe; 5th, Severe frost, killing wheat, corn and fruit, made ice in a bowl of water, half an inch thick, a few miles west of Marietta; 12th, Canterbury bell in bloom; 19th, Red raspberry ripe; 23d, Pennsylvania lily in bloom; 27th, Wheat harvest begins in fields that escaped the frost, on high hills, or where protected by the fog from the rivers; 28th, June apple ripe.—July 5th, Chestnut tree in bloom; 8th, Sweet bough apple and Gravenstein ripe; 12th, *Gladiolus flori*; 13th, Blackberry ripe, but a large portion destroyed by frost, American broom in bloom.—August 8th, Catherine pear ripe; 13th, Watermelon ripe.—September 1, St. Michael pear; 15th, Seckel pear fully ripe.

In every month during the past year there has been more or less frost, as in the year 1816.