

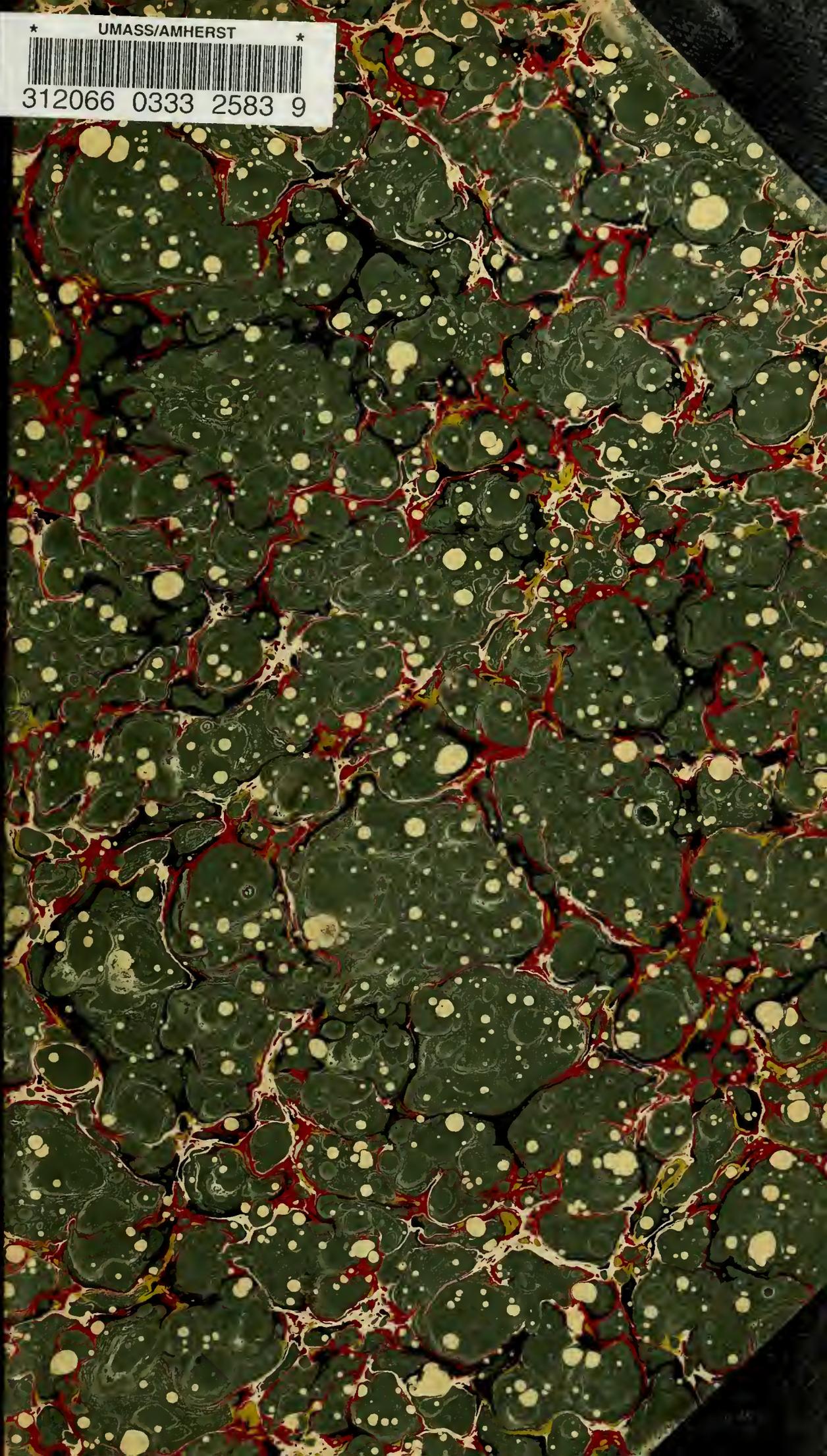
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BULLETIN No. 1.

MASSACHUSETTS
CROP REPORT

FOR THE

MONTH OF MAY, 1890.

COMPILED BY
WM. R. SESSIONS,
SECRETARY BOARD OF AGRICULTURE.

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CROP REPORT FOR THE MONTH OF MAY, 1890,

RETURNED TO THE OFFICE OF THE STATE BOARD OF AGRICULTURE,
JUNE 1, 1890.

OFFICE STATE BOARD OF AGRICULTURE,
BOSTON, MASS., June 3, 1890.

GENERAL REMARKS.

We herewith present the first bulletin of the series of crop reports for the season of 1890. The make-up of the circular sent to our correspondents for this bulletin differed somewhat from the one used last season. One side was used for general instructions to correspondents, and on the other several questions were asked and a blank space was left for general remarks. The number of our correspondents has been increased to about one hundred and twenty-five, and the State is thoroughly covered thereby. Arrangements have also been made so that this season we shall be able to give each month about two pages to material relating to the weather. The system of distribution adopted by us last season has also been changed, and this year we shall mail the bulletins directly to such individuals as request the same. Our mailing list already contains some sixteen hundred names, and we shall be glad to add to this list the names of such parties as make application for the bulletins.

It was our intention to present in this bulletin statistics relative to the culture of lettuce and cucumbers under glass, and quite a quantity of material has been collected for this purpose, but having found these industries more extensive than we expected, we think we had better take more time, that what we present may be as comprehensive and as accurate as possible. We shall therefore hold the material for

the July bulletin, and substitute in place thereof statements relative to the present condition of certain branches of agriculture as compared with past years, yield and value of some of our principal crops the past season, and other facts which we think will be both interesting and instructive.

One hundred and eleven returns have been received, samples of which will be found printed in the "Notes of Correspondents." In our choice of these notes we have endeavored to illustrate the present condition of farm work, crops and farming in general.

In order to get an idea as to the forwardness of the present season as compared with past seasons, the following question was asked: "Do you consider this season earlier than the average? If so, how much earlier?" Of the one hundred and six replies to this question forty-four state the season to be about an average one, fifty-one that it is about one week earlier than the average, and eleven that it is from a week to ten days late. The preponderance of opinion seems to be that the season is an average one in Franklin, Hampshire, Hampden, Bristol, Plymouth and Dukes counties, and earlier in Berkshire, Worcester, Middlesex, Essex, Norfolk, Barnstable and Nantucket. Without doubt grass is unusually well advanced, and fruit and potatoes are also a little earlier than usual. On account of the cold, wet weather, planting and general farm work is behindhand, and corn, beans and vegetables are backward. It is our opinion, that, taking everything into consideration, the present season is about an average one.

In order to ascertain what insects are at present causing the most trouble, this question was asked: "What insects are doing the most damage in your locality?" About the same number of replies were received, and more than three-fourths refer to the presence of the tent caterpillar (*Clisocampa Americana*). From the seemingly universal prevalence of this pest, it would appear to be full time steps were taken towards lessening the amount of damage done by it. As the wild cherry trees along the roadsides are breeding-places, it would seem that the suggestion advanced by one of the correspondents, that the granges and farmers' clubs take hold of the matter, is a good one, and that the

effect would be salutary. The Colorado potato beetle does not seem to be very prevalent yet. Some mention is made of the currant worm, asparagus beetle, canker worm, codling moth, curculio, rose bug, strawberry flea, cut worm, spit bug, squash bug and cranberry-vine worm. We would suggest that correspondents or other parties wishing information as to the names, habits or methods of destruction of insects in their localities communicate with Dr. C. H. Fernald, entomologist to the State Board of Agriculture, Amherst, Mass.

Desiring to make a comparison of the wages paid to farm help in the several counties, this question was asked: "What are the average wages paid to mature farm help per month, including board?" The following table will give the results obtained:—

COUNTIES.	No. of Replies.	Average Monthly Wages Paid.	COUNTIES.	No. of Replies.	Average Monthly Wages Paid.
Barnstable, .	3	\$19 33	Hampshire, .	9	\$18 88
Berkshire, .	8	17 63	Middlesex, .	10	21 00
Bristol, . .	6	19 66	Nantucket, .	1	18 00
Dukes, . . .	1	18 00	Norfolk, . .	4	20 25
Essex, . . .	8	20 60	Plymouth, .	16	19 33
Franklin, . .	15	19 26	Suffolk, . .	-	-
Hampden, . .	12	19 50	Worcester, .	23	20 35

These 116 replies would give an average for the State of about twenty dollars per month. This average would hold good for probably eight months, or from April 1 to December 1. Board is estimated at the rate of twelve dollars per month, which should be added to the above. The wages paid to day laborers on farms will probably average not far from one dollar and a half per day for good mature help.

Wishing to push our inquiries still further in the line of farm help, the following question was asked: "About what

portion of this help is of foreign parentage?" The following table will give the results obtained:—

COUNTIES.	No. of Replies.	Hardly any.	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{4}{5}$	$\frac{9}{10}$
Barnstable,	3	1	-	-	-	-	-	-	-	2
Berkshire,	6	-	2	1	-	1	1	1	-	-
Bristol,	6	-	-	-	1	-	1	1	1	2
Dukes,	1	-	1	-	-	-	-	-	-	-
Essex,	6	-	2	-	-	-	-	-	1	3
Franklin,	13	4	2	-	-	1	3	3	-	-
Hampden,	12	-	1	2	-	2	-	3	2	2
Hampshire,	9	3	1	-	1	-	1	1	1	1
Middlesex,	10	-	1	-	-	-	1	4	-	4
Nantucket,	1	-	1	-	-	-	-	-	-	-
Norfolk,	3	-	-	-	-	-	-	-	1	2
Plymouth,	7	1	1	1	-	-	-	2	-	2
Suffolk,	-	-	-	-	-	-	-	-	-	-
Worcester,	23	3	6	1	1	-	-	5	-	7
Totals,	96	12	18	5	3	4	7	20	6	25

In Dukes County one-half of the farm help was reported to be of foreign parentage, mostly Portuguese; in Swanzey, nine out of every ten were reported to be of the same nationality. In Ipswich, Littleton, Marshfield, Bolton and Southborough, nearly all of the farm help came from the Provinces, chiefly from Nova Scotia. In the market gardens about Boston many French Canadians are employed. In the Connecticut valley much of the farm help are natives of Poland.

In order to ascertain the feeling among our farmers concerning the outlook for them, the following question was asked: "Is the outlook in your locality as favorable for farmers as it was ten years ago?" To this question one hundred and eleven replies were received, of which forty-two state the outlook to be as favorable, nine that it is more favorable, and sixty that it is not as favorable. From the replies received, the outlook for farmers appears to be less favorable now than ten years ago in the counties of Essex, Franklin, Hampshire, Hampden and Worcester, and as favorable in the counties of Barnstable, Berkshire, Bristol, Dukes, Middlesex, Nantucket, Norfolk and Plymouth.

THE WEATHER.

Meteorological Data for May.

STATION.	TEMPERATURE. DEG. F.					PRECIPITATION.		Prevailing Wind.	CLOUDINESS. NO. OF DAYS.		
	Mean.	Maximum.	Date.	Minimum.	Date.	Total in Inches.	Days with Precipitation.		Cloudy.	Partly Cloudy.	Cloudless.
Amherst, .	56.1	79	14	32	2, 12	5.14	15	S. E.	11	14	6
Boston, .	57.0	80	14	39	2	4.48	15	S.	11	11	9
Brewster, .	55.8	76	31	34	2	3.61	11	S W.	8	3	20
*Fitchburg, .	56.7	78	14	40	2	5.54	15	W.	6	13	12
Ipswich, .	51.5	82	14	39	2	6.67	11	S. W.	16	10	5
Lawrence, .	58.6	81	31	34	3	5.52	14	S. W.	14	11	6
Leicester, .	55.6	79	24	33	2	5.57	15	S. W.	11	13	7
*Leominster, .	57.0	78	1	34	2	5.43	14	S. W.	8	17	6
*Monroe, .	52.6	74	13, 24	26	2	6.62	13	-	8	13	10
Nantucket, .	52.2	64	29	36	3	2.37	11	S W.	15	8	8
Provincetown, .	54.4	76	31	38	12	2.99	14	S.	-	-	-
Springfield, .	59.0	80	14	38	2	5.36	15	S.	8	20	3

* Temperature data from thermometer not self-registering.

Summary.

Temperature (deg. F.). — Monthly mean, 55.5° (12 stations). Highest monthly mean, 59.0°, at Springfield; lowest monthly mean, 51.5°, at Ipswich; maximum, 82°, at Ipswich, on the 14th; minimum, 26°, at Monroe, on the 2d; range, 56°; greatest local monthly range, 47°, at Amherst and Lawrence; least local monthly range, 28°, at Nantucket; greatest daily range, 38°, at Lawrence, on the 3d and 31st; least daily range, 4°, at Ipswich, on the 10th. Average temperature for May, at Springfield, for twenty-three years, 59.3°; the average for May, 1890, is 59°; departure, — 0.3°.

Precipitation. — Average (12 stations), 4.94; greatest, 6.67 inches, at Ipswich; least, 2.37, at Nantucket. Average precipitation for May, at Springfield, for forty-three years, 4.17; for May, 1890, 5.36; departure, +1.19.

Prevailing direction of wind. — Southwest.

Hail. — General on 28th.

Frosts. — Amherst, 17th, 23d; Ipswich, 3d; Monroe, 17th.

Thunder-storms. — Amherst, 14th, 28th; Fitchburg; 28th; Ipswich, 5th, 16th, 28th; Leominster, 4th, 14th, 16th; Provincetown, 4th, 5th, 15th, 16th.

Solar Halos. — Leominster, 7th, 23d.

REMARKS.

The month of May, 1890, when compared with that month in other years, has been cool and wet. Though the season opened comparatively early, it is now about a week late. The average temperature has been only slightly below the normal, but the nights have been decidedly cool, and numerous frosts have occurred. The weather of the month was influenced by the passage of twelve cyclonic areas and seven anticyclonic ones. Most of them were areas of little energy, and produced no severe atmospheric disturbances. There were exceptions to this rule, such as the heavy rains of the 4th, 6th, and 26th to 28th, and also the short but heavy rain on the 20th, and the numerous thunder and hail storms. But these latter must be considered secondaries, accompanying and influenced by the larger or primary areas. The amount of precipitation has been in excess, and has served to keep low lands almost too wet to work. The amount of sunshine has been slightly below the normal, especially in the northern section.

NOTES OF CORRESPONDENTS.

(Mailed to us May 28.)

BARNSTABLE COUNTY.

East Sandwich.—The season is very wet, and there are many cold nights. A frost the 21st did considerable damage to cranberry bogs. Very little help is employed, except by the day.

J. R. HOLWAY.

BERKSHIRE COUNTY.

Dalton.—There seems to be a tendency to raise more horses in this section. The outlook appears more favorable than ever before. The only thing to draw back is wages paid farm help; but, by using the machinery obtainable, many are doing their own work, and our market is better than ever.

W. B. BARTON.

Egremont.—The indications for farm products are fully as good now as ten years ago, and farmers are realizing the surrounding condition of things, and are curtailing their expenses to bring them within the income of the farm. This makes a great difference in their favor in the balance sheet at the end of the year.

J. H. ROWLEY.

Hancock.—The season promised to be an early one, but we have had so much rain that farm work is quite backward, and not more than two-thirds of the planting is done.

C. H. WELLS.

BRISTOL COUNTY.

Berkley.—The season thus far has been very wet, and, as a result, grass is looking very well. Early potatoes have come up badly, having rotted in the ground. Strawberry plants are looking well and promise a good crop.

R. H. BABBITT.

Mansfield. — Our grass crop is looking remarkably well, as it has been quite a wet season so far, and the prospect is good for a heavy crop of hay if the season continues favorable. It is early to tell about other crops.

D. E. HARDING.

North Dartmouth. — The weather in this locality has been so wet that it has retarded planting very much, although the latter part of April was quite favorable for seeding. Corn is not nearly all planted, and many potatoes are hardly up, owing to late planting. The average of rain has been about two rainy days a week during May.

L. T. DAVIS.

North Raynham. — There is a steady increase in the attention given to the cultivation of small fruits and in their preparation for market. Continued rains, succeeded by only now and then a bright day, have delayed farm work so that things are backward at the present time.

N. W. SHAW.

DUKES COUNTY.

West Tisbury. — Season no earlier than usual. No insects have appeared yet. Outlook as favorable for farmers as it was ten years ago. About half of the farm help are Portuguese, and eighteen dollars per month are the average wages paid to mature farm help.

WM. J. ROTCH.

ESSEX COUNTY.

Haverhill. — There is an increase here in market gardening and the milk business. Planting has been delayed somewhat by rain.

EBEN WEBSTER.

Ipswich. — The season so far has been very wet, and the grass and small grains have made a large growth; but the cold nights, and the air temperature being generally below the average, have kept corn back and retarded the growth of other crops except in favored localities.

O. C. SMITH.

Marblehead. — The abundant moisture is starting grass along rapidly, and the hay crop promises to be above the average. Ensilage corn is looking well.

WM. S. PHILLIPS, JR.

North Andover. — Milk never was more plenty. The difficulty of obtaining good farm help increases every year, and farmers in this vicinity have experienced much more trouble this year than ever. I employ two young men of American parentage, and pay them good wages and give them such a home that they are willing to stay with me year after year. I believe this is the only way that life on a farm is worth living.

PETER HOLT.

FRANKLIN COUNTY.

Conway. — It is generally admitted that farming was never more depressed than now. Farm property is depreciating in value every year. Abandoned farms are plenty all over the town, and it is impossible to sell a farm at any fair price. All kinds of farm produce are very low, but taxes and good help are higher every year.

J. C. NEWHALL.

Deerfield. — There are several acres of cucumbers raised in this vicinity, which are bought by a man in this town and made into pickles. Rye is looking well, and oats fair. Corn was planted a little earlier than usual, has come up well, and some is being hoed. Tobacco plants are looking well and are early. Grass is early and is looking well, with the prospect of an extra crop. The weather from April 1 to May 10 was fair most of the time and good for doing farm work, but it has since been very wet and rather cool.

CHARLES JONES.

Orange. — Although vegetation is forward, farm work is backward on account of the great amount of wet weather we have had, and which has rendered much of the land too wet to work.

ANSEL HARRINGTON.

Rowe. — The season seemed very early May 1, but this month has been quite wet and cold. We had a hard frost the 16th. Grass and potatoes are looking finely. Fruit trees are in full bloom and promise a large crop. I think the outlook for farmers more favorable than ten years ago. The demand for stock has increased, and at advanced prices.

J. F. BROWN.

HAMPDEN COUNTY.

Blandford. — Spring opened very early and pastures are forward, so that stock was turned out to pasture fully ten days earlier than usual and are doing well. Continued wet and cool

weather has hindered work. The season is remarkable for sudden changes of temperature. If we have one warm day, it is usually followed the next by a cool one, and in low lands by frost. Apple trees are blossomed very full.

E. W. BOISE.

Brimfield. — In Wales, four miles south, the woollen mills which have been idle for some time are starting up under new management, which is encouraging. Early potatoes are up and look well. There has been so much cold, wet weather, that seed has been slow to start when planted, and on wet lands it is not dry enough to plant yet, and hardly one-fourth of the planting has been done.

S. W. BROWN.

Tolland. — There is little help hired in this section, from the fact that a good farmer with a good farm well stocked cannot turn off enough from his farm to pay a hired man and support his family and pay his taxes. We have but few foreigners, except families that have been settled here for years.

F. T. MOORE.

West Springfield. — Frequent rains retard planting. The common farm crops rarely pay a profit, hay excepted. Garden truck is the general resort. Onions, celery, parsnips, carrots, tomatoes, cabbage and tobacco are increasing here. The old-style farmers are almost discouraged by taxes. They justly feel that the policy of the government is against them. The speculators and high-tariff men are having the advantage. Grass, rye and oats are luxuriant. All crops are looking well. I have orchard grass three feet high, that will be fit to mow about June 1. Some have hayed rye and planted corn where it grew. Strawberries are in full blossom, and promise well.

J. N. BAGG.

HAMPSHIRE COUNTY.

Belchertown. — A cold, wet May, and prospect good for a large hay crop and a fair fruit crop. Early potatoes are looking remarkably well. The acreage of potatoes planted in this vicinity exceeds by far any two previous years. Rye somewhat winter-killed.

H. C. WEST.

North Hadley. — Ten years ago I sold hay for sixteen to eighteen dollars per ton, now ten to twelve dollars. Corn was ten to fifteen

cents per bushel higher than now. The market for all vegetables is much poorer than ten years ago, owing to Southern competition. Pork sold at that time for eight to ten cents a pound, now for five to five and one-half cents. An exception might be made of tobacco, which sells as high as ten years ago. The price of nearly all farm produce has declined.

H. C. RUSSELL.

Northampton. — Our hay and beef market is not as good as ten years ago, neither is the market as good for special crops. The value of farms and farming lands has decreased more than one-third in ten years.

D. A. HORTON.

South Hadley Falls. — Farmers who are trying to plant land that is rather moist and heavy have not finished yet, and will hardly get through this week. The fruit trees have blossomed light.

H. W. GAYLORD.

MIDDLESEX COUNTY.

Chelmsford. — There has been quite an increase here in the cultivation of small fruits, but not to the extent to require much more help. There has been some frost two mornings the past week, but not severe enough to kill early vegetables. The temperature has been down to forty degrees nights much of the time, which serves to keep back early crops, although potatoes are looking quite as well as the average years.

P. P. PERHAM.

Hudson. — Our farmers have changed their system of crops and stock production, to meet the wants of our growing home markets. The production of fat cattle is next to nothing. Some are kept to procure manure more than anything else. Making pork is not profitable for our farmers. Baldwin and Porter apple trees now make a favorable show for a good crop of fruit, far better than last year.

GEO. A. COTTING.

Littleton. — The E. T. Cowdry Company have a factory near the F. R. R. station for packing canned goods. It has been in operation ten or twelve years; August, September and October are the busy months. String and shell beans, peas, apples, tomatoes and sweet corn are packed. Pickles to a considerable extent are bought and salted at this factory, giving farmers in this vicinity an opportunity to add one or more of these crops to their

dairy products. While the profits in raising milk, it being the chief dairy product here, may not be as great as ten years ago, the ready market close to our door for the sale of the crops above named makes the outlook as favorable as ten years ago.

Frequent showers during the past two weeks have given the grass crop a favorable start.

G. W. SANDERSON.

Sherborn. — The canning of corned beef is a new enterprise here, that bids fair to become something of a business, but the beef used will be largely a Western product. The outlook with us is not encouraging. Farmers lack confidence, and are not planting as largely as in previous years. Continued wet weather has a tendency to dampen the ardor and retard work. Never have known our people as a whole to feel as poor as at the present time. Our usual money crops failed last year.

N. B. DOUGLAS.

NANTUCKET COUNTY.

Nantucket. — Never saw our little island with such a good look for prosperity in the farming line as at present time; and for any young man that means business and wants to farm it, here is a chance, for the farmers here do not produce half enough to supply our summer boarders, and farms are cheap now, and the land is as good as in any county in the State.

C. W. GARDNER.

NORFOLK COUNTY.

South Weymouth. — The month of May has been colder than usual. Fruit trees and grass are fully up to the average; peas, corn, beans and other vegetables are not. Caterpillars are abundant on apple trees, and especially so on wild cherry trees.

J. G. HUTCHINS.

West Dedham. — Caterpillars are very plenty, and if every grange and farmers' club would appoint a committee in each town to take a day and go through the town and burn the caterpillars that are on bushes and trees by the roadside, I think it would be a great help to the community, for no one takes any interest in nests on highways.

S. C. FRENCH.

PLYMOUTH COUNTY.

Halifax. — We have an excess of moisture here, and farmers are very much discouraged. It is impossible to work all kinds of land except sand. Many farmers have not planted their potatoes yet, and those that have will have to do it over again.

GEO. W. HAYWARD.

Kingston. — The weather this month has been cold nights, with but few warm days and plenty of rain. From the 1st to the 11th frost most every night. A light frost the 21st, which did no damage. Farmers here are having a greater demand for home products, and the outlook is more favorable than it was ten years ago.

J. H. CUSHMAN.

Marshfield. — A few farms are being taken by people seeking quiet from the city. Stock is increasing in Plymouth County. Inland it is often kept for the ultimate purpose of improving the land and making the farm more productive. This season seems very much like the two preceding. My men are now (27th) cutting a heavy crop of orchard grass raised from kelp and sea plants and seeded four years ago.

GEO. J. PETERSON.

WORCESTER COUNTY.

Berlin. — The season has been very wet and cold, and a good deal of land at the present time is too wet to be worked. Yesterday, May 26, was the first time I ever heard a mowing machine running in May. May 16 a serious hailstorm occurred, taking a strip through our town one and a half miles wide, doing much damage to growing crops and fruit, cleaning the pear and peach trees mostly of fruit.

P. B. SOUTHWICK.

Douglas. — Grass is looking extraordinarily well for the time of the year. All kinds of fruit trees blossomed very full. Currants and strawberries have been a mass of bloom. The weather has been very wet, so planting has been done no earlier than usual. Most of us are through. All wish the weather might be drier.

GEO. M. WALLIS.

East Blackstone. — There is a gradual change here towards market gardening, and the farmer who is not a smart, keen peddler fares ill. Woonsocket, R. I., is our best market. There is no first-class farm help, such as could be had previous to 1861, for no capable, able-bodied man or woman, unless under peculiar circumstances, will do farm work for any wages which a farmer can afford to pay. A young man can get about as much, or more, pay as salesman, or apprentice to almost any trade, as he could make working for himself on a farm, with the advantages of less hours, easier work, and more agreeable society.

L. R. DANIELS.

East Templeton. — The past winter was very mild and open, not two weeks of sleighing. Fall seeding uneven, and but little done. This season favorable for grass and grain; more so than for other crops. Fruit trees are not up to the average in bloom for the even year. More corn will be planted than usual, and potatoes about the same amount. More attention is being given to gardening and to the growing of small fruits.

LUCIEN GOVE.

Fitchburg. — While the cost of labor has somewhat increased, the prices of nearly all the products of the farm have fallen. Production is in advance of consumptive demand, except for superior quality.

JABEZ FISHER.

Leominster. — This season has been rather peculiar in some respects. Fruit trees blossomed about the average time, and the prospect is very favorable for a large crop of apples, excepting Baldwins. Pears, peaches, plums and quinces very favorable for a good crop. Early planted potatoes are looking well. Corn is backward. Grass in pastures and mowing lands looks finely, and the indications point to a large hay crop. Our rainfall for May was in excess of the average for the past seven years.

W. B. HOSMER.

New Braintree. — Outlook excellent for all crops, especially grass. Fruits of all kinds promise well. The unusual amount of rain delays farm work, but is rapidly pushing all crops that are in. Dairy products are low and slow of sale.

C. D. SAGE.

AGRICULTURE IN MASSACHUSETTS.

In the crop bulletin issued by us for the month of May, 1889, was printed an article upon this subject, prepared by the Chief of the Bureau of Statistics of Labor. We have found this article to be quite valuable for reference, and think it would be very desirable to present other facts relative to the condition of this important industry.

First, we will show the number of farm animals in the Commonwealth for several decades. The figures for 1860, 1870 and 1880 are from the reports of the United States Census, and those for 1890 are from the report of the Department of Agriculture.

	1860.	1870.	1880.	1890.	Value, 1890.
Horses,	47,786	41,039	59,629	63,838	\$6,678,327
Milch cows,	144,492	114,771	150,435	*174,729	5,678,693
Other neat cattle,	135,422	104,281	110,616	98,744	2,492,663
Sheep,	114,829	78,560	67,979	56,530	190,789
Swine,	73,948	49,178	80,123	68,580	658,997

The following table will give the acreage yield and home value of some of our leading crops for the past two seasons. The figures are from the annual reports of the Department of Agriculture.

	Acres.	Quantity.	Value.
Potato crop, 1888,	35,964	3,632,000 bush.	\$1,997,800
Hay crop, 1888,	642,252	674,365 tons.	10,621,249
Tobacco crop, 1888,	2,464	3,893,000 lbs.	486,640
Corn crop, 1889,	58,209	1,997,000 bush.	1,078,147

* The assessors' returns of May, 1889, give the number of cows assessed as 192,307.

The following statistics, gleaned from a work issued in 1889 by the Department of Agriculture, entitled "Album of Agricultural Statistics of the United States," will no doubt be interesting to the readers of this bulletin, and valuable for future reference.

The area of Massachusetts is 7,800 square miles. According to the State Census for 1885, there are 3,898,429 $\frac{1}{4}$ acres of land. In the "Album" referred to, we find 34.7 per cent. of this land not in farms; 41.4 per cent. is productive lands; 19.5 per cent., woodland; and 4.4 per cent., unproductive farm area, — or a total of 34.7 per cent. lands not in farms, and 65.3 per cent. in farms. The unproductive lands include old fields, swamps, ledges, and other technically "waste" areas, most of which are susceptible of improvement or reclamation. Relative to woodlands, it should be noted that only forest lands in farm areas have ever been reported by the census. The area "not in farms" has woodlands also. Dividing the farm area, we find 26.4 per cent. is tillage lands; 37 per cent., grass lands; 29.9 per cent., woodland; 6.7 per cent., unproductive lands.

Illustrative of the value of farm lands, we find that the average value of such lands per acre is \$43.52. We also find that there are 38,406 farms in the State, of which 91.8 per cent. are cultivated by the owner, 6 per cent. by tenants paying money rental, and 2.2 per cent. are cultivated by tenants on shares.

In 1888 there were 59,397 acres of corn in the State, or 12 acres to each 1,000 acres of total land surface; and the average yield per acre was 32.1 bushels. In the same year there were 25,000 acres of oats, or 5 acres to each 1,000 acres of total land surface; and the average yield per acre was 30.4 bushels.

Concerning the value of farm animals, — horses, milch cows, other cattle, sheep and swine, — we find that the averages given are those of ten annual estimates, and not for a single year, and they represent the values upon the farms or the price paid to farmers in the primary markets. Value of horses per head, \$93.06; of milch cows, \$34.96; of cattle, exclusive of milch cows, \$34.76; of sheep, \$3.29; and of swine, \$12.41. The largest factor in difference in value in

different localities is stated to be breed; care and feed are also important causes of difference in value; and the distance from market is another consideration affecting value.

In the State Census for 1885 we find the population given as 1,942,141, and the total number of persons engaged in agriculture, including farm owners and hired farm laborers, male and female, was 77,661, these being classified as follows: farmers, 36,526; farm laborers, 35,545; other persons not included in these two classifications, 5,590. In the "Album" we find that in Massachusetts 9 per cent. of the population are engaged in agriculture, or about 175,000, which evidently includes all the members of the family. The average for the United States is 44 per cent. The only States and territories whose percentages are below 20 are Massachusetts and Rhode Island, with 9; Nevada, 13; Colorado, 13; Arizona, 15; New Jersey, 15; Connecticut, 18; and Wyoming, 18. Speaking of the small percentages in several of the States, the statistician of the Department of Agriculture says that it may be fairly assumed that this small percentage of farm workers produce half the supplies required in their States, and that 25 to 30 per cent. of all could feed liberally the entire population of the country.

We will simply add, in closing, that Massachusetts has no call to be ashamed of the position she holds; and that while to her farmers it seems as if there was little inducement to cultivate their lands, yet, when everything is taken into account, the Massachusetts farmer is quite as well off on the average as are those engaged in like pursuits in other States.

BULLETIN No. 2.

MASSACHUSETTS



CROP REPORT

FOR THE

MONTH OF JUNE, 1890.

COMPILED BY

WM. R. SESSIONS,
SECRETARY STATE BOARD OF AGRICULTURE.

BOSTON:

WRIGHT & POTTER PRINTING COMPANY, STATE PRINTERS,
18 POST OFFICE SQUARE.

1890.

CROP REPORT FOR THE MONTH OF JUNE, 1890.

COMPILED FROM RETURNS TO THE OFFICE OF THE STATE BOARD OF
AGRICULTURE, JUNE 30, 1890.

OFFICE STATE BOARD OF AGRICULTURE,
BOSTON, MASS., July 2, 1890.

GENERAL REMARKS.

Bulletin No. 2, Crop Report for the month of June, is herewith presented. The circular sent to correspondents about the 20th of the month was similar to that used for the May report.

One hundred and ten returns have been received, samples of which will be found printed in the "Notes of Correspondents." These samples are selected to give a more definite idea of the condition of farming and matters pertaining thereto than could be given by general statements emanating from this office.

In the circular sent to correspondents the first question asked was: "What insects are doing the most damage in your locality?" From the replies it is learned that the insects incident to the season are committing their depredations. The cranberry-vine worm is about as prevalent as usual, and some small bogs have been destroyed by it. However, at present the damage from it does not seem to be unusually great. Nearly all of the correspondents refer to the presence of the potato beetle, but several express the opinion that it is not as prevalent this season as usual. The onion maggot, rose bug, currant worm, squash bug, curculio, peach borer, canker worm, asparagus beetle, and the other insects that infest our crops at this season are mentioned as being on hand and doing the usual amount of damage.

Correspondents have frequently referred in their notes to the "spit bug," which has been so prevalent on grass during the past few seasons. As false ideas as to its nature and destructive powers are not uncommon, it is thought best to state the truth in the matter. The "spit bug" is a sap-eating insect, which bores into the stalks of grasses and sucks the juice therefrom in such quantities that it oozes out of their bodies continually, in the form of little bubbles, which soon completely cover up the one or more insects that may be therein. They there remain entirely buried and concealed in masses of foam, until they have completed their transformation. This foam is simply a collection of bubbles. Under ordinary circumstances, the destructive power of these insects is insignificant, and it is hardly possible that enough of them will be found on a field of grass to materially injure the crop. There is no connection between this insect and the grasshopper, or the little grub that causes June grass to die prematurely.

The following question was asked to get the opinion of the correspondents as to the outlook for the crop of Indian corn: "What is the present condition of Indian corn?" It seems to be the almost unanimous opinion that the stand of corn is fairly good, and that, though backward on account of unfavorable weather, it is now, under the influence of the warm, dry spell, pushing rapidly ahead.

To ascertain whether the hay crop is earlier than usual, the following question was asked: "What date did haying commence in your locality?" From the replies received, it is learned that some orchard grass was cut the first week in June, but haying did not become general until after the advent of the present dry weather, or between the 20th to the 25th of the month. On account of the cool, wet weather, followed by a warm, dry spell, grass has ripened somewhat earlier than usual.

The following question was asked, to ascertain the opinion of the correspondents as to the quantity and quality of the hay crop: "What is your estimate of the coming hay crop in quantity and quality?" Most of the correspondents state that the hay crop promises to be a full average one in quantity, and that as a rule the quality appears to be good.

There are some exceptions, however, but a large majority of the returns state the estimate as above.

In order to get an estimate of the probable potato crop, the following question was asked: "Do potatoes promise well, early and late?" The correspondents are almost unanimous in stating that potatoes, both early and late, promise uncommonly well. If, however, the present dry spell should continue another week, it would tend to check the development of the later varieties, and thereby materially diminish the yield. But one complaint of rot or blight has been received.

Believing that it would be of interest to the milk producers and consumers to know about what compensation the average producer receives, the following question was asked: "What was the price per quart received for milk at the door, in your locality, for May? Also, if furnished to milk contractors, what was the price received after surplus was deducted?" The replies to this question are not as complete as it was hoped they would be. The price received at the door for May, as given, varied from two to seven cents per quart. It is thought that from four to five cents per quart would be a fair average for that sold at the door. The following will illustrate the price received when sent to contractors: —

Berkley. — Retail price at door, 4 cents per quart. Contractor's price, 3 cents for May. Now it is $2\frac{1}{2}$ cents.

Danvers. — Twenty-eight cents per $8\frac{1}{2}$ quart can.

Byfield. — Two and two-seventeenths cents per quart. No surplus deducted for May, but as much sent back as was alleged to be sour. Surplus to be deducted in June.

Marblehead. — Price paid to our farmers 4 cents per quart. Retail at 7 cents. Retailer takes what he can dispose of.

Newton Upper Falls. — Seven cents per quart at retail. Wholesale, 13 to 14 cents per gallon.

Concord. — The price in this town for June is 23 cents per can at the door.

Norfolk. — Two and seven-tenths cents per quart at car. Price at door varies according to distance from station. No surplus.

Leominster. — Two and ten-seventeenths cents to peddlers for home use. To milk contractors, 17 cents at door for $8\frac{1}{2}$ quart can. The surplus for May not yet returned. Probably $1\frac{1}{2}$ cents off per can, as in April.

Harvard. — Graded price at depot, 20 cents per $8\frac{1}{2}$ quart can for May; surplus taken out by contractors, $2\frac{1}{4}$ cents; cost of getting milk to depot, from 1 to 3 cents per can, according to distance. That would leave the milk producers about 16 cents per can on a fair average, or a trifle less than 2 cents per quart at the door. Brigham & Co., Boston, grade our milk for April and July, 22 cents per can; May and June, 20 cents per can; August and September, 24 cents per can, and then take out what surplus they please.

Westminster. — Price of milk sold at the door is 5 cents per quart the year through. Contractors returned $18\frac{1}{2}$ cents per can for May.

Barre. — Sixteen cents per can at railroad station or factory. Some have to pay 1 cent for cartage, some 2 cents, according to distance.

Worcester. — Price per quart, delivered at door of purchaser, 5 cents for May. Three cents per quart is paid to the producer by the milk peddlers.

Littleton. — The milk produced in this town is sold principally to contractors for the Boston market. The price at the door for May was $2\frac{3}{10}$ cents per quart for three-fourths of the quantity sold, and for the other one-fourth of the quantity sold, $1\frac{1}{10}$ cents per quart.

Weston. — Milk in this town is sold to peddlers for 25 to 26 cents per $8\frac{1}{2}$ quart can for six months, from April to October.

Bolton. — Fifteen and seven-eighths cents per $8\frac{1}{2}$ quart can to contractors, and 5 cents per quart if retailed in the villages.

Montague. — Seventeen and eight-tenths cents per $8\frac{1}{2}$ quart can.

North Brookfield. — Milk goes mostly to Boston. Will net in June about 16 cents per can at ear.

Belchertown. — Five cents per quart to local customers. To milk contractors, delivered on cars, 20 cents per $8\frac{1}{2}$ quart can.

Hardwick. — All milk delivered at ear; and, allowing one cent per can for delivery, and taking out the surplus from the 18 cents, the price of a can of milk which holds $8\frac{1}{2}$ quarts, we find that one of these cans brings the producer the whole amount of a fraction less than 14 cents.

Wilmington. — Twenty-five cents per can of $8\frac{1}{2}$ quarts. No deduction for six months, and 30 cents per can for winter months.

West Springfield. — Two and one-half cents per quart was paid by Springfield Co-operative Milk Association. The cans hold just 10 quarts. Peddlers have paid 3 cents to farmers. Their cans hold $10\frac{1}{2}$ to $10\frac{3}{4}$ quarts, but are called 10.

Several parties having referred to the prevalence of rust on oats this season, the following from the pen of Professor Maynard of Amherst, under date of June 28, will prove of interest: —

“The common grain ‘rust’ (*Puccinia graminea*) is a very minute plant that grows and feeds upon the tissues of the leaf under conditions of continued moist, warm weather. The continued dry weather of the past two weeks will check its development, and the crops may not be seriously injured. I think it is the practice of some growers to soak the seed in a solution of sulphate of copper before sowing. We find the Bordeaux mixture entirely harmless to the most delicate foliage, while the ‘eau celeste’ or simple solution of sulphate of copper must be used with much care.”

Right here we desire to take the opportunity to state that these bulletins are prepared for the farmers, and it is our endeavor to make them as useful as possible. It is therefore hoped that farmers, and correspondents in particular, will feel free to ask questions, or seek to direct our inquiries into any particular channel. The question relative to the price received for milk, which is touched upon in this bulletin, is the outcome of a suggestion from one of our correspondents.

We shall be pleased to mail copies of these bulletins to those that ask for them; and if parties expect to receive them, and do not, they will confer a favor by notifying us, and we will endeavor to see that they receive them monthly as long as they are published.

THE WEATHER.

Meteorological Data for June.

STATION.	TEMPERATURE. DEG. F.					PRECIPITATION.		PREVAILING WIND.	CLOUDINESS. † (0 to 10) NO. OF DAYS.		
	Mean.	Maximum.	Date.	Minimum.	Date.	Total in Inches.	Days with Precipitation.		Cloudy.	Partly Cloudy.	Cloudless.
Amherst, . . .	64.6	86	30	38	3	1.48	8	S. E.	8	16	6
Boston, . . .	64.2	87	18	50	13	2.21	8	N. W.	9	13	8
Brewster, . . .	64.3	85	1	44	15	3.81	6	W.	10	1	19
*Fitchburg, . . .	62.4	85	24	46	13	1.96	8	W.	8	6	16
Ipswich, . . .	64.8	88	11	50	13	4.50	8	N. W.	13	11	6
Leicester, . . .	62.1	86	24	44	13	2.75	8	N. W.	9	14	7
*Leominster, . . .	64.9	84	11, 30	46	13	2.16	7	W.	9	11	10
*Monroe, . . .	61.7	80	25, 30	36	3	2.94	8	-	9	8	13
Nantucket, . . .	60.4	75	19	49	16	3.49	12	W.	11	8	11
Provincetown, . . .	62.8	83	25	45	10	3.46	9	N.	8	15	7
Springfield, . . .	67.6	88	25	47	3	1.83	9	S.	8	14	8
Taunton, . . .	63.0	87	25	37	3	3.60	10	-	5	12	13

* Temperature data from thermometer not self-registering.

† 0 to 3, cloudless; 4 to 7 inclusive, partly cloudy; 8 to 10 cloudy.

Summary.

Temperature (deg. F.). — Monthly mean, 63.6°. Highest monthly mean, 67.6°, at Springfield; lowest monthly mean, 60.4°, at Nantucket; maximum, 88°, at Springfield on the 25th; minimum, 36°, at Monroe on the 3d; range, 52°; greatest local monthly range, 50°, at Taunton; least local monthly range, 26°, at Nantucket; greatest daily range, 39°, at Amherst on the 10th, and at Taunton on the 1st; least daily range, 0.5°, at Ipswich on the 12th. Average temperature for June, at Springfield, for twenty-three years, 68.2°; average for June, 1890, 67.6°; departure, — 0.6°. Average temperature for June, at Boston, for twenty years, 66°; average for June, 1890, 64.2°; departure, — 1.8°.

Precipitation. — Average, 2.85; greatest, 4.50 inches, at Ipswich; least, 1.48, at Amherst. Average precipitation for June, at Springfield, for forty-three years, 3.87 inches; for June, 1890, 1.83; departure, — 2.04 inches. Average

precipitation for June, at Boston, for twenty years, 3.29 ; for June, 1890, 2.21 ; departure, — 1.08.

Prevailing direction of wind. — West.

Thunder-storms. — 4th, 5th, 6th, 7th, 11th, 12th, 13th, 25th, 26th.

Fog. — Leicester, 5th, 6th, 12th, 13th ; Monroe, 6th.

Hail. — Monroe, 5th.

REMARKS.

The weather for June, 1890, was slightly below the normal in both temperature and precipitation. During the first half of the month the weather was generally cold, with little sunshine and with precipitation above the average ; but the last half has been much warmer, with more sun and little rain. The month opened with fair weather, brisk westerly winds and cool nights but warm days. From the 4th to the 6th the heavy rain was caused by the passage of a cyclonic area down the St. Lawrence Valley, together with a secondary, which moved directly across New England from west to east. This was followed by fair weather till the 11th, when the hot southerly winds, combined with the almost unobstructed rays of the sun, carried the temperature to one of the general maxima of the month, and gave rise to heavy and in some sections frequent thunder-storms. The wind changed to north-east on the night of the 11th along the coast, and the temperature fell in some places about 30° from noon of the 11th to noon of the 12th. It continued low till the 16th ; the minimum temperature of the month occurring from the 13th to the 16th. The rain was almost continuous during that time, and in some localities in the western part of the State was the last rain during the month. But in the south-eastern part the showers were frequent, though comparatively little rain fell. High temperature occurred on the 18th, 25th and 30th, and the nights during the last two weeks of the month were much warmer than at any time of the season. The month ended, as it began, with clear skies and high temperature, though cool north-west winds.

NOTES OF CORRESPONDENTS.

(Mailed to us June 30.)

BARNSTABLE COUNTY.

Eastham. — Weather fine for all crops. Are about through cutting asparagus, and the crop was a good one, with prices extra. The asparagus slugs bothered some. Outlook for hay, corn and potato crops very good.

J. A. CLARK.

East Sandwich. — The cranberry-vine worms and potato bugs are doing the most damage. Corn is rather backward, on account of so much cold wet weather. Haying commenced about June 15, and a large crop, of fair quality, is expected. Potatoes promise well, though many pieces did not come up well. Very little milk sold, and four cents per quart is about the price.

J. R. HOLWAY.

BERKSHIRE COUNTY.

Dalton. — Oats are rusting very badly. Apples have not set as well as they promised at blossoming time. Cherries are a full crop. Outlook for Indian corn good. Promise of a large hay crop of good quality. Early potatoes are good, and late potatoes look fairly well.

W. B. BARTON.

Monterey. — Corn looks fair. Potatoes promise well. Most of our farmers patronize the co-operative creamery; others fatten calves which are not in demand. A few make their own butter, which, if very good, sells for fifteen cents per pound, if the merchant will take it at any price.

WM. S. BIDWELL.

Sandisfield. — Corn is fully up to the average of years past, but a little backward because of wet weather. In the Farmington and Clam River valleys a few commenced haying the 18th. On the hills they will not commence till July. It is estimated that the hay crop will be extra in quantity, with quality as good as usual.

Potatoes promise well. There has been little complaint as yet of potato bugs. Cut worms, wire worms and curculios do some damage, and cabbage worms are a great nuisance.

G. A. SHEPARD.

BRISTOL COUNTY.

North Dartmouth. — Field crops are rather backward, owing to cool nights and rather too much rain, although the past week has been rather warmer and dryer than the three previous ones. Hay crop a good average. Potatoes promise well. Price of milk at the door three and one-half cents.

L. T. DAVIS.

Somerset. — Lettuce is not grown under glass to any extent in this town. Oats have blasted badly. The hay crop will be more than an average. Corn is very short, owing to late planting. Potatoes promise well. Strawberries have brought good prices but the yield has not been as large as was predicted.

JOSEPH GIBBS.

DUKES COUNTY.

West Tisbury. — Indian corn an average. Haying commenced about June 20. The hay crop will be about fifteen per cent above the average. Potatoes promise well. Milk six cents per quart at the door.

WM. J. ROTCH.

ESSEX COUNTY.

Ipswich. — Corn is very backward, but is growing well now. Most farmers have been cutting hay the past week. The hay crop will be large and good. Potatoes promise well. Most farmers send their cream to the creamery. The fruit crop has been injured some by the ravages of insects. Rye and oats are making large growth, and promise large crops. The last fortnight has been warmer and free from excess of rain, and corn and garden vegetables have started into a good growth.

O. C. SMITH.

Haverhill. — Corn fair, but late on low land. Hay crop promises to be of good quantity and quality. Early potatoes promise well, and are now in full bloom. Late ones are also looking well.

EBEN WEBSTER.

Marblehead. — The present outlook is quite favorable for all crops, although growing crops are not quite up to last year's standard of corresponding date. Cool weather and much rain has not hastened them much. Hay crop promises to be above the average.

WM. S. PHILLIPS, Jr.

FRANKLIN COUNTY.

Deerfield. — Corn stands well, but is small. It has a good color, and is growing well. Oats are rusting, and it looks as though the crop would be a very poor one. Rye is forward and looking well. Tobacco stands well, and is looking as nicely as I ever saw it at this time of the year. Grass on good land is extra, but some pieces on light land are poor. All potatoes are looking well, and early ones extra. Have had good hay weather the last ten days.

CHARLES JONES.

East Charlemont. — Corn not up to the average, though looking well. The grass crop is more than an average in past years, and is ripening fast on account of the dry weather. Potatoes present a splendid appearance. The fruit crop cannot be determined by the amount of blossoms, for some trees were almost white, and at the present time have but very little fruit on them.

H. S. GILES.

Montague. — Corn is doing well at present, but has been backward all the season. Grass promises a good crop both in quantity and quality. The prospect for early potatoes was never better, but late ones I fear will be a short crop, as it is getting to be quite dry. In this section all crops would be benefited by rain.

C. S. RAYMOND.

HAMPDEN COUNTY.

Blandford. — Corn backward, but growing fast. The season opened early, but excessive moisture in the soil has at the present time made it backward. The rainfall has not been in excess, but on these hills there has been almost continuous foggy weather. The temperature has hardly averaged the usual warmth, as we have had many cool days. All crops are growing very fast. Pastures are especially good, and dairy stock are returning good yields. But the question of all is, what to do with the butter. Many are packing down, but the prospect for sale of this is not very encouraging, and all here are feeling rather blue, as this is wholly a butter section.

E. W. BOISE.

Brimfield. — Corn backward, but with warm weather may have a good crop. More grass than usual has been cut for the time of season, but it takes a large amount to weigh a ton, as there is little substance to it. Early and late potatoes promise well. Oats are rusting. But little milk sold, and that is mostly sent to Boston or to the cheese factory. On account of the loss of ice, the butter factory has been turned to a cheese factory.

S. W. BROWN.

Ludlow. — Haying is the order of the day. The crop is an average one both in quantity and quality. Oats will be a failure, owing to rust. Rye looks well, and will be ready to cut soon. Cows are beginning to feel the effects of dry weather, and milk is getting scarce. Corn is of excellent color, but short. Potato bugs are worse than usual.

C. B. BENNETT.

HAMPSHIRE COUNTY.

Belchertown. — Corn rather below the average, although the late warm days have made a marked change for the better. The hay crop promises to be a full average. Potatoes are above the average, with a large acreage, fine growth and few bugs. The week of fine weather which has just passed has seemed to give encouragement to men and crops alike. Most have finished hoeing, and are now ready for the hay field. All crops promise well except apples and oats. The oat crop blighted badly, and does not seem to recover.

H. C. WEST.

Chesterfield. — Corn is rather backward, as the weather has not been quite warm enough for a good growth. Do not think the crop of hay will be equal to last year's in quantity, as the grass is rather thin in this locality.

HORATIO BISBEE.

North Hadley. — Corn and potatoes have made a good growth up to the present date, but crops will be injured by the drouth if we do not have rain soon. Haying commenced about the 25th, with the prospect of a heavier crop than for several years. The quality is excellent, as we had no storms to lodge or injure it. Not much milk sold here, as nearly all the farmers furnish cream to the butter factories.

H. C. RUSSELL.

MIDDLESEX COUNTY.

Concord. — Corn has grown but little, on account of cold weather. The asparagus beetle is doing the most damage in this locality. Little haying has been done yet, but the hay crop promises to be above the average. Potatoes promise well.

WM. H. HUNT.

Newton Upper Falls. — Corn not as forward as usual. Hay crop promises to be heavy and of good quality. Potatoes promise a fair yield. Milk sells for seven cents per quart retail, and at wholesale for from thirteen to fourteen cents per gallon. The asparagus beetle is a new-comer with us, and feeds upon the head of the spike, and punctures the stalk to deposit its eggs. I hope other correspondents will note their observations and suggest a remedy.

OTIS PETTEE.

Wilmington. — The past week has been very favorable for corn, though but little is planted in this town. I believe this grand old crop should adorn every hillside and plain. Hay crop promises to be large and of good quality. Potatoes promise well. Our farmers complain of heavy taxation and high valuation, and they are much discouraged. The outlook for fruit is very discouraging.

C. W. SWAIN.

NANTUCKET COUNTY.

Nantucket. — Indian corn fair. Haying commenced the 26th, and the crop promises to be extra in quantity and fair in quality. Potatoes promise fairly well.

C. W. GARDNER.

NORFOLK COUNTY.

Franklin. — Corn ten days late. Potatoes promise well. There seems to be a blast on oats, and from appearances there will not be more than half a crop.

C. M. ALLEN.

Norfolk. — The warm weather of the past few days has helped corn, although it is still backward. The hay crop promises to be large in quantity and fair in quality. Both early and late potatoes are looking well at present.

J. W. HINKLEY.

PLYMOUTH COUNTY.

Campello. — Corn late. Hay crop promises to be very good, although little has been cut yet. Potatoes promise well. The season is fully a week late, owing to cold spring. The strawberry crop is very good, and those who grow them are reaping a harvest.

DAVIS COPELAND.

Halifax. — There is very little lettuce grown in this town for market. The principal crops are corn, potatoes and hay. The corn crop is backward. Early potatoes look finely, late ones are backward. The hay crop is above the average in quantity and of excellent quality.

G. W. HAYWARD.

Marshfield. — This season, like the preceding ones, is somewhat abnormal. It is humid and uncertain, and favors the production of milk and garden vegetables. Corn is a little backward. The marshes are looking well, and the general outlook is good.

G. J. PETERSON.

WORCESTER COUNTY.

Barre. — Indian corn has improved very much in the past two weeks, and is now about an average. The first two weeks of June were very wet, but the last two weeks there has been no rain, and it is very dry. Small grains are a failure on account of rust. Some pieces of grass are better than last year, some not as good; on the whole, the quantity of the crop will be about the same as last year. Potatoes promise well.

J. L. SMITH.

Bolton. — Corn very backward. The hay crop will be more than an average. It is quite dry here, although nothing is suffering, excepting seeds just put in do not germinate. No squash bugs yet, and early plants are looking well. Cabbages are looking badly, and are troubled by the maggot. Ensilage corn has started well. Potatoes are looking nicely, although some pieces have not come up well.

H. F. HAYNES.

East Blackstone. — Condition of Indian corn as good as was ever known. Hay crop large and good. Potatoes promise well, and so

far the season has been almost perfect for light soils. If some of the correspondents would give the reason why the vines of the finer varieties of squashes wilt and die about the time they come into blossom, and also a reliable remedy therefor, they would confer a great favor upon a good many.

L. R. DANIELS.

Leominster. — Corn backward, but doing finely. Potatoes promise well. Although our crops, excepting grass and potatoes, were at a stand-still last month, June has had some fine, sunshiny days, which have advanced vegetation rapidly. Oats and barley are rather inferior. Mowing lands that have been well tilled are producing very heavy crops. Apples and pears are dropping badly from the trees. Cherry trees are troubled with the aphid, which will injure the fruit. Rainfall for the month, 2.66 inches, a trifle in excess of the average for the past seven years.

W. B. HOSMER.

Worcester. — Corn, though backward, is now doing well. For two weeks we have had warm, dry weather, with more than the average amount of sunshine, and all farm and garden crops are doing well. The hay crop will be some better than the average.

S. A. BURGESS.

LETTUCE AND CUCUMBER CULTURE UNDER GLASS.

In presenting statistics relative to the culture of lettuce and cucumbers under glass, it should be stated that our facilities for collecting information of this character are not of the best, and consequently the work done by us in this line is not as complete as we would wish, but it is believed that the following will give a fairly accurate idea of the extent and importance of this branch of agriculture.

Our inquiries were extended to the culture in regular greenhouses, sash-houses and hot-bed sash, which latter are usually six feet by three in size. It was found that the culture varied with the locality and with different individuals in the same locality, and that the price received for the products varied with the quality, season of the year, state of the market, and the favorableness of the season to outdoor culture.

Lettuce is generally considered a hard crop to grow, and it requires much care. It does best on new soil and in new houses. After growing lettuce for several years it is found advisable to discontinue its culture for two or three seasons. Lettuce is affected by mildew, especially in old houses, in sash-houses and under sash. It is sometimes overcome by putting sulphur on the heating pipes, and allowing the fumes to pervade the house; sometimes by allowing the temperature in the house to fall to 32° F., and remain so over night; sometimes by steaming the house, and then thoroughly airing it; and sometimes the lower leaves of the plants are picked off, and the rest allowed to head. Tobacco smoke is generally used to destroy lice on lettuce, and sometimes the tobacco stems are steamed, and the vapor used. It is said that tobacco water will spot lettuce if it comes in contact with the leaves. The lettuce season under glass is from September to May.

The cucumber season in houses is practically the whole year round, and under sash from March to July. Under the best culture, in houses, seventy-two days elapse between the setting out of the cucumber plants and the picking of the cucumbers. When cucumbers are grown

under hot-bed sash, the sash and planks upon which they rest are usually removed about the first week in July, and the vines allowed to run. When grown in houses, the cucumber flowers are fertilized by bees, a hive of which is kept in or near the house for that purpose. The vines are affected, sometimes enough to destroy the crop, by plant lice, thrips, red spiders, black flies, timber rot, stump foot and foul soil. The best remedy for plant lice and thrips seems to be fumes from burning tobacco stems, and the odor arising from stems and dust strewn around on the ground. Too much tobacco smoke will cause the leaves to curl up. It is said that lice on cucumbers may also be destroyed by spraying with tobacco water. The red spiders may be destroyed by spraying with water, or by the use of steam. Considerable damage is done by timber rot, which frequently appears, especially in old houses, and may result from the decay of the flowers which have fallen upon the vines. It seems to be most common in cold, damp weather, in old houses. However, the nature of the trouble does not appear to be very well understood. In South Sudbury and Fitchburg some complaint was made of stump foot on cucumber and tomato vines.

On account of cold, cloudy, wet weather, the past year has been unusually bad for both lettuce and cucumbers.

In the vicinity of Boston, beets, radishes, dandelions, tomatoes and parsley are quite extensively grown as catch crops. It may be said that the culture of these several crops under glass is a paying business when good crops are obtained; but, as in other branches of agriculture, there are many failures and discouragements, and success is not easily attained.

Arlington. — There are twenty-three regular greenhouses and four sash-houses in this town, owned by twelve parties. Eighteen of these houses are heated by steam and nine by hot water. Of the growers, six use steam and five use hot water, and one has both. The greenhouses cover about 92,000 square feet, or over two acres, and the sash-houses about 8,000 square feet, or a total of 100,000 square feet. In most cases two crops of lettuce are grown, occupying the houses from September till March. Then follows a crop of cucumbers, lasting until about the first of August. In some

instances cucumbers are grown in the houses the year round. In the houses the past year it is estimated some 400,000 heads of lettuce were grown, selling for \$1.25 per dozen down, or an average of about 60 cents per dozen. It is largely marketed in Boston and New York. In these houses it is estimated 350,000 cucumbers will be grown this year, selling for from 18 cents apiece down, or an average of about 5 cents. The cucumbers are largely marketed in Boston, but when the market is crowded are shipped to New York and Chicago. But very little lettuce is grown in the sash-houses. There are also some 27,000 sash used in the culture of cucumbers, and it is estimated that the present season some 1,500,000 cucumbers will be grown in this way. Probably 20,000 of these sash were used for lettuce, under which one, two, three and in some few cases four crops of lettuce were grown. It is estimated that 1,000,000 heads of lettuce were grown in this way the past year, and that in this town during the present season, over 1,400,000 heads of lettuce and some 1,850,000 cucumbers will be grown under glass. It is expected that several more greenhouses will be erected at an early date.

Ashby. — There is one greenhouse in this town devoted to cucumber culture. It covers 900 square feet, and is heated by hot water. The vines for the first crop are planted about September 1, and last until about March 1, when the vines for the second crop are ready to take their place, and they last till about July 1. From 10 to 25 cents apiece, or an average of 16 cents, was received for the first crop, and it is estimated the second crop will average 5 cents apiece. The market is Boston. The cloudy weather the past year was the greatest obstacle to successful culture. This industry is not increasing in this locality. No lettuce is grown in greenhouses in this town.

Belmont. — There are nineteen regular greenhouses and seven sash-houses in this town, owned by eleven parties. Ten of the greenhouses and three of the sash-houses are heated by steam, and nine of the greenhouses and three of the sash-houses are heated by hot water, while one sash-house is without artificial heating apparatus. Of the growers, six use steam, four use hot water and one grower has

both. The greenhouses cover about 78,000 square feet, or nearly two acres, and the sash-houses about 20,000 square feet, or a total of 98,000 square feet. In most cases two crops of lettuce are grown, occupying the houses from September to May. The cucumber season is from January to August. In these houses it is estimated 320,000 heads of lettuce and 275,000 cucumbers were grown the past year. The price received for the lettuce ranged from \$1.25 down, and probably 60 cents a dozen would not be far from an average. The price received for the cucumbers ranged from 18 cents down, and probably 5 cents apiece would be a good average price. The market is usually Boston. There are also about 9,000 sash used in the culture of cucumbers, and about 3,000 for lettuce. Under these sash it is estimated 80,000 heads of lettuce were produced the past year, and 350,000 cucumbers. It is estimated that 400,000 heads of lettuce and 625,000 cucumbers will be grown under glass in this town the present season. These industries are increasing in this town, and several new houses are contemplated.

Fitchburg. — There are thirteen greenhouses in this city, owned by nine parties, and all are heated by hot water. Only two crops of lettuce were grown in one house the past year, the other houses being devoted to cucumbers. The lettuce crop began to mature in September, and lasted until April. Some 6,000 heads of fair quality grown, selling for from 50 cents to \$1.00 per dozen, or an average of about 75 cents. The cucumbers begin to mature in November, and last until July. About 50,000 will be grown this year, selling for from 3 to 30 cents apiece, or an average of from 10 to 14 cents. The market is largely in Boston, some in New York. No one has had entire success this year, while in some cases the failure has been nearly complete. Thrips and aphids have been unusually prevalent, and some not well understood diseases have stood in the way. All this will tend to check any increase in the business, as it has been done at a loss. Still, some new houses are contemplated.

Franklin. — There are two greenhouses in this town, covering about 3,000 square feet, and heated by hot water. No winter lettuce is grown yet. The lettuce season is from April 1 to July 1. The past season some 8,000 heads of

good lettuce grown, selling in local market for from 30 to 75 cents per dozen, or an average price of 50 cents. The cucumber season lasts from May 15 to August 15, and it is estimated that 10,000 good cucumbers will be grown, selling for from 1 to 6 cents apiece, or an average of 3 cents. There are no special obstacles and these industries are increasing gradually.

Leominster. — There are nine greenhouses in this town, covering some 26,000 square feet, and heated by hot water. The cucumbers are started in the open air the middle of August, and are transplanted to the house about the middle of September, and picking begins about the middle of October. The vines are allowed to bear as long as they will, and then are removed, and another set takes their place. It is estimated that 100,000 will be grown this year. They sold in the winter for from 20 to 23 cents apiece, or an average of about 17 cents. The market in winter and early spring is New York and Chicago, and for spring and early summer some are also sent to Boston. They are shipped pressed in bushel boxes. The black fly and thrip are the only obstacles to their culture. These industries are increasing in this locality, and it is expected several new houses will be erected soon. Cucumbers are also grown under sash in this town.

Lexington. — There is only one small greenhouse in this town in which lettuce and cucumbers are grown. It covers 1,800 square feet, and is heated by hot water. Very little lettuce is grown under glass. There are some 4,000 sash used in the culture of cucumbers. The plants are set out about April 1 and the sash removed about July 1. Dandelions, radishes, etc., are grown under the sash before the crop of cucumbers. It is estimated that 175,000 cucumbers will be grown in this town this season. Market, Boston and local.

Marlborough. — There are four greenhouses in this place, all of which are heated by hot water and covering some 10,000 square feet. The cucumber season lasts from October to July. When the vines of the first crop are through bearing, they are pulled up and other vines take their place. About 22,000 cucumbers of fair quality were grown the past

year. One grower with two houses only grows one crop of cucumbers in the fall, and then runs tomatoes. The price received ranged from 5 to 25 cents apiece, with perhaps an average of 10 cents apiece. The market is New York, Boston and home. There has been no increase in the business of late. No lettuce is grown in greenhouses, but about 15,000 heads are grown in hot-beds.

Newton. — There are twelve greenhouses in which cucumbers and lettuce are grown, covering some 55,000 square feet, and heated by hot water. Usually three crops of lettuce are grown, the first crop being started in September. After the lettuce crops are over, cucumber vines are started, and about June 1 the growers begin to pick the cucumbers. Some 200,000 heads of lettuce were grown the past season, selling for an average price of about 40 cents per dozen. It is estimated some 150,000 cucumbers will be grown; but, owing to their lateness, the average price received will hardly be over $2\frac{1}{2}$ cents apiece. The market is Boston and local.

Revere. — There are no regular greenhouses in this town, but there are three sash-houses, covering about 9,000 square feet, and heated by hot water. In two of these houses cucumber plants were set about May 20, and the cucumbers will be picked until September. About 30,000 cucumbers will be grown in the houses this season. About 4,000 sash are used for out-door culture, and it is estimated that 170,000 will be grown this year in this way. Two thousand sash were used for lettuce last winter. The plants were set December 1, and were all gone February 1. The second crop came off April 1. About 150,000 heads were grown in this way, selling for an average price of 50 cents per dozen. In one sash-house two crops of lettuce were grown, and then cucumbers. Probably 150,000 heads of lettuce were grown under glass in town, and about 200,000 cucumbers the past year. Market, Boston.

Sudbury. — There are sixteen growers in this town, largely in South Sudbury, having thirty-one houses, in which cucumbers are grown a part or all of the year. These houses cover some 46,000 square feet, and, with two minor exceptions, are heated by hot water. Usually only one crop of cucumbers is grown, and the houses are occupied

the rest of the year with beets, radishes, tomatoes, parsley and flowers. In a few instances the cucumber vines planted about the first of last October are still in bearing. It is estimated that some 150,000 cucumbers were grown in these houses the past year, selling for from 2 to 30 cents apiece. The market is Boston, sometimes New York. Red spiders, aphids, thrip, black lice and stump foot have bothered the past year. Very little lettuce is grown. Quite a large amount of tomatoes and flowers are produced. There are also some 600 sash, under which some 25,000 cucumbers will be grown. The growing of cucumbers under glass is not increasing to any extent in this town, and considerable attention is given to flowers and tomatoes.

Templeton. — There are three greenhouses in this town, covering about 5,000 square feet, and heated by hot water. Two crops of cucumbers are grown, occupying the houses nearly the entire year. The past year some 25,000 No. 1 cucumbers were grown, selling in New York and Boston markets for from 6 to 33 cents apiece, or an average of 15 cents. Also, some 2,500 No. 2, selling in home market for from 3 to 10 cents apiece, or an average of 6 cents. This industry is not increasing to any extent in this town. Thrip, white flies and green flies trouble. One crop in one house was destroyed by green flies, and the best remedy seems to be to pull up the plants, fumigate heavily with tobacco smoke, and start anew. But little lettuce is grown under glass in this vicinity, and that is started so as to be ready about June 5. Perhaps 2,000 heads are grown, selling for an average of 50 cents per dozen.

Winchester. — There are five regular greenhouses and two sash-houses in this town, owned by three parties; and, with the exception of one sash-house which is without artificial heating apparatus, all are heated by hot water. The greenhouses cover some 18,000 square feet, and the sash-houses some 6,000 square feet, or a total of 24,000 square feet. Last season some 16,000 heads of lettuce were grown in these houses, which sold in Boston markets for from \$1.25 per dozen down. It is estimated that 100,000 cucumbers were grown in these houses the past year. Also some 14,000 heads of lettuce were grown under some 400 sash, and some

2,500 sash were devoted to cucumbers, under which some 125,000 cucumbers will be produced. It is estimated that during the past year 225,000 cucumbers and 30,000 heads of lettuce were grown in this town. The price received for cucumbers has ranged from 18 cents apiece down. The market is Boston.

These industries are carried on to a small extent in many other places in the Commonwealth, among which are Allston, Brookline, Swansea, Watertown, Waltham, Framingham, Worcester, Shrewsbury, Westborough, Concord and others; but we have not had time to extend our inquiries to all places where these industries are carried on. It is estimated that in the State during the past year some 1,000,000 heads of lettuce and 1,200,000 cucumbers were grown in houses, and some 1,300,000 heads of lettuce and 2,500,000 cucumbers under hot-bed sash, or a total of 2,300,000 heads of lettuce and 3,700,000 cucumbers as the product under glass for the past year. Estimating 30 cents per dozen to be the average price received for the lettuce, would make its value about \$70,000; and estimating that the cucumbers averaged $3\frac{1}{2}$ cents apiece, would make their value \$130,000, or a total of some \$200,000.

BULLETIN No. 3.

MASSACHUSETTS
CROP REPORT

FOR THE

MONTH OF JULY, 1890.

COMPILED BY

WM. R. SESSIONS,
SECRETARY STATE BOARD OF AGRICULTURE.

BOSTON:

WRIGHT & POTTER PRINTING COMPANY, STATE PRINTERS,
18 POST OFFICE SQUARE.

1890.

CROP REPORT FOR THE MONTH OF JULY, 1890.

COMPILED FROM RETURNS TO THE OFFICE OF THE STATE BOARD OF
AGRICULTURE, JULY 29, 1890.

OFFICE STATE BOARD OF AGRICULTURE,
BOSTON, MASS., Aug. 4, 1890.

The circular for returns from which to make up this bulletin was sent to correspondents about the 20th of the month, and 107 returns were received in time to be incorporated in the report. Samples of these returns will be found printed in the "Notes of Correspondents." These samples are selected to give a more definite idea of the condition of growing crops and matters pertaining to agriculture than could be given by general statements.

In the circular sent to correspondents the first question asked was: "Has the hay crop met your expectations in quantity, and was the weather satisfactory for securing the same?" The correspondents are almost unanimous in stating that the crop of hay, now almost entirely secured, is unusually large in quantity, is generally of good quality, and that the weather for securing the bulk of it was all that could be desired. However, on account of the injurious effects of the drought on pastures and fall feed, this crop will be none too large. Even with favorable weather it is likely that rowen will be very light.

In order to obtain information relative to the apple crop, the following question was asked: "What is the prospect for a crop of apples, fall and winter?" It is the almost unanimous opinion of the correspondents that the outlook for a crop of apples, both fall and winter, is very poor. It is the even year and there was a full bloom; but, for some reason,—perhaps the extended dry spell,—the young apples have nearly all fallen off and the crop will be very light.

The following question was asked to ascertain the present condition of potatoes: "Have you observed rot or scab in potatoes?" With a very few exceptions correspondents report that rot has not yet appeared. Quite a number refer to the prevalence of scab in their neighborhood. It is estimated that the crop of early potatoes is an average one. On account of the severe drought it is doubtful if late potatoes yield even a fair average. On light land in many sections the crop is reported as very light; and the tubers, though only part grown, are ripening off. It is hoped that the general rain of the 25th and 26th and later showers will improve the prospects of this crop, but it may be that the rain has come too late.

The fourth question asked was: "Have small fruits been satisfactory in yield and price?" The replies to this question indicate that, on the whole, the yield of small fruits has been fair and the prices received good. In most sections the dry weather shortened the yield very materially of all save strawberries.

In order to ascertain whether the dry weather — which set in June 15 and lasted until the general rain of July 25, only broken at rare intervals in some few sections by light local showers — was generally injurious to farm crops, the following question was asked: "Have crops in your neighborhood suffered from drought?" The correspondents are quite unanimous in the opinion that it was injurious to potatoes, fruit, pastures, vines, garden truck, mowing lands and dairy products. It was felt most severely on light lands. In all probability its effects would have been more serious had it not been for the excessive amount of wet weather of the past two seasons, which caused the ground to be thoroughly saturated with moisture, so that, when dry weather came, there was a considerable supply in the ground; and also because of the many cool nights and consequent heavy dews during the dry period. The dry weather was favorable for corn and tobacco, except on light land, for checking rust on oats, for securing the hay crop and for harvesting rye.

It is reported that, in the market garden regions in the vicinity of Boston, there have been serious losses from the drought. Vines are backward and many fields of cucumbers

and squashes will be partial failures. Crops here have also been seriously damaged by black lice, which infest cucumbers, celery, parsnips, carrots, etc., eating the foliage from the under side and causing it to shrivel, turn yellow and die. Celery is late, but has been much improved in condition by the recent rains.

Desiring to ascertain to what extent farmers are bothered by trespassers, the following question was asked: "Are farmers in your vicinity troubled to any extent by parties trespassing upon their farms or stealing their products?" One hundred and seven replies were received to this question, of which 55 answered "Yes" and 52 "No."

In order to show in what sections of the State this trouble exists to the greatest extent, as indicated by the replies, the following table is presented:—

COUNTIES.	No. of Replies.	Yes.	No.	COUNTIES.	No. of Replies.	Yes.	No.
Barnstable, . . .	4	1	3	Middlesex, . . .	12	3	9
Berkshire, . . .	9	2	7	Nantucket, . . .	—	—	—
Bristol, . . .	6	3	3	Norfolk, . . .	4	3	1
Dukes, . . .	1	—	1	Plymouth, . . .	8	3	5
Essex, . . .	9	5	4	Suffolk, . . .	—	—	—
Franklin, . . .	14	10	4	Worcester, . . .	20	13	7
Hampden, . . .	12	7	5				
Hampshire, . . .	8	5	3	Total, . . .	107	55	52

In view of the general complaint of trespassing made by our correspondents, and the possible ignorance of some as to the present provisions of law in regard to trespass, it has been thought best to print in this bulletin the laws as they now stand on our statutes. Farmers as well as others must remember that a law will not enforce itself, and that an obsolete or ignored law is of no value. If examples should be made of some trespassers who transgress the law as it now stands they might have a salutary influence. If there is not law enough the proper means should be taken to have additions made, or to have those now on the statute book amended.

THE WEATHER.

Meteorological Data for July.

STATION.	TEMPERATURE. DEG. F.					PRECIPITATION.		Prevailing Wind.	CLOUDINESS. † (0 to 10.) NO. OF DAYS.		
	Mean.	Maximum.	Date.	Minimum.	Date.	Total in Inches.	Days with Precipitation.		Cloudy.	Partly Cloudy.	Cloudless.
Amherst, .	68.1	92	8	41	10,21	5.44	9	S.	13	14	4
Boston, .	71.0	95	31	52	21	1.93	9	S.W.	10	13	8
*Fitchburg, .	69.5	92	8	53	11	3.71	8	W.	6	12	13
Ipswich, .	72.1	97	31	53	12	0.87	4	W.	6	21	4
Lawrence, .	75.4	100	16	48	21,24	2.62	9	S.W.	5	14	12
Leicester, .	67.8	90	8	46	10	4.36	—	W.	6	16	9
*Leominster, .	71.5	90	16, 31	51	10	4.50	7	W.	5	19	7
*Monroe, .	64.1	87	1	37	10	2.62	6	—	5	14	12
Provincetown, .	70.4	94	16	54	21	1.76	7	S.	7	14	10
Springfield, .	71.8	95	8	46	21	4.69	9	S.	8	17	6
Taunton, .	69.0	94	16	41	12	1.44	8	S.W.	10	12	9

* Temperature data from thermometer not self-registering.

† 0 to 3 cloudless; 4 to 7 inclusive, partly cloudy; 8 to 10 cloudy.

Summary.

Temperature (deg. F.). — Monthly mean, 70.1°. Highest monthly mean, 75.4°, at Lawrence; lowest monthly mean, 64.1°, at Monroe; maximum, 100°, at Lawrence on the 16th; minimum, 37°, at Monroe; range, 63°; greatest local monthly range, 52°, at Lawrence; least local monthly range, 40°, at Provincetown; greatest daily range, 38°, at Taunton on the 24th; least daily range, 5°, at Ipswich on the 26th. Average temperature for July at Springfield, for twenty-three years, 73.3°; average for July, 1890, 71.8°; departure, — 1.5°. Average temperature for July at Boston, for twenty years, 70.9°; average for July, 1890, 71.0°; departure, + 0.1°.

Precipitation. — Average, 3.09 inches; greatest, 5.44, at Amherst; least, 0.87, at Ipswich. Average precipitation for July at Springfield, for forty-three years, 4.46; for July, 1890, 4.69; departure, + 0.23. Average precipitation for July at Boston, for twenty years, 3.57; for July, 1890, 1.93; departure, — 1.54.

Prevailing direction of wind. — West.

Thunder-storms. — 4th, 7th, 15th, 17th, 19th, 20th, 25th, 26th, 30th, 31st.

Hail. — Very general on 19th.

Tornado. — South Lawrence, 26th.

REMARKS.

The month of July, 1890, was characterized by a severe drought, extreme range of temperature, numerous thunder-storms accompanied sometimes by hail and high winds, and a severe and destructive tornado. The weather during the month was influenced by the passage of six cyclonic areas, and the same number of anti-cyclones, most of them well defined. Nearly all the cyclones have passed to the north of New England, and all but two of the anti-cyclones have gone to the south. It has been during the passage of the former down the St. Lawrence, thus causing a strong inflow of warm moist air from the south and south-east, that our hot oppressive days have occurred and the severe tornado and thunder-storms generated; while the low temperature and frosts which have occurred in several localities on the 10th, 19th and 21st have been due to the influence of the anti-cyclones or areas of high barometric pressure. The mean temperature and total precipitation for the month have been slightly below the average, while the amount of sunshine has been in excess. The tornado at Lawrence on the 26th was one of the most severe that has ever visited New England. Its path of greatest destruction ran through Lawrence and into the edge of North Andover, a distance of about two miles, but outside of this area much damage was done to crops and fruit and shade trees by the heavy wind and rain. The course of the tornado was nearly parallel with the Merrimack River, and 1,500 feet south of it. The damage to buildings was about \$40,000; to contents and things outside about \$20,000. Eight persons were killed and sixty-three injured.

NOTES OF CORRESPONDENTS.

(Returned to us July 29.)

BARNSTABLE COUNTY.

Eastham. — Hay crop extra and weather fine for securing it. Very poor prospect for a crop of apples. Have not observed rot or scab in potatoes. Strawberries good and good price. Potatoes badly injured by drought. No rain from the last week in June until the 17th of July. Farmers in this vicinity are not troubled to any extent by trespassers. From 1,600 to 1,700 boxes of asparagus were shipped from this place this season, netting the growers about \$4,800.

J. A. CLARK.

East Sandwich. — Hay crop met expectations in quantity. Prospect very poor for a crop of apples. The drought ripened off most of the potatoes about here, and they were not half grown. Have observed no rot or scab. The yield of small fruits is small. Corn and other crops have suffered from drought. We have been troubled considerably by gunners, but nearly all have their farms posted now.

J. R. HOLWAY.

West Falmouth. — Hay crop never was better, and the weather was very satisfactory for securing it. No apples this year. No potato rot and not much scab. Small fruits have been fair. Crops in this neighborhood suffered a very little from the drought. Not troubled much here by trespassers.

D. R. WICKS.

BERKSHIRE COUNTY.

Becket. — Hay crop a full average and weather fine for securing it. Prospect for a crop of apples very poor. Have not observed rot or scab in potatoes yet, and they bid fair to be a good crop. Small fruits have been satisfactory in yield and price. Crops in this neighborhood have not suffered from drought. Farmers here are not troubled much by trespassers.

W. H. SNOW.

Cheshire. — As far as I have been able to learn the hay crop has met expectations in quantity, and the weather was satisfactory for securing the same. The prospect for apples is not very good. Have not seen rot or scab in potatoes yet. Crops have suffered from drought. I think farmers are not troubled to any extent by trespassers; have not heard of a case this season. Fishermen seem to take the privilege and no questions asked.

L. J. NORTHUP.

Hancock. — Hay crop extra good and weather fine up to the 25th, then rainy. No fruit to speak of. Corn and potatoes are looking finely since the rain. Oats are looking much better than was expected a month ago. Have observed no rot or scab in potatoes. Farmers here are not troubled much by trespassers.

C. H. WELLS.

Sandisfield. — The grass crop is seldom better than this year, the quality being generally good and secured in the best of condition. Standing grass can be bought very low, and much on the hills remains to be cut. Apple trees bloomed and set full; but, for some reason, the apples dropped off and the yield will be small. From present appearance the potato crop will be good, and generally the tubers are smooth and sound. A few patches show signs of scab. There is little complaint of trespassing. Blackberries here are considered free plunder. Some give individuals liberty to pick huckleberries on paying twenty-five cents each for the day.

G. A. SHEPARD.

BRISTOL COUNTY.

North Dartmouth. — The past month has been very variable. Many of the nights have been cold and the days warm. The fore part of the month was dry; but now, in this locality, it is wet enough for vegetable growth. Corn is now doing finely. Potatoes suffered some when it was dry, and the crop was shortened. Very slim prospect for a crop of apples. Have observed no rot or scab in potatoes. Small fruits have not been satisfactory in yield and price. Farmers here are troubled by trespassers.

L. T. DAVIS.

North Westport. — I think the hay crop this year the largest ever known in this vicinity, of good quality, and excellent weather for curing. Very poor prospect for a crop of apples and some

orchards are nearly barren of fruit. Corn is growing rapidly, and is of good color. The potato crop promises to be fair, and have observed no rot or scab. Yield of small fruits rather small, prices good. On account of the dry weather farmers have been slow about planting turnip seed; but, with recent showers, the young plants are shooting up, reminding us that seed time and harvest shall not fail. We are troubled very much by hunters, who pull down walls and fences and leave them so. Are not troubled much by parties stealing.

A. S. SHERMAN.

Swansey. — Hay crop extra large and the weather the best for securing it ever known. The apple crop in this vicinity is a failure. I have seen no potato scab and no rot worth mentioning. The yield of small fruits has been fair and prices good. Late potatoes and sweet corn suffered from the drought. Farmers here not troubled much by trespassers.

F. G. ARNOLD.

Somerset. — The hay crop is the largest ever raised in this town and was secured in excellent condition. There will be no rowen this season. Apples are an entire failure. Late potatoes will be light. Have observed but little rot and scab. Small fruits have been satisfactory in yield and price. Corn is looking fairly well. The recent rains will start feed in pastures and save new seeded meadows. More stringent laws should be passed to prevent trespassing upon our farms.

JOSEPH GIBBS.

DUKES COUNTY.

West Tisbury. — Hay crop very large and splendid weather for securing it. The apple crop will be nearly a total failure. Very slight appearance of rot and scab in potatoes. Small fruits have been satisfactory in yield and price. Crops on light soils only have suffered from drought. Farmers not troubled to any extent by trespassers.

WM. J. ROTCH.

ESSEX COUNTY.

Danvers. — Hay crop met expectations in quantity and quality. Some potato rot in this vicinity. Apple trees blossomed full, but there are no Baldwins of any account although there are some

Greenings. Small fruits have been satisfactory in yield and price. Crops in this neighborhood have suffered from drought. Farmers are troubled by trespassers, most of whom are employees of the State Hospital.

C. H. PRESTON.

Ipswich. — Hay crop ten per cent above the average and weather never better for securing the whole crop. The drought was severe in this vicinity; only one one-hundredth of an inch of rain from the last week in June until the 25th of July. Seven-tenths of an inch fell on that day and the day following, and started garden vegetables and corn; but, I fear, came too late to start potatoes growing again, as many vines had turned yellow. The second crop of hay will be almost nothing. Produce brings good prices. The apple crop will be about one-fourth the average. A few parties find rot in potatoes, but it is not prevalent yet. Field berries have been plenty and prices good. There are always more or less who trespass on our fields and take what fruits they please when not seen. If farmers had the right to arrest trespassers and deliver them to the police I think it would stop most of the trouble.

O. C. SMITH.

Marblehead. — An extra large hay crop and secured in the best condition for years. No apple crop here. Some scab on potatoes; no rot as yet. The recent dry spell had a bad effect on crops generally. Potatoes and corn on gravelly soil have been injured considerably. Pastures were running short but the recent rains will revive them. The public think they own the farms; use them for picnic grounds, throw down walls, etc. Small fruits and apples have to be watched carefully. Several cases this year.

WM. S. PHILLIPS, JR.

Rowley. — Quantity and quality of hay good and not a drop of rain on it. There are no apples in this section. Have observed no rot or scab in potatoes. Small fruits satisfactory in yield and price. Season started all right; but the last week in June it began to get dry and we had no rain for almost four weeks, and crops on high ground suffered much. Not troubled much by trespassers, except in the fall we may lose a few squashes.

T. P. HALE.

South Byfield. — Hay crop exceeded expectations in quantity and the weather good for securing it. The apple crop will be

small. Have observed considerable scab on potatoes. Strawberries were extra, but the later small fruits suffered from drought. Trespassers without end, but little thieving; gunners singly, in squads and platoons. The worst trespassers of all are dogs, which in their efforts to get the wood-chucks do more damage than the wood-chucks can possibly; and if by any rare chance they can capture a small chuck, they summon their friends, choose the best piece of grass and daily gather to eat, fight and break down grass. The damage done in tearing down stone walls is quite a serious matter, as the cattle are apt to find the openings before we do.

G. W. ADAMS.

FRANKLIN COUNTY.

Bernardston. — An unusually fine haying season with a large crop secured. The rowen crop has had a bad set-back by the drought. Apples are few and inferior. No reports of rot or scab in potatoes. Small fruits are not plenty and prices are high. Trespassers are numerous, but not much stealing is reported. Farmers are troubled by hunters, fishermen and berry-pickers, in their season, damaging fences and crops. About one-half of the streams in town are protected by a club composed of the land-owners.

R. H. CUSHMAN.

Deerfield. — The hay crop is a good average in quantity and the quality is good. Potatoes have suffered from the dry weather, but the early ones are yielding fairly well, except on very dry land. Corn is growing rapidly with a fair prospect of a good crop. Oats that were sowed early are almost an entire failure. Tobacco is looking well; and, if the weather continues good, there will be a fine crop. Not many apples. To some extent parties hunting and fishing go through the growing crops and do some damage.

CHARLES JONES.

East Charlemont. — A very large hay crop and the weather favorable for securing it. The apple crop is a partial failure; more of the winter than of the fall varieties. No rot in potatoes; some scab. Small fruits satisfactory in price but not in yield. The drought which threatened destruction to crops and all vegetation has come to an end. The gentle rain of the 25th and 26th has thoroughly soaked the ground. The temperature has been below the average. On the morning of the 21st there was a frost

in some localities that injured vines in gardens. Fishing parties from larger places and berry-pickers intrude very much upon the farmers' rights.

H. S. GILES.

Northfield. — The hay crop is much better than for years in quality and quantity. No rain from July 3 to the 25th. The extreme dry weather injured the crop of apples very much, both fall and winter. Have not observed rot or scab in potatoes. Farmers are very much troubled by trespassers. Many appear to take it for granted that they have a perfect right to take any growing crop regardless of ownership.

CHARLES POMEROY.

Orange. — Hay crop not quite as heavy as was expected the middle of June, but the weather for securing it was very favorable. Very poor prospect for a crop of apples. Strawberries very light and raspberries an entire failure. Some pieces of potatoes must be nearly ruined, but have observed no rot or scab yet. All crops suffered very much from the drought. Farmers here are troubled somewhat by parties stealing small fruits and vegetables in the fall and by fishermen and hunters trespassing.

A. HARRINGTON.

Sunderland. — The hay crop has been good and secured in nice order. No apples, or but few, and the few very poor. Scab on potatoes prevails to some extent. The yield of small fruit was small, but fair prices were obtained. Potatoes and rowen have suffered from the drought. Trespassing and stealing are not extensive; a load or two of melons are occasionally taken.

W. L. WARNER.

HAMPDEN COUNTY.

Blandford. — Hay very extra in quantity and quality and weather more than satisfactory. Crops are generally good. Outlook poor for an apple crop, as the fruit has fallen from the trees. Stock in pastures are doing extra well. Small fruits scarce and prices good. The drought hurt pastures the worst. Farmers not troubled by parties stealing their crops, but are by city hunters and fishermen, who are a nuisance.

E. W. BOISE.

Holyoke. — Hay crop large in quantity, quality fine, and good weather for securing it. There will not be more than one-fourth

the usual crop of apples. On account of dry weather early potatoes and corn on high land suffered severely, but late potatoes on low land may be better if sufficient rain is had later on. Have observed no rot or scab. Small fruits have been satisfactory in yield and price. All cultivated crops have suffered from the drought. Farmers in this vicinity are troubled by boys from ten to seventeen years of age who steal mostly apples.

J. C. THORPE.

West Springfield. — We have never secured a heavier crop of hay or in better condition. Apples few in quantity and poor in quality. Some pieces of potatoes on dry land will not be more than half a crop on account of drought. Scab has appeared to some extent, but no rot yet. Yield of small fruits very light, excepting strawberries, and prices good. Farmers not seriously troubled by trespassers, but an occasional depredation is committed. The worst trouble is from hunters and fishermen.

T. A. ROGERS.

Monson. — Hay crop very good and weather very fine. Very few apples. Have not observed scab or rot in potatoes yet. Plums are scarce. Corn has rolled some on account of the drought, and potato vines have turned yellow. Berry pickers are plenty.

A. H. WHITE.

Wilbraham. — Quantity and quality of hay satisfactory and the weather for securing it could not have been better. Very short crop of apples. Potato scab is just appearing. Late potatoes have suffered severely from drought. Early varieties will yield a fair crop. City and village gamins seem to think that farmers' fruits and nuts are common property. Some seem possessed to encroach upon our fields and break down our fences, etc., in pursuit of fish and game.

F. E. CLARK.

HAMPSHIRE COUNTY.

Chesterfield. — Our season on and among the hills is at least ten days later than the valley and sea-shore towns. The wet and warm weather the first of the month added very materially to the hay crop which was good and was secured mainly in the two good weeks following. The prospect for apples is poor about here. Have not observed rot or scab in potatoes yet. Farmers are

troubled first by fishermen, then by berry-pickers, later by hunters and gatherers of nuts; all of whom break down our fences and frighten our cattle, some of which are hard to recover.

HORATIO BISBEE.

Enfield. — Hay crop did not meet expectations in quantity, but the weather was good for securing it. Apple crop will be light. Have observed scab on potatoes, but no rot. Small fruits have been satisfactory in yield and price. Crops have suffered very much from drought. Several of our farmers have been troubled by parties hunting and fishing, and would like to stop them. We have also been troubled by parties crossing our land with heavy teams, and by parties cutting wood and timber on our land.

D. O. CHICKERING.

Northampton. — The hay crop is hardly an average one, but the condition in which it has been secured will more than make up. Apple crop very light. Early potatoes, as well as late ones, are being injured by the drought, and early ones are showing scab. Small fruits good and good prices obtained for them. Corn is looking well, except on very sandy plain land. Tobacco stands well and some have commenced to top. There has been a good deal of complaint of parties trespassing and some arrests made in this county.

D. A. HORTON.

South Hadley Falls. — Hay crop extra heavy with all farmers who try to get the most possible from their soil, with quality good and fine weather to harvest it. Rye above the average. Oat crop very poor, probably none getting over half a crop, while with others it is nearly a total failure. All other crops have suffered more or less from drought, but the copious rains of the 25th and 26th have made farmers rejoice again. Apples will not be over a fourth of a crop. Have observed no rot or scab in potatoes. Farmers are troubled to some extent by trespassers; more Sunday than any other day.

H. W. GAYLORD.

Southampton. — Hay crop heavy and secured in the best of condition. Probably both fall and winter apples will be failures. The dry weather affected the growth of corn and potatoes. The early crop of potatoes was very good, but some of the late ones on light land have wilted and turned yellow. The rowen crop

looks like a failure, but the recent rains have improved it very much. Tobacco is looking finely. Farmers here are not troubled by trespassers.

C. B. LYMAN.

MIDDLESEX COUNTY.

Concord. — Quantity and quality of hay first rate and weather never better. There will be a small crop of apples, as they are dropping badly. Have not observed rot or scab in potatoes. Strawberries were satisfactory in yield and price, but raspberries not. Crops are not suffering now from dry weather. We had abundant showers the 25th and 26th.

W. H. HUNT.

Framingham. — The hay crop better than last year and weather satisfactory. The season has been very favorable as a whole; and I think the outlook, except for fruit, is good. Apples are poor, and have mostly fallen off. Corn rolled up badly on account of the drought, but the recent rains brightened up vegetation, and crops are now looking better. No rot or scab yet. Yield of small fruits fair and prices good. Farmers here not troubled much by trespassers.

H. S. WHITTEMORE.

Lexington. — Good crop of hay and fine weather for securing it. Not any apples in this locality. Have not observed rot or scab in potatoes. Small fruits, a fair crop and prices good. The rowen crop in this locality will be very light indeed. Farmers here not troubled much by trespassers.

A. F. HITCHINGS.

Littleton. — Hay crop met expectations in quantity. Apple crop promises to be very poor. Have not observed rot or scab in potatoes. The dry weather injured the yield of small fruits to a considerable extent, but prices have been good. Late potatoes and berries have suffered most from the drought. Farmers here are troubled but very little by trespassers.

G. W. SANDERSON.

Marlborough. — Hay crop more than met expectations, and the weather was very good for securing it. The apple crop will be very light. Have not observed rot or scab to any extent in potatoes. Yield of small fruits light and prices good. At this season our pastures are full of berry-pickers, although many have signs up. There seems to be a tendency towards stealing where there are desirable fruits, especially near the town.

C. S. HOWE.

NORFOLK COUNTY.

Franklin. — Quantity of hay heavy, quality good and fine weather for securing it. Prospect of less than an average crop of apples. Only a trace of rot and scab in potatoes. Small fruits have been satisfactory in yield and price. Crops have suffered from the drought. There is always trespassing and stealing, especially fruit; and I think we need a law making the owner or occupant of the land an officer so far as to arrest parties on his own premises.

C. M. ALLEN.

Medway. — Hay crop heavy, except on very moist land where the better grasses were drowned the past two wet seasons, and it has been harvested in excellent condition. The prospect for a crop of apples is very poor. Yield of strawberries fair. Raspberries and blackberries need rain. Prices good. At the present time crops are suffering much from drought. Trespassing is very troublesome and hard to stay. Notices seem to do no good. There is some thieving. I do not think farmers should be required to post notices warning persons from their fields. The fact that a person is not the owner of a field should place him under legal obligation to keep out of it, except with leave from the owner. The damage from trespass on my land has been chiefly from lawless persons passing through and breaking fences.

M. MORSE.

Norfolk. — Quantity of hay more than met expectations, and weather very satisfactory for securing it. Apple crop will be rather below the average, as they have fallen off badly. Have not observed rot or scab in potatoes. Rain the 25th and 26th saved corn and late potatoes from total destruction. Mowings and pastures were very brown and dry. Farmers not troubled much by trespassers, except by summer boarders.

J. W. HINKLEY.

South Weymouth. — Hay crop met expectations in quantity, and weather favorable. Poor prospect for an apple crop. Have observed no rot or scab in potatoes. Strawberries only were satisfactory in yield and price. The long drought was bad for fall crops, though the quite heavy rain that fell the 25th, 26th and 9th may revive some of them.

J. G. HUTCHINS.

PLYMOUTH COUNTY.

East Wareham. — Very large crop of hay, excellent in quality and well secured. No apples. Fair crop of strawberries and good price. Birds take the raspberries and currants and first strawberries. Robins are very abundant here and do more injury than all the other birds put together. Farmers not much troubled by native residents, but are much troubled by transient shore visitors, who seem to think that they have a right to go where they please and take what they want. There seems to be an impression among many people that they have a right to go to the shore in any way they please and there do what they please without any regard to the rights of the adjacent land-owner, which rights are indefinitely defined in our statutes; and, unless some better protection than owners now have is given, shore property will lose much of its value.

A. SAVARY.

Halifax. — We have housed one of the largest hay crops ever grown in this town and in the best order. No rain to do any good to crops for more than six weeks until the 26th. There is no prospect of an apple crop. No rot or scab in potatoes yet. Small fruits very satisfactory.

G. W. HAYWARD.

Hanson. — Hay crop met expectations in quantity, and the weather was satisfactory for securing it. Poor outlook for a crop of apples. The potato tops have died, and farmers are digging potatoes, getting about one-third a crop, and small at that. Have observed very little rot or scab. Small fruits have been fair in yield and price. All crops and grass lands are suffering intensely from drought. It is very hard on young trees. If it does not rain soon, late crops will be failures. Farmers not troubled much by trespassers.

F. S. THOMAS, M.D.

Kingston. — English haying about finished, and the quality of the crop is excellent. We are having a long drought, with but one dash of rain for five weeks, and pastures and crops are suffering a great deal. Prospect for all apples is very poor. Potatoes are looking sound and smooth. Small fruits badly burned and poor. Farmers here have very little or no trouble with trespassers.

J. H. CUSHMAN.

Marshfield. — Quantity of hay larger and quality better than was expected, and fine weather for curing it. Have not seen or heard of any rot or scab in potatoes. The strawberry crop was

large and fine. Crops have suffered exceedingly from drought, and springs are very low. Prospect for a crop of apples is poor. Farmers are troubled by trespassers, and along these shores the trouble is increasing.

G. J. PETERSON.

WORCESTER COUNTY.

Bolton. — The yield of hay has been large and quality excellent, with the weather very favorable for securing the crop. Very few apples in this section. Strawberries were very good. The drought in this locality has been very severe, but was broken by a heavy rainfall the 25th. A tornado passed through the northerly part of the town Saturday, the 26th, at about nine o'clock in the forenoon, mowing a swath about forty rods wide. It cut through the woods like a scythe in the grass. Some chimneys were blown down, but no one hurt that we have heard of.

H. F. HAYNES.

Douglas. — Hay crop more than an average and good weather all through haying. About half a crop of apples may be expected, and those that remain on the trees are fair and of good size. No potato rot but some scab. Yield of small fruits not very good and prices high. Crops very much injured by drought, as the weather was very hot and dry up to the 25th, when a heavy rain storm set in. We are troubled very much by trespassers and wish the law might be more strict.

GEO. M. WALLIS.

East Templeton. — Hay crop exceeded expectations in quantity and was secured in the best possible condition. A light crop of both fall and winter apples and also pears. Have not observed rot or scab in potatoes. The crop of early potatoes was light. Small fruits have not been satisfactory in yield and price. The month has been dry; a light rain the 3d and 4th; no more until the 19th, when we had a shower with hail; a heavy rain the 25th and 26th. The hail did no damage. Hottest the 17th, — 92°; coldest the 10th, — 44°. A frost on low lands the 21st. Feed short, fields brown, no rowen, corn normal. Farmers are troubled by berry-pickers and hunters with dogs. This is the case in nearly all large towns and is a great annoyance. Why are farmers compelled to post notices in order to protect their property more than merchants and manufacturers? Dogs are property; why not restrain them the same as cattle or poultry?

LUCIEN GOVE.

Fitchburg. — Quantity of hay, all that was expected and not a forkful injured. With the exception of Hubbardstons, should say one-eighth of an even year's crop of apples. Hubbardstons look like half a crop. It looks a little like a total change of the bearing year to the odd figure. Small fruits shortened in yield by dry weather; prices fair. Garden vegetables considerably injured by drought; trees and grape vines very little or none. Farmers in this vicinity are troubled by trespassers. The great public seems to feel that all uncultivated products are free and draw the line at cultivation rather loosely.

JABEZ FISHER, M.D.

Leominster. — Hay crop met expectations and was probably secured with the least labor and expense for years. Apple crop almost a failure; more fall apples than winter. No rot or scab in potatoes. Yield of small fruits light; prices very good. On account of the drought early potatoes will be a light crop. Since our heavy fall of rain late planted will do better. Corn stands a good chance of being an average crop. Mowing lands have changed from their brown appearance to a dark green. Peach trees in this vicinity look well and there will be a good crop. Cases occur where unruly persons perplex the farmer. Gardens near the village suffer most. The shooting on farms is very objectionable to most farmers.

W. B. HOSMER.

North Brookfield. — Hay crop extra large, of excellent quality and well secured. Apples nearly a failure and the crop will be the smallest for many years. All crops have suffered from drought, which was broken by a fine rain the 25th. Farmers have had much trouble from trespassers and many have posted trespass notices on their land, and the nuisance has somewhat abated since.

C. D. SAGE.

Southborough. — Hay crop much above the average and secured in excellent condition. Apple trees blossomed full but the fruit has nearly all dropped off, and the crop in this town will be the smallest for many years. Have not observed rot or scab in potatoes. All crops need rain. Potatoes not planted early suffer badly on dry ground. Corn is late, but looks well except on light land. Boarding school boys rob a great many birds' nests and cut holes in trees to get at them.

E. F. COLLINS.

STATUTE LAWS RELATING TO TRESPASS.

The legal definition of trespass, according to chapter 179, sections 9 and 10, of the Public Statutes, is: "An unlawful act committed with violence, either actual, or implied by law, to the person, property, or relative rights, of another."

OF OFFENCES AGAINST PROPERTY.

[P. S., Chap. 203.]

SECT. 5. Whoever wilfully and maliciously burns or otherwise destroys or injures a pile or parcel of wood, boards, timber, or other lumber, or any fence, bars or gate, or a stack of grain, hay, or other vegetable product, or any vegetable product severed from the soil and not stacked, or any standing tree, grain, grass, or other standing product of the soil, or the soil itself, of another, shall be punished by imprisonment in the state prison not exceeding five years, or by fine not exceeding five hundred dollars and imprisonment in the jail not exceeding one year.

SECT. 27. Whoever by a trespass, with intent to steal, takes and carries away anything which is parcel of the realty or annexed thereto, the property of another and of some value, against his will, shall be guilty of such simple or aggravated larceny as he would be guilty of if such property were personal property.

SECT. 28. Any person may become an accessory to such larceny before or after the fact, or a receiver of the property stolen, in like manner as if the property stolen were personal, and shall be punished accordingly.

SECT. 53. Whoever wilfully, mischievously, and without right takes or uses a boat or vehicle, or takes, drives, rides, or uses a horse, ass, mule, ox, or any draught animal, the property of another, without the consent of the owner or other person having the legal custody, care, or control of the same, shall be punished by fine not exceeding three hundred dollars, or by imprisonment in the house of correction for a term not exceeding six months; but this section shall not apply to a case where the taking of the property of another is with the intent to steal the same, or where it is taken under a claim of right, or with the presumed consent of the owner or other person having the legal control, care, or custody of the same.

SECT. 83. Whoever wilfully or maliciously destroys, injures, defaces, or mars a dwelling-house or other building, whether upon the inside or outside, shall be punished by imprisonment in the jail not exceeding sixty days, or by fine not exceeding fifty dollars.

SECT. 86. Whoever wilfully, maliciously, and without right or license, cuts, injures, mars, or otherwise damages or destroys ice upon waters from which ice is or may be taken as an article of merchandise, whereby the taking thereof is hindered or the value thereof diminished for that purpose, shall be punished by fine not exceeding one hundred dollars.

SECT. 93. Whoever wilfully and maliciously kills, maims, or disfigures any horse, cattle, or other beast of another person, or wilfully and maliciously administers poison to or exposes any poisonous substance with the intent that the same shall be taken or swallowed by any such beast or beasts, shall be punished by imprisonment in the state prison not exceeding five years, or by fine not exceeding one thousand dollars and imprisonment in the jail not exceeding one year.

SECT. 94. Whoever wilfully commits a trespass by cutting down or destroying timber or wood standing or growing on the land of another, or by carrying away any kind of timber or wood cut down or lying on such land, or by digging up or carrying away stone, ore, gravel, clay, sand, turf, or mould from such land, or roots, fruit, or any plant there being, or by cutting down or carrying away sedge, grass, hay, or any kind of corn, standing, growing, or being on such land, or by carrying away from a wharf or landing-place any goods whatever in which he has no interest or property, without the license of the owner thereof, shall be punished by imprisonment in the house of correction not exceeding six months, or by fine not exceeding five hundred dollars.

SECT. 95. Whoever wilfully and maliciously or wantonly and without cause cuts down or destroys, or by girdling, lopping, or otherwise injures a fruit or other tree, not his own, standing or growing for shade, ornament, or other useful purpose, or maliciously or wantonly breaks glass in a building not his own, or maliciously breaks down, injures, mars, or defaces a fence belonging to or enclosing lands not his own, or maliciously throws down or opens a gate, bars, or fence and leaves the same down or open, or maliciously and injuriously severs from the freehold of another any produce thereof or anything attached thereto, shall be punished by imprisonment in the house of correction not exceeding six months, or by fine not exceeding five hundred dollars.

SECT. 96. Whoever wilfully and maliciously enters an orchard, nursery, garden, or cranberry meadow, and takes away, mutilates, or destroys a tree, shrub, or vine, or steals, takes, and carries away any fruit or flower, without the consent of the owner thereof, shall be punished by fine not exceeding five hundred dollars, or by imprisonment in the house of correction not exceeding six months.

SECT. 97. Whoever wilfully commits a trespass by entering upon the orchard, garden, or other improved land of another, without permission of the owner, and with intent to cut, take, carry away, destroy, or injure the trees, grain, grass, hay, fruit, or vegetables there growing or being, shall be punished by imprisonment in the house of correction not exceeding six months, or by fine not exceeding five hundred dollars; and if any offence mentioned in this section or section ninety-four is committed on the Lord's day, or in disguise, or secretly in the night time, the imprisonment shall not be less than five days, nor the fine less than five dollars.

SECT. 98. Whoever, having the charge or custody of sheep, goats, cattle, horses, swine, or fowl, wilfully suffers or permits them to enter on, pass over, or remain on any orchard, garden, mowing land, or other improved or enclosed land of another, after being forbidden in writing

or by notice posted thereon by the owner or occupant thereof, or by the authorized agent of such owner or occupant, shall be punished by fine not exceeding ten dollars.

SECT. 99. Whoever between the first day of April and the first day of December wilfully enters on or passes over or remains on any orchard, garden, mowing land, or other improved or enclosed land of another, after being forbidden by the owner or occupant thereof, or by the authorized agent of such owner or occupant, either directly or by notice posted thereon, shall be punished by fine not exceeding twenty dollars; and such fine shall not be less than five dollars if the offence is committed on the Lord's day. (Amended.)

SECT. 100. A person found in the act of committing the trespass described in the preceding section may be arrested by a sheriff, deputy sheriff, constable, watchman or police officer, and kept in custody in a convenient place, not more than twenty-four hours, Sunday excepted, until a complaint can be made against him for the offence, and he be taken upon a warrant issued upon such complaint.

SECT. 104. Whoever is discovered in the act of wilfully injuring a fruit or forest tree or committing any kind of malicious mischief on the Lord's day may be arrested by a sheriff, deputy sheriff, constable, watchman, police officer, or other person, and lawfully detained by imprisonment in the jail or otherwise until a complaint can be made against him for the offence, and he be taken upon a warrant issued upon such complaint; but such detention without warrant shall not continue more than twenty-four hours.

SECT. 107. Whoever between the first day of April and the first day of October sets fire to a coal pit or pile of wood, for the purpose of charring the same, on any woodland in either of the cities or towns of New Bedford, Dartmouth, Fall River, Freetown, Fairhaven, Middleborough, or Rochester, shall forfeit one hundred dollars.

SECT. 108. Whoever between the times aforesaid sets fire to any brushwood or bushes on any part of such woodland or on land adjoining thereto, so as to cause the burning of such brushwood or bushes, shall forfeit fifty dollars.

SECT. 109. All forfeitures under the two preceding sections may be recovered, one-half to the use of the town in which the offence is committed, and the other half to the use of whoever sues therefor.

ON INLAND FISHERIES AND KELP.

[P. S., Chap. 91.]

SECT. 11. The fishery of any pond, the area of which is more than twenty acres, shall be public, except as hereinafter provided; and all persons shall, for the purpose of fishing, be allowed reasonable means of access to the same, without rendering themselves liable to an action for trespass.

AN ACT TO PROTECT GAME, AND TO PROTECT PRIVATE
LANDS FROM TRESPASS.

[Acts of 1884, Chap. 308.]

SECTION 1. Whenever the owner of any land shall conspicuously post on the same, notices that shooting or trapping is prohibited thereon, it shall be unlawful for any person to enter upon such land for the purpose of shooting or trapping without permission of the owner thereof.

SECT. 2. Game artificially propagated and maintained upon lands, posted as above, shall be the exclusive property of the party propagating and maintaining the same, but such person shall not sell such game for food at seasons when its capture is prohibited by law.

SECT. 3. Whoever offends against any of the provisions of this act shall be punished by fine not exceeding twenty dollars. [*Approved June 2, 1884.*]

AN ACT FOR THE BETTER PROTECTION OF LAND-OWNERS.

[Acts of 1890, Chap. 403]

SECTION 1. Whoever, without right, enters upon the land of another with fire-arms and with intent to fire or discharge the same thereon, and who, after being requested by the owner or occupant of said land, or by the authorized agent of such owner or occupant, to leave said land, continues to remain thereon, shall be punished by fine not exceeding two hundred dollars or by imprisonment not exceeding two months, or by both such fine and imprisonment.

SECT. 2. Whoever shall wilfully tear down, remove or deface any notice posted on land by the owners, lessee or legal custodian thereof, warning persons not to trespass on the same, shall be punished by fine not exceeding twenty-five dollars. [*Approved June 11, 1890.*]

AN ACT RELATING TO TRESPASS UPON REAL ESTATE.

[Acts of 1890, Chap. 410.]

Section ninety-nine of chapter two hundred and three of the Public Statutes is hereby amended so as to read as follows: Whoever without right enters upon or remains on or in the dwelling-house, buildings or improved or enclosed land of another, after being forbidden so to do by the person having the lawful control of said premises, either directly or by notice posted thereon, shall be punished by a fine not exceeding twenty dollars. [*Approved June 13, 1890.*]

BULLETIN No. 4.

MASSACHUSETTS
CROP REPORT

FOR THE

MONTH OF AUGUST, 1890.

COMPILED BY

WM. R. SESSIONS,
SECRETARY STATE BOARD OF AGRICULTURE.

BOSTON:

WRIGHT & POTTER PRINTING COMPANY, STATE PRINTERS,
18 POST OFFICE SQUARE.

1890.

CROP REPORT FOR THE MONTH OF AUGUST, 1890.

COMPILED FROM RETURNS TO THE OFFICE OF THE STATE BOARD OF
AGRICULTURE, AUGUST 28, 1890.

OFFICE STATE BOARD OF AGRICULTURE,
BOSTON, MASS., Sept. 3, 1890.

Bulletin No. 4, Crop Report for the month of August, is herewith presented.

About the usual number of returns were received in time to be incorporated in the report, samples of which will be found printed in the "Notes of Correspondents." These samples are selected to give a more definite idea of the condition of crops and matters pertaining to agriculture than could be given by general statements.

In the circular to correspondents the first question asked was "What is the outlook for the rowen crop?" The replies indicate that grass lands were seriously injured by the drought, and that, notwithstanding abundant later rains, the crop of rowen as a whole will be only fair at best. On low, wet and clover lands the crop may prove to be an average one. Pastures and fall feed have been much improved by recent rains.

In order to obtain information relative to the outlook for the corn crop the following question was asked: "Do you think the corn crop will be a full average?" The majority of the correspondents state that, if frosts hold off, the crop of Indian corn will be a full average. It is somewhat late, but has been growing finely during the past month.

For information concerning late potatoes this question was asked: "What is the outlook for a crop of late potatoes?" The replies indicate that, although this crop has been injured by the drought and in some sections will be light, on the whole it promises to be nearly a fair average. Blight and rot are not reported as being prevalent.

For information concerning these obstacles to successful potato culture the question was asked: "If potato rot has appeared in your vicinity, state date when first noticed; also state date when the blight came." Correspondents in Douglas, Leominster, North Orange, Barre, South Byfield and Ludlow reported no rot yet, but that the blight appeared about August 15. Correspondents in Enfield, Harvard, Sandisfield, Tolland, East Charlemont, North Westport, Monterey and Pelham reported rot between the 1st and 26th of August and blight between the 6th and 15th of August. From Worcester blight was reported as appearing July 18 and rot about August 15.

Professor Humphrey of the State Experiment Station reports that several specimens sent to him as blight turned out to be simple withering caused by drought.

As bearing upon this subject the following is condensed from the report of the section of vegetable pathology, United States Department of Agriculture, 1888:—

The potato rot (*Phytophthora infestans*) probably originated in South America, whence it was brought to this country about the year 1840. Since that time it has been the cause of very serious losses to farmers, and in years favorable to the disease has swept away nearly the entire crop. No variety has yet been discovered that has remained free from the disease under all circumstances, although in some localities some varieties are more resistant than others. The fungus attacks the stems and leaves as well as the tubers. On the leaves pale yellowish spots first indicate the presence of the disease; these very soon turn brown, and, if the weather be warm and damp, rapidly blacken. The stems may be attacked directly or the disease may reach them through the leaves. If infected tubers are stored the rot will progress in the cellar and healthy tubers may be infected by those already diseased. Moisture and a moderately high temperature are the conditions which favor rot. It is also generally conceded that stable or barn-yard manure, especially if used fresh, favors the rotting of the tubers. Treatment must be preventive. Potatoes used for seed should be perfectly sound. When possible a light and thoroughly drained soil should be selected for the crop. If the weather conditions favor the disease, the vines must be protected by the application of fungicides. Preference is given to the Bordeaux mixture. Apply when there is no wind and the plants are wet with dew. Begin before the blight makes its appearance. While digging the crop the tubers may become infected, as they are taken from the ground, by spores from the decaying tops; hence care is requisite. Potatoes should be entirely free from

moisture when stored. Dusting the tubers with air-slaked lime (1 bushel of lime to 25 bushels of potatoes) before storing is strongly recommended; it will do much towards preventing the rot.

For the information of parties interested the following formula is inserted:—

Copper Mixture of Gironde or Bordeaux Mixture.

- A. Dissolve six pounds sulphate of copper (blue stone) in sixteen gallons water.
- B. Slake four pounds quick-lime with six gallons water.
- C. When cool, mix A and B, stirring thoroughly.

Relative to late cabbages this question was asked: “What is the outlook for late cabbages?” This crop was generally reported as promising well though somewhat later than usual.

To ascertain relative to the cranberry crop it was asked: “What is the outlook for the cranberry crop?” The replies indicate that on the whole this crop promises to be less than an average, owing to late frosts, drought and injury by insects. It is expected that the crop on the Cape will be less than last year, but in Bristol and Plymouth counties the crop promises to be about as large as last year.

There are a few apple orchards which promise remunerative crops, but, generally speaking, apples will be scarce and prices should rule high.

The tobacco crop in the Connecticut Valley is unusually large, of excellent quality and mostly harvested in good condition.

The market gardens about Boston have improved greatly in appearance since the last report. Celery is of good color, and, though late, is doing well. Vines have greatly improved.

Having decided to make this issue a “grape bulletin,” the following questions were asked: “Has grape culture in your town increased in the past five years?” and “What is the outlook for this year’s crop of grapes?” With few exceptions the correspondents state that grape culture in their towns has not increased in the past five years and that this year’s crop will be only fair at best.

In addition a special circular on this subject was prepared and sent to towns in which this industry is most largely carried on.

The results obtained will be found incorporated in the article entitled “The Grape Industry in Massachusetts,” printed in the last part of the bulletin.

Copies of this report and those that have preceded it will be mailed upon application.

THE WEATHER.

Meteorological Data for August.

STATION.	TEMPERATURE, DEG. F.					PRECIPITATION.		Prevailing Wind.	CLOUDINESS. † (0 to 10.) No. of Days.		
	Mean.	Maximum.	Date.	Minimum.	Date.	Total in Inches.	Days with Precipitation.		Cloudy.	Partly Cloudy.	Cloudless.
Amherst, .	66.9	86	4, 6	42	25	4.60	14	S.	11	17	3
Boston, .	68.9	89	4	50	25	2.70	12	S.W.	8	16	7
Brewster, .	67.4	86	2, 5	51	24	2.83	6	W.	16	8	7
*Fitchburg, .	66.0	86	4, 5	52	24.25	6.07	12	W.	6	15	10
Ipswich, .	69.9	91	5	52	16.25	2.51	9	N.W.	9	17	5
Lawrence, .	69.7	94	5	48	25	5.03	12	S.W.	11	9	11
*Leominster, .	68.4	84	1, 5	50	24.25	6.05	13	W.	5	20	6
*Monroe, .	61.7	84	3, 4	40	16	6.50	11	-	12	7	12
Nantucket, .	68.1	80	5	55	25	2.81	10	W.	18	9	4
Provincetown, .	68.8	84	5	54	25	2.81	7	W.	6	15	10
Springfield, .	70.2	88	4, 5	48	25	5.57	14	S.	11	16	4

* Temperature data from thermometer not self-registering.

† 0 to 3 cloudless; 4 to 7 inclusive, partly cloudy; 8 to 10 cloudy.

Summary.

Temperature (deg. F.). — Monthly mean, 67.8°. Highest monthly mean, 70.2°, at Springfield; lowest monthly mean, 61.7°, at Monroe; maximum, 94°, at Lawrence on the 5th; minimum, 40°, at Monroe on the 16th; range, 54°; greatest local monthly range, 46°, at Lawrence; least local monthly range, 25°, at Nantucket; greatest daily range, 32°, at Lawrence on the 17th and 19th; least daily range, 1°, at Ipswich on the 23d. Average temperature for August at Springfield for twenty-three years, 70.4°; average for August, 1890, 70.2°; departure, — 0.2°. Average temperature for August at Boston for twenty years, 69.0°; average for August, 1890, 68.9°; departure, — 0.1°.

Precipitation. — Average, 4.32 inches; greatest, 6.50, at Monroe; least, 2.51, at Ipswich. Average for August at Springfield for forty-three years, 4.53; for August, 1890, 5.57; departure, + 1.04. Average for August at Boston

for twenty years, 4.09 ; for August, 1890, 2.70 ; departure, — 1.39.

Prevailing Wind. — West.

Thunder-storms. — 1st, 10th, 14th, 17th, 18th, 19th, 20th.

Fog. — Nantucket, 2d, 4th, 23d.

Meteor. — Amherst, 6th.

REMARKS.

The weather for Massachusetts for August, 1890, has differed but little from the month in other years. There was a slight deficiency in temperature, sunshine and precipitation, though there was no strongly marked departure from the normal in either element. The precipitation was somewhat unevenly distributed, and some localities had an amount above the normal, but the general average was below.

The weather was influenced by the passage of eight cyclonic areas and eight anti-cyclonic ones. During the passage of the first cyclone down the St. Lawrence, on the 4th-6th, the warm southerly winds carried the temperature to the maximum for the month, varying from 80° to 94°. The high winds and hail on the 10th, which did damage in Connecticut by beating down corn and tobacco, occurred with the change of the wind to westerly, after the passage of the second cyclone. The low temperature and cloudy, threatening weather along the coast on the 12th was probably due to the influence of the West India cyclone, which was far out to sea. Temperature minima occurred in different localities on the 16th, 19th or 25th, under clear anti-cyclonic skies. The tornado-like disturbance in western Massachusetts on the 19th was due to the influence of the fifth cyclone, which moved rapidly across New England from south-west to north-east. On the 22d a secondary formed on the southern coast and moved down the coast on the 23d and 24th, causing heavy rains. On the 27th a cyclonic area moved across New England, from west to east, with rapidly increasing energy, and gave high winds and rain. Some damage was done to crops and light coast vessels by wind on that date.

NOTES OF CORRESPONDENTS.

(Returned to us August 28.)

BARNSTABLE COUNTY.

Eastham. — Rowen promises to be an average crop and corn a full average. Outlook fair for a crop of late potatoes. Cranberries are short of an average. Grape culture has not increased in the past five years and this year's crop will be light. Growing crops are looking well. Large acreage of turnips planted and as a general thing are looking well.

J. A. CLARK.

East Dennis. — The extreme dry weather has been very unfavorable to the rowen crop, and pastures are very short. Corn promises to be a full average. Potatoes planted early yield a fair crop; small crop of late ones. Cranberries are very backward and the crop in this county promises to be less than last year, which was below the average. Grape culture has not increased in the past five years. Outlook for this year's crop not favorable.

JOSHUA CROWELL.

East Sandwich. — Outlook for rowen very poor. On account of the drought, corn will be below the average. No potato rot and but little blight. Late potatoes will be below the average. The cranberry crop has fared hard, as a late frost hurt many of the late berries when they were in bloom and it has been worms and dry weather ever since, but on most bogs the crop will be fair. There is little feed in pastures and most all have to feed in the barn, which will use up some of the surplus hay.

J. R. HOLWAY.

West Falmouth. — Outlook for rowen crop poor. Think corn crop will be a full average. We have no potato rot or blight. Potatoes are all planted early. Very few late cabbages grown. The outlook is for one-third of a crop of cranberries. No grapes are grown.

D. R. WICKS.

BERKSHIRE COUNTY.

Alford. — The abundant rains have pushed rowen ahead, and it is unusually good. Corn in the early part of the season was very backward, but, after the commencement of the very hot weather, it grew rapidly and is generally a heavy growth and will soon be secure from frost. No potato rot has appeared and early potatoes are a fair yield and the outlook for late ones is good. Outlook for late cabbages good. Grape culture has increased very little if any. This year's crop will be a failure.

H. W. SMITH.

Cheshire. — The rowen crop will be up to the average. Think the corn crop will be a full average though it is a little late. Have seen no potato rot thus far, and the vines are quite green and no blight. The outlook for late varieties is good. Outlook for late cabbages very good. Think grape culture has not increased in the past five years. The crop this year is looking finely.

L. J. NORTHUP.

Egremont. — In this part of the county farm crops, with the exception of fruits, are better than last year. The outlook for the rowen crop is good and the corn crop promises to be a full average. Noticed blight on potato vines about the middle of August; very little rot at this date and the crop promises to be an average one. Outlook for late cabbages good. Grape culture has increased in the past five years. This year's crop not very good on account of black rot.

J. H. ROWLEY.

Sandisfield. — Rowen crop will be medium and the corn crop a full average. Potato rot did not appear until the recent heavy rains commenced. To all appearances now it is destined to be quite prevalent and destructive. It was first noticed about August 16, blight having come eight or ten days previous. We are of the opinion that the extreme wet weather has much to do with it. But few cranberries raised and they are a medium crop. But few grapes raised and grape culture has not increased here during the last five years.

GEO. A. SHEPARD.

BRISTOL COUNTY.

Berkley. — The rowen crop will be light. Corn promises to be a full average but is late. Have heard of very little potato rot. The crop of late potatoes promises to be below the average. The

cranberry crop, which promised well while in blossom, has been injured by the fire-worm, and the result is about half a crop. Grape culture has not increased in the past five years. This year's crop will be above the average.

R. H. BABBITT.

North Dartmouth. — Rowen is rather poor. Think the corn crop will be very near an average one. Potato rot appeared about the first of August. The crop of late potatoes will not be as large as the early. Outlook for late cabbages quite good. Grape culture has not increased in the past five years. The outlook for this year's crop is very poor.

L. T. DAVIS.

Somerset. — Rowen crop very light. Corn bids fair to be good. Late potatoes were injured by dry weather and the crop will be light. There has been no blight on potatoes as noticed in previous years. The vines seemed to dry up for lack of moisture. The rot is confined mostly to moist land and is increasing badly on such lands. Late cabbages will be light. There has been no increase in the culture of grapes. This year's crop will be light.

JOSEPH GIBBS.

DUKES COUNTY.

West Tisbury. — Outlook for rowen crop rather poor. Think the corn crop will be small in quantity but of very good quality. No potato rot to speak of has appeared. Outlook fair for cranberry crop. Outlook for this year's crop of grapes not very good.

WM. J. ROTCH.

ESSEX COUNTY.

Haverhill. — Rowen crop will be fair. Think the corn crop will be a full average. Potato rot has not appeared and the outlook is good for a full crop of late potatoes. Late cabbages are fully up to the average. Grape culture has not increased during the past five years. The outlook is favorable for a full crop this year.

EBEN WEBSTER.

Ipswich. — There will be no rowen except on very low, wet land. Corn will be about three-fourths of an average yield. Salt hay was secured bright and dry, and many think it worth more to feed than last year's English. Many are feeding down the mowing land instead of cutting a second crop. No potato rot of any amount noticed and no blight. Late potatoes are growing yet but

the crop will be but half an average. Cabbages and cauliflowers will be average crops. Cranberries will be less than half an average. Vegetables generally promise the usual crops.

O. C. SMITH.

North Andover. — Rowen crop is light. Corn crop will not be a full average. There has been no potato blight or rot; they have simply dried up, and late potatoes will be a light crop. Outlook for late cabbages good. The cranberry crop is a complete failure. Grape culture has not increased in the past five years. The outlook for this year's crop is poor.

PETER HOLT, JR.

West Newbury. — There will not be much rowen. No potato rot and no blight. Outlook for late potatoes rather poor. Outlook for late cabbages very good, but cranberries will not be a tenth part of a crop. Grape culture has not increased in the past five years. This year's crop promises to be very poor.

J. C. TARLETON.

FRANKLIN COUNTY.

Ashfield. — Outlook for rowen crop not as good as last year. Think the corn crop will be a full average. Have heard of but few cases of potato rot, and the crop promises to be very good. Outlook for late cabbages good. Grape culture has not increased in the past five years. This year's crop will be about an average.

A. G. HOWES.

Colrain. — The late rains have helped the rowen crop and the feed in pastures very much. Corn will hardly be a full average crop. In this section the potato crop and the outlook for late cabbages are good. The apple crop is a failure, and there will hardly be enough apples for home use. Grape culture has not increased in the past five years. The outlook for this year's crop is fairly good.

A. A. SMITH.

Deerfield. — The rowen crop will not be an average. Potatoes, early and late, are looking well and are very free from rot and scab. Corn is looking well and will be a full average crop. Oats are a very poor crop, and some are not worth harvesting. Wheat

and rye very good and yielding fairly well. Some grapes are looking fairly well but the crop will not be an average one. There is a good growth of tobacco, and it is free from rust and worm and is more than half harvested.

CHARLES JONES.

Montague. — The weather the last month has been all that could be desired for rowen, corn and potatoes, and in fact all crops seem to be making rapid growth. Tobacco seems to be the best crop for a number of years, notwithstanding it was late when set and the ground quite dry. No potato rot to speak of, and the late crop promises to be fair but not as good as the early one. Outlook for late cabbages very good. Grape culture has increased but slightly the past five years. This year's crop promises to be very good. The wind of the 19th did a good deal of damage by blowing down barns and trees.

C. S. RAYMOND.

HAMPDEN COUNTY.

Blandford. — No rowen of any amount. Corn promises to be a full average. No complaint of potato rot until about August 20. Potatoes that have been dug are rotting badly, and the prospect is not good at present time for crop. Oats and barley are being threshed, and, though blighted, are yielding fair crops. Apples a total failure.

E. W. BOISE.

Brimfield. — Rowen crop is a failure. Pastures, under the influence of the late rains, are improving. Think the corn crop will be a full average though it is ten days late. Blight on early potatoes came about July 1, and perhaps one-eighth were affected; on late potatoes it has been slight and the damage slight. No rot. Potato crop the best one for some time. Fair outlook for cranberries. Grape culture has not increased in the last five years. Outlook for this year's crop about middling.

S. W. BROWN.

Ludlow. — Rowen has nearly doubled in quantity the last two weeks, and the outlook for a crop is very good. Corn is earing very well, and, if the frosts hold off for it to ripen, will be above the average. Pastures are looking well and milk is fairly plenty. Farm help is very scarce. No potato rot; blight came about August 15. Outlook for late potatoes fair and for late cabbages good. Grape culture has increased a little in the past five years.

C. B. BENNETT.

West Springfield. — Rowen will be late and light. The corn crop promises to be about an average. No potato rot in this vicinity to my knowledge. Potatoes sell at sixty-five cents per bushel in the field. The supply of winter cabbage will be short on account of the drought at time of setting. Grape culture has not increased in the past five years. Outlook for this year's crop is good.

N. T. SMITH.

HAMPSHIRE COUNTY.

Chesterfield. — Rowen crop will be light. Corn is looking well and will probably be a full average crop. Have seen neither rot nor blight, and the indications are that potatoes will be a good average crop. Grape culture has not increased in the past five years. The outlook for this year's crop is not encouraging.

HORATIO BISBEE.

Goshen. — Outlook for rowen crop never worse than now. Do not think the corn crop will be a full average. No potato rot and little or no blight has appeared. The late potato crop is very uneven. Some fields are very good with full yield; others are uneven with many small tubers having started since the recent rains, and in many instances are found clinging to the tops of vines above ground, and in still other cases the tubers seem to be small with but few in a hill. Grape vines have increased in number during the last five years but not the fruit. This crop cannot be depended upon here.

ALVAN BARRUS.

Hadley. — Since the last report 4.92 inches of rain have fallen. Rowen will be about half a crop. Corn will be a full average crop if frost holds off. Neither rot nor blight have appeared in potatoes and the outlook for the late crop is good. Grape culture has increased but little in the past five years. Of this year's crop some are rotting and dropping off, others are excellent. The tobacco crop is excellent.

L. W. WEST.

Pelham. — Rowen below the average and corn promises to be a full average. Potato rot appeared about August 8. Outlook for late potatoes not encouraging. The prevailing opinion is that potatoes should be dug as soon as possible after blight appears. Outlook for late cabbages and cranberries good. Grape culture has not increased in the past five years. The outlook for this year's crop is fair. Those grown are mostly Wilder.

J. L. BREWER.

MIDDLESEX COUNTY.

Chelmsford. — There will be but little rowen. Corn crop below the average. Outlook very good for a heavy crop of late potatoes. Outlook for cranberry crop far below an average. Some twelve years ago many farmers in this section went into the cultivation of grapes of various kinds at quite an outlay. Their expectations have not been fully realized on account of damage caused by cold and frost and the very low price when there was a big crop. The crop this year will hardly be an average one.

P. P. PERHAM.

Framingham. — Half a crop of rowen! Corn promises to be a full average. Have seen no potato blight or rot. Late potatoes promise better than last season. Outlook for late cabbages good. Cranberries very light. Think the crops are not as large as last year, but farmers are getting better prices for most of their products and will be better off financially at the end of the season.

H. S. WHITTEMORE.

Groton. — Outlook for rowen crop good. Corn crop promises to be a full average. No blight and the outlook for late potatoes is good. Outlook for late cabbages good. Grape culture has increased the past five years, and the outlook for this year's crop is excellent. Never saw the pastures looking better. The rains have been seasonable, and to-day there are no evidences of the severe drought which for four weeks threatened desolation and ruin to our fields and gardens.

DANIEL NEEDHAM.

Wilmington. — Outlook for rowen poor. Think the corn crop will be a full average. The late rains have proved a boon for corn and fall feed. No complaint of potato rot, and the outlook for late potatoes is good. Outlook for late cabbages good. Cultivated cranberries one-half a crop; meadow cranberries poor. Grape culture has increased in the past five years. The outlook for this year's crop is fair.

C. W. SWAIN.

NANTUCKET COUNTY.

Nantucket. — Outlook poor for rowen. Think crop of corn will be a full average. No potato rot yet and most of the potatoes are

dug. Outlook for crop of late potatoes poor. Outlook for late cabbages good and for cranberries poor. Not enough grapes raised here to make a report upon.

C. W. GARDNER.

NORFOLK COUNTY.

Franklin. — Rowen not up to the average. Corn promises to be a full average. Late potatoes not an average crop. The cranberry crop will be very light. Grape culture has increased but little in the past five years. Outlook for this year's crop medium.

C. M. ALLEN.

Medway. — Promise of about two-thirds of the usual rowen crop. At this date corn looks a full average. Have not heard of any potato rot, and the outlook for late potatoes is very fair. Late cabbages are looking well. Peaches have dropped, and the crop will be small but the quality is good. Robins have done much damage by pecking fruit, especially peaches. Think grape culture has increased slightly in the past five years. This year's crop will be light.

MONROE MORSE.

Norfolk. — Light crop of rowen. Think corn crop will be a full average. No potato rot or blight has appeared. Outlook for late potatoes poor. Outlook for late cabbages good. Grape culture here has not increased in the past five years.

J. W. HINKLEY.

PLYMOUTH COUNTY.

Halifax. — Rowen will be very light. Corn looks fair at present, and, with good weather until it ripens, we shall have an average crop. Potatoes are yielding better than we expected, and more than an average crop will be harvested. Have heard of no complaint of rot. Outlook for late cabbages fair and for cranberries better than an average. Do not think grape culture has increased in the past five years. Outlook for grapes this year is very poor.

G. W. HAYWARD.

Hanson. — Outlook very poor for the rowen crop. Corn promises to be a full average. Have seen or heard of no potato rot or blight. The outlook for late potatoes is fair. Out-

look for late cabbages, grapes and cranberries good. We raise much fodder corn, most of which is looking first rate. More than the usual trouble with pumpkin-vine root worm.

F. S. THOMAS.

Kingston. — Rowen very small and late. Some corn fields were damaged by drought, but nearly all are very good now. Potatoes very good with no rot, and late ones look excellent. Late cabbages look well. Outlook for cranberry crop very good, and some have already commenced picking. Grape culture has increased rapidly in the last five years. This year's crop will be below the average.

J. H. CUSHMAN.

Marshfield. — There is no outlook for rowen to speak of. The prospect for corn is fair. No potato rot has appeared in this vicinity and no blight. Small crop of late potatoes. Late cabbages doing fairly well. A gradual increase in grape culture in the past five years. This year's crop below the average.

GEO. J. PETERSON.

WORCESTER COUNTY.

Berlin. — It looks now as though rowen would be light. Do not think the corn crop will be a full average. There are no signs of potato rot or blight and some fields are smooth and handsome; others very scabby. Potatoes planted quite late may be good. Outlook for late cabbages not very promising. Outlook for cranberry crop very good. Grape culture has not increased in the past five years. This year's crop does not look very promising.

P. B. SOUTHWICK.

Bolton. — Rowen promises to be an average crop. Think the corn crop will be a full average. Do not think potato rot has appeared in this vicinity. The outlook for a crop of late potatoes is poor, and late cabbages will not be an average. Cranberry crop nearly a total failure. Think grape culture has increased in the past five years. This year's crop very poor.

H. E. BABCOCK.

East Blackstone. — Rowen crop but little below the average and the corn crop promises to be a full average. No potato rot has appeared, but some scab in heavy ground. Late potatoes promise to be an average crop. Outlook for late cabbages very good.

About three-fourths of a cranberry crop, as fire worms have done much damage. Grape culture has increased very little if any in the past five years. This year there promises to be about half a crop.

L. R. DANIELS.

Harvard. — Rowen good except on very dry land. Think the corn crop will be below an average. Found potato rot August 21. Late potatoes promise to be very good unless rot spoils them. Outlook for late cabbages good, but not many raised. Outlook for cranberries very fair. Grape culture has not increased in the past five years; heavy crop this year, but about a third rotten.

PRESTON KNIGHT.

Leominster. — Rowen generally one-third of a crop. Corn crop promises to be about an average. Noticed some potato blight about the 12th of August; as yet no complaint of rot. Late potatoes promise to be very fair. Grape culture has not increased in the past five years. Grapes show indication of rot but not extensive. If early frosts do not injure them there will be more than an average crop. Fall apples have matured earlier than usual and have been gathered.

W. B. HOSMER.

West Brookfield. — Outlook for rowen very favorable. Think the corn crop will be a full average. Neither potato rot nor blight have appeared, and the crop of late potatoes promises to be a good one. Perhaps grape culture has increased a little in the past five years. The outlook for this year's crop is good.

L. H. CHAMBERLAIN.

Worcester. — Outlook for rowen crop very poor. Do not think corn will be an average crop unless the weather is very favorable. Corn stover is heavy and the pastures are improving. Observed first potato rot about August 15. First blight came July 18. Outlook for late potatoes good. Late cabbages are very late. Grape culture has not increased in the past five years. Grapes look well on young vines but have rotted on older ones.

H. R. KINNEY.

THE GRAPE INDUSTRY IN MASSACHUSETTS.

The vine is indigenous in this country and was found in profusion by the Northmen in their discoveries on this continent more than eight hundred years ago, inducing them to name the country "Vin-land dat gode" (the good wine-land).

Our native varieties, called "fox grapes," characterized by their hard pulp, thick skins and pungent aromatic flavor, are found in every kind of soil and situation. "Here are grapes," wrote Edward Winslow in 1621, "white and red, and very sweet and strong also."

Plants and seeds of foreign varieties were brought to this country by colonists during the first fifty years after its settlement, but no considerable attention seems to have been given to their propagation until after the close of the Revolutionary War, when efforts began to be more especially directed to the cultivation of various kinds of fruit. Among these, though not the most prominent, was the grape.

Experience soon showed that these foreign varieties would not withstand the severity of our New England winters without protection; and that our short and variable summers and early autumnal frosts presented an insurmountable barrier to their successful cultivation except under glass.

These efforts in relation to grapes of foreign origin having failed, the attention of the fruit grower was wisely directed to the examination of our more hardy native varieties. By a careful selection of the most promising for propagation, and by reproduction, several new varieties were obtained of acknowledged excellence and well adapted to our New England climate. Prominent among the varieties obtained from the native grape were the Isabella and Catawba, excellent grapes where the climate permitted them to ripen, but too late for our New England climate except in the most sheltered situations, and uncertain even there.

It was not until these varieties appeared that our people took much interest in the cultivation of this fruit, and even

then but here and there a vine could be found on our northern farms. Later the Diana was added to the list, and others of lesser note; but the honor of giving a grape to the country that was to be extensively cultivated, and highly prized from the extreme East to the extreme West, was reserved for one of our own citizens, and when Mr. Bull sent out his Concord grape he conferred a great boon upon the country. This variety was a seedling from a seedling of the wild grape, *Vitis Labrusca*.

In 1862, according to John B. Moore, there were five vineyards in Middlesex County, from one-half to one acre each; viz., one in Acton, one in Dracut, and three in Concord. Two of these vineyards had been planted only one year and the other three were bearing fruit.

Said Mr. E. W. Bull in 1865, "The cultivation of the grape in the open air is to-day an assured fact. More than thirty acres are planted in Middlesex County alone, not counting the small holdings;" and in 1866 the same gentleman said that more than one hundred acres of grapes were grown in Massachusetts, and that he assumed that the growing of the grape in the open air was demonstrated and that the vineyard was established in Massachusetts.

The following table will illustrate the growth of the grape industry in Massachusetts during the twenty years from 1865 to 1885, inclusive:—

	CURRENCY VALUES.		GOLD VALUES.
	1865.*	1875.†	1885.
Ordinary, bushels, . . .	877	19,836	51,852
Total value, . . .	-	\$32,635	\$58,650
Value per bushel, . . .	-	1.65	1.13
Best, including hot-house, lbs.,	24,415	267,617	1,420,564
Total value, . . .	-	\$34,624	\$58,372
Value per lb., . . .	-	0.13	0.041
Aggregate value, . . .	\$40,100	\$67,259	\$117,022

* Premium, 1.57.

† Premium, 1.12.

In 1875 there were 224,352 vines, and in 1885, 356,976. These latter were owned by 18,112 persons, in 337 cities and towns, and their average value was ninety-seven cents per vine. In the decade from 1875 to 1885 ordinary grapes decreased 23.13 per cent and best 64.66 per cent in value, while ordinary grapes increased 161.40 per cent and best 430.82 per cent in quantity.

The following table, compiled from the census of 1885, will show in which counties this industry is most largely carried on:—

COUNTIES.	Bushels of Ordinary Grapes.	Value.	Pounds of Best, including Hot-house.	Value.	Aggregate Value.
Barnstable, .	968 $\frac{1}{2}$	\$1,339	3,955	\$340	\$1,679
Berkshire, .	812	1,244	16,368	890	2,134
Bristol, . .	3,748 $\frac{1}{4}$	4,776	41,545	6,118	10,894
Dukes, . . .	120	172	3,080	159	331
Essex, . . .	4,402	5,805	61,168	3,744	9,549
Franklin, . .	2,057 $\frac{1}{2}$	2,622	16,677	738	3,360
Hampden, . .	3,075 $\frac{1}{2}$	3,258	27,524	966	4,224
Hampshire, .	2,612 $\frac{1}{2}$	2,509	22,718	950	3,459
Middlesex, .	13,036 $\frac{1}{4}$	13,461	735,714	25,883	39,344
Nantucket, .	15	18	1,400	106	124
Norfolk, . .	4,406	5,055	87,896	2,784	7,839
Plymouth, . .	1,987 $\frac{3}{4}$	2,880	50,062	2,248	5,128
Suffolk, . . .	349 $\frac{1}{2}$	874	13,580	748	1,622
Worcester, . .	14,261 $\frac{1}{4}$	14,637	338,877	12,698	27,335
Aggregate,	51,852	\$58,650	1,420,564	\$58,372	\$117,022

Billerica, in Middlesex County, produced 1,734 bushels of ordinary and 101,640 pounds of best; Concord, in the same county, 312 bushels of ordinary and 150,119 pounds of best; Harvard, in Worcester County, 256 bushels of ordinary and 127,877 pounds of best; Ashby, in Middlesex

County, 38 bushels of ordinary and 87,460 pounds of best ; and Fitchburg, in Worcester County, 179 bushels of ordinary and 72,866 pounds of best.

In order to ascertain the condition of the grape industry at the present time, and the outlook for this year's crop, a special circular was prepared and sent to parties in some forty of the towns in which this industry is most largely carried on, as indicated by the census of 1885.

From the returns received it is estimated that there are not less than 275 acres at the present time devoted to grape culture in vineyards, and that the Concord, Moore's Early and Worden are the varieties most generally grown. In some sections grapes are also grown in houses, but it is believed not to any great extent for market.

The following reports will indicate the acreage of and prospect for this year's crop in what might be called the grape centres of the Commonwealth : —

Amherst. — Six acres in vineyards, one-half young ; Concord, Moore's Early and Worden most largely grown ; crop promises to be more than an average in quantity and quality ; estimated yield $3\frac{1}{2}$ tons ; crop usually marketed in Worcester ; grape culture in vineyards not increasing very much.

Ashby. — Forty acres in vineyards ; Concord, Moore's Early, Niagara and Worden most largely grown ; crop promises to be an average one in quantity and quality ; estimated yield 75 tons ; crop usually marketed in Boston, and five cents per pound net the price received last year ; grape culture in vineyards not increasing ; little trouble from disease or insects so far this season. Grapes grown in two houses in town ; one containing 2,700 square feet, hot water heater, varieties grown, Black and Muscat Hamburg, Alicante, Gros Colman ; other house 1,000 square feet, no heat, varieties grown, Hamburg and Alicante.

Berlin. — Five acres in vineyards ; mostly Concord ; crop promises to be more than an average ; estimated yield $6\frac{1}{2}$ tons ; marketed in Boston, Worcester and neighboring towns ; average price per pound received last year seven cents ; grape culture in vineyards not increasing in this town.

Billerica. — Twenty-six acres in vineyards ; varieties, mostly Concord, Moore's Early and Niagara ; this year's crop does not

promise to be an average one; estimated yield not over 2 tons; crop usually marketed in Boston and Lowell. Growers are discouraged by repeated failures, and many acres have been pulled up and more are about to be. One extensive grower says that by the liberal use of air-slaked lime his crop is saved and is the best he ever had; half the number of boxes but the largest clusters.

Concord. — Ninety acres in vineyards; Concord and Moore's Early the chief varieties grown; this year's crop promises to be below an average in quantity and quality; market, Boston; price received last year, from one to twelve cents per pound; grape culture in vineyards not increasing in this town; rot is the chief drawback, and it has increased greatly in the last two years.

Fitchburg. — Perhaps 10 acres in vineyards; Concord most largely grown, some Delaware and Worden; promise of about three-fourths of a perfect crop, with little rot or other disease, and the prospect now of a good quality if conditions remain favorable; estimated yield 20 to 25 tons; market mostly Boston, and average price received per pound last year six cents; grape culture in vineyards not increasing.

Harvard. — Between 30 and 50 acres in vineyards; Concord most largely grown; crop rotting badly, having begun about August 12. Before that gave promise of more than an average crop, estimated yield perhaps 30 tons; market usually Boston; grape culture in vineyards not increasing.

Littleton. — Four to five acres in vineyards; Concord and Moore's Early the principal varieties grown; this year's crop does not promise to be an average one; estimated yield 3 to 4 tons; market, Boston; grape culture in vineyards not increasing in this town.

Marlborough. — Between 3 and 4 acres in vineyards; almost wholly Concord; this year's crop promises to be an average one in quantity and quality; estimated yield about 7 tons; crop usually marketed in Boston, Worcester and local; culture in vineyards not increasing to speak of. One man raises such fine grapes that he receives several cents more per pound than the rest.

Middleborough. — Four acres in vineyards; Concord; this year's crop does not promise to be an average one in quantity and

quality; marketed mostly at home and in adjoining towns; chief drawback low prices. None grown in houses for sale. Last year's prices are no criterion, as it was an unusually wet season and grapes did not ripen.

Sherborn. — About 10 acres in vineyards; Concord; crop does not promise to be an average one; market, Boston; grape culture decreasing in this town; little money made on them the past ten years.

Shrewsbury. — Ten acres in vineyards; Moore's Early, Concord, Worden; crop promises to be an average one in quantity and quality; estimated yield 7 tons; crop marketed in Worcester; average price per pound received last year seven cents; grape culture in vineyards is increasing in this town.

Westborough. — Possibly 4 or 5 acres in vineyards; mostly Concord; crop will hardly be an average one; estimated yield 8 to 10 tons; some of crop goes to Boston, but most is marketed in town; grape culture in vineyards not increasing. There are three or four small houses most of which are heated by hot water.

A warm, dry soil is best suited to the grape; and a south slope, with shelter of wood or belts of trees on the north-east and west to prevent the winds from blowing away the hot air created by the heat of the sun, is always desirable.

With careful management grapes can be profitably grown in favorable localities in Massachusetts and a ripened crop be depended upon four years out of five. The profit depends largely upon the care and economy exercised by growers in all the details of the work. The production is so abundant that there is little or no profit to the ordinary grower, but to the painstaking cultivator a superior article still furnishes a fair remuneration.

At a meeting of the State Board of Agriculture in Fall River, in 1871, the late J. B. Moore of Concord, the originator of the Moore's Early, stated that he had seen at the rate of nearly ten tons to the acre raised, but he considered from two to five tons per acre a fair crop. He also stated that grapes can be raised for three cents a pound and that he could grow them as cheaply as he could grow potatoes.

It is not the purpose of this article to create a boom in grape culture or to encourage farmers to rush into the business, but to show that in favorable localities the grape crop may be made a source of profit.

There is liability to over-production, but it is safe to assume that a first-class article will always find a market.

All crops are liable to injury from insects, diseases and unfavorable atmospheric conditions, and the grape crop is no exception.

The chief drawbacks to the cultivation of this excellent fruit are low prices, caused by competition from points farther West, rot, mildew, early frosts, and rose bugs. The destruction by insects and mildews is largely the result of poor cultivation and lack of care.

The following, condensed from Bulletin XIX., August, 1890, of the Cornell University Agricultural Experiment Station, Ithaca, N. Y., may be of interest and value to grape growers in this State:—

We warn our readers not to put faith in statements that certain varieties of grapes are exempt from diseases, for some of the most serious cases which we have seen this year were noticed upon a variety which has been said to be free from attack. The advent of rots and mildews is not a cause for alarm. They are to be expected, and they will undoubtedly spread. But the means are at hand to keep them in check easily and economically. The mildews and rots can be kept in check by the timely and persistent use of Bordeaux mixture. Begin before the flowers open and spray every week or ten days until well into August. For anthraenose (the fungus which causes the scab of the berry and on the wood causes black, shallow pits), sulphate of iron applied before the leaves appear is probably the best remedy. After treatment should be made with Bordeaux mixture.

BULLETIN No. 5.

MASSACHUSETTS
CROP REPORT

FOR THE

MONTH OF SEPTEMBER, 1890.

COMPILED BY

WM. R. SESSIONS,
SECRETARY STATE BOARD OF AGRICULTURE.

BOSTON:

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1890.

CROP REPORT FOR THE MONTH OF SEPTEMBER, 1890.

COMPILED FROM RETURNS TO THE OFFICE OF THE STATE BOARD OF
AGRICULTURE, SEPT. 29, 1890.

OFFICE STATE BOARD OF AGRICULTURE,
BOSTON, MASS., Oct. 2, 1890.

Bulletin No. 5, Crop Report for the month of September, is herewith presented.

In the circular to correspondents the first question asked was, "Do you consider the crop of Indian corn a full average?" In answer to this question 71 of the correspondents state that they do and 19 that they do not. The season has not been particularly favorable to the growth and development of this crop, but frost holding off until the 25th of September gave it time to ripen and permitted, in spite of unfavorable weather, the cutting and stooking of the major part of it.

Notwithstanding the large use of western corn by our farmers, the corn crop of this State is of considerable importance, for in the annual report of the Department of Agriculture for 1889 it is found that the crop of last year was estimated at 58,209 acres, yielding 1,997,000 bushels, valued at \$1,078,147. In 1879 the figures were given as 38,500 acres, yielding 1,386,000 bushels, valued at \$1,081,080, and in 1869 as 57,017 acres, yielding 1,950,000 bushels, valued at \$2,574,000. Here, as also in case of the estimated potato crops, the figures used are only approximately correct, and of course there is more or less variation from year to year from the first date given, 1868, to the present time, but it is thought that these figures will give an idea of the extent and importance of two of our leading crops.

To the question, "Has the rowen crop turned out to be an average one?" 44 of the correspondents state that it has and 49 that it has not.

On account of the drought the last of June and the fore part of July rowen could not grow and the crop promised to be very short. However, the remainder of the season being quite wet, particularly the early part of September, it grew rapidly and as a result the crop is nearly an average one. Much of it was spoiled by attempting to cure it during unfavorable weather.

To the question, "Are late potatoes an average crop in yield and quality?" the replies of the correspondents indicate that the crop promised to be nearly a fair average, but the muggy wet weather the first half of September was very favorable to the development of rot, and as a consequence, in most localities, potatoes are reported as rotting badly both in the field and in the cellar and the yield of sound marketable potatoes will be small.

Judging by the past two seasons it would seem that the best results are obtained by planting potatoes early, in medium light soil. Not only does this promise greater freedom from rot and scab but the crop can be removed in season to use the land for a crop of turnips or for seeding down. In some localities this is done with very satisfactory results. It is not intended to convey the idea that no late potatoes should be grown, but that the farmer should give his time and attention to the crop that under ordinary conditions will be most remunerative to him.

As illustrative of the importance of this crop to our farmers the following estimates taken from the annual reports of the Department of Agriculture are given. In 1888 the crop was estimated at 35,964 acres, yielding 3,632,000 bushels, valued at \$1,997,800; in 1878, 34,100 acres, yielding 2,046,000 bushels, valued at \$1,902,780; and in 1868, 34,913 acres, yielding 4,050,000 bushels, valued at \$3,766,500.

To the question, "Has the average amount of fall seeding been done, and what is its present condition?" the replies indicate that about the usual amount of fall seeding has been done and that as a rule a good catch was secured, and that the present condition is very satisfactory.

To ascertain the condition of the cranberry crop the following question was asked: "Is the cranberry crop an

average in yield and quality? If not, what were the drawbacks?" Most of the correspondents report the cranberry crop in their locality to be less than an average and in some instances almost a total failure. The drawbacks to the successful cultivation of this fruit this season are variously given as drought, fire worms, worm in the berry, hail and late frosts.

In order to ascertain relative to the onion crop the following question was asked: "Is the onion crop an average in yield and quality? If not, what were the drawbacks?" This crop is reported as being hardly an average in yield and quality. Failure of seed to germinate, — owing to excessive moisture at time of sowing, — hail, the ravages of the maggot, and unfavorable weather for curing are given as the drawbacks.

The tobacco crop was unusually large, of excellent quality and harvested in good condition, but the wet muggy weather the first half of the month caused pole sweat to appear in the sheds and considerable damage was done.

Apples have been gathered and the small surplus sold for remunerative prices. While the crop has been a total failure in general, in some localities it has been much better than was expected and the fortunate growers have profited thereby.

Cabbages are good, but are reported as bursting open in the field. Celery is looking well and promises to be a fair crop.

Believing that good would result from the preparation of an article setting forth the circumstances under which the State Board of Agriculture was formed, its composition, duties, requirements, etc., such an article has been prepared and will be found printed in the last part of the bulletin. It is thought it will be welcomed by officers of the various societies, farmers' clubs, granges, etc., for whose benefit it has been largely prepared. Want of space prevents the going into detail, but it is thought that the few facts presented will be found interesting and useful for future reference.

Copies of this report and those that have preceded it will be mailed upon application to this office.

THE WEATHER.

Meteorological Data for September.

STATION.	TEMPERATURE. DEG. F.					PRECIPITATION.		Prevailing Wind.	CLOUDINESS, † (0 to 10.) NO. OF DAYS.		
	Mean.	Maximum.	Date.	Minimum.	Date.	Total in Inches.	Days with Precipitation.		Cloudy.	Partly Cloudy.	Cloudless.
Amherst, .	60.0	78	2, 7	30	25	5.28	11	N.W.	14	9	7
Boston, .	62.9	83	5	39	25	5.04	12	S.W.	13	7	10
Brewster, .	64.5	83	6	41	29	4.53	9	W.	7	5	18
*Fitchburg, .	59.6	78	5	39	25	5.96	15	W.	14	4	12
Lawrence, .	61.8	81	5	34	25	4.13	13	N.W.	13	7	10
*Leominster, .	61.1	77	2, 6	35	25	6.34	14	W.	12	10	8
*Monroe, .	55.8	79	4	26	25	7.62	12	-	12	8	10
Nantucket, .	61.4	77	16	48	30	8.33	13	S.W.	14	6	10
Provincetown, .	63.6	78	2	39	30	7.62	12	S.	14	7	9
Springfield, .	61.9	80	5	34	25	11.12	14	W.	11	11	8

* Temperature data from thermometer not self-registering.

† 0 to 3, cloudless; 4 to 7, inclusive, partly cloudy; 8 to 10 cloudy.

Summary.

Temperature (deg. F.). — Monthly mean, 61.6°. Highest monthly mean, 64.5°, at Brewster; lowest monthly mean, 55.8°, at Monroe; maximum, 83°, at Boston on the 5th and at Brewster on the 6th; minimum, 26°, at Monroe on the 25th; range, 57°; greatest local monthly range, 53°, at Monroe; least local monthly range, 29°, at Nantucket; greatest daily range, 40°, at Amherst on the 30th; least daily range, 3°, at Springfield on the 10th. Average temperature for September at Springfield for twenty-three years, 62.8°; average for September, 1890, 61.9°; departure, — 0.9°. Average temperature for September at Boston for twenty years, 62.0°; average for September, 1890, 62.9°; departure, + 0.9°.

Precipitation. — Average, 6.60 inches; greatest, 11.12, at Springfield; least, 4.13, at Lawrence. Average for September at Springfield for forty-three years, 3.60; for September, 1890, 11.12; departure, + 7.52. Average for September at

Boston for twenty years, 3.16; for September, 1890, 5.04; departure, + 1.88.

Prevailing Wind. — West.

Thunder-storms. — 5th, 6th, 12th, 13th, 15th, 16th, 17th, 20th.

Frost. — Monroe, 22d; Provincetown, 30th; general on 25th.

Solar Halos. — 1st, 2d, 20th, 22d, 28th.

Lunar Halos. — 25th, 28th.

Meteor. — Provincetown, 20th, 8.50 P.M., very bright.

REMARKS.

Seven cyclones and the same number of anti-cyclones determined the weather for Massachusetts during September. Of these, the first three cyclones moved down the St. Lawrence, and the others passed across New England from west to east, while all the anti-cyclones moved across to the Atlantic, in either a north-easterly or south-easterly direction.

The average temperature was about the normal of the month in other years, while both the sunshine and precipitation was above the normal. There were no days with an excessively high temperature, but a lower minimum was reached on the morning of the 25th over all but the south-eastern part of the State than is usually experienced in that month. Along the Cape the temperature ran lower on the 29th and 30th than on the 25th.

The precipitation was excessive, and nearly all occurred between the 5th and 18th of the month, during which time rain fell on every day but the 8th. At Provincetown the amount of precipitation was the largest ever registered in any month by the present observer. In that town the thunder-storm of the 16th was very severe, and two men were killed by a lightning bolt which entered a store through a chimney. At Springfield the rainfall for the month was the heaviest of any September during a period of observation covering forty-three years, with the exception of the year 1882, when 11.40 inches fell.

NOTES OF CORRESPONDENTS.

(Returned to us September 29.)

BARNSTABLE COUNTY.

Eastham. — Crop of Indian corn a full average. Rowen not quite an average crop. Very little fall seeding done in this place. Cranberry crop will be light on account of worms.

J. A. CLARK.

East Dennis. — Crop of Indian corn a full average. Rowen has not turned out to be an average crop. Not an average yield of late potatoes. Cranberry crop not an average in this vicinity owing to late frost, vine worms and drought. Onion crop an average in yield and quality.

JOSHUA CROWELL.

West Falmouth. — Crop of Indian corn a full average. Very little if any rowen worth cutting. Most of our seeding is done in the spring. About a third of a crop of cranberries of good quality; crop injured by vine and berry worms. Onion crop not an average, owing to maggot and poor seed. Melon crop very good.

D. R. WICKS.

BERKSHIRE COUNTY.

Becket. — Corn is a full average crop and was out of the way of the frost which came September 25th. Rowen is an average crop but is late. Late potatoes are not an average crop in yield and quality. Fall seeding looks well. Cranberries are an average in yield and quality. Onions not an average crop owing to wet weather.

W. H. SNOW.

Dalton. — Corn is a good crop and well ripened. Think rowen has turned out to be an average crop. Late potatoes have rotted very badly and continue to do so after being dug. Rye is looking well. Farmers are plowing less and top-dressing instead of re-seeding.

W. B. BARTON.

Hancock. — Indian corn a full average and rowen has turned out to be an average crop. Late potatoes yield well but rot badly. Little seeding is done in the fall. Rye is looking well. About two-thirds of an onion crop of good quality. The maggot was the cause of the shortage.

C. H. WELLS.

Monterey. — We have not raised the usual amount of corn, but what we have is fairly good. Only a very little rowen has been cut. Potatoes, early and late, still continue to rot. Very little fall ploughing has been done. The wet weather has kept farmers behind with their work. We think the frost in June destroyed the cranberries.

W. S. BIDWELL.

Windsor. — Think Indian corn a full average crop. About half a crop of rowen of fine quality. Potatoes are a big yield but half are rotten. First frost here the morning of the 25th, with thermometer at 32 degrees. Have had so much rain of late that fall work is backward.

H. A. FORD.

BRISTOL COUNTY.

Berkley. — Indian corn and rowen not full average crops. Late potatoes not an average crop in yield and quality. Less than the average amount of fall seeding has been done, and that is rather backward. Cranberry crop below the average, caused in part by the fire worms in the early part of the season. About an average crop of onions.

R. H. BABBITT.

North Raynham. — Do not think the crop of Indian corn a full average. Think rowen not an average. Potatoes are badly rotten. In many places more fall seeding than usual has been done, and it is in very fine condition. The warm weather of last winter left us with a large crop of worms and bugs in embryo that have been very active all through the season in producing imperfect fruit of nearly all kinds, and not only the fruit, but also the trees and plants have been injured. Frost has not yet appeared in sufficient quantity to check them.

N. W. SHAW.

North Westport. — Most of the corn has been stooked and is a full average crop. Rowen is an average crop. Potatoes are all dug and but for rot the crop would have been a fine one. Not as

much fall seeding as usual, but what has been done is looking well. Cranberry crop not an average owing to fire worms, which have stripped many lots. Onion crop an average in quantity and quality.

A. S. SHERMAN.

Swansea. — Crop of Indian corn and rowen average ones. Late potatoes about an average. The acreage of fall seeding is about an average and the condition good. Much of the onion seed was poor, so that they came thin, but are very large, and the crop is about an average one.

F. G. ARNOLD.

ESSEX COUNTY.

Haverhill. — Crop of Indian corn an average one. Rowen not quite an average, and much difficulty experienced in curing it on account of rain and lack of sunshine. Yield of late potatoes fair but considerable rot. About the average amount of fall seeding and it is looking well. Onion crop somewhat damaged by drought but about up to the average.

E. WEBSTER.

Ipswich. — The crop of Indian corn will be about three-fourths of an average, and rowen not more than one-third of a crop. During the past fortnight the weather has been very favorable for grass. Fall feed is good and growing fast, and mowing land which will have no second crop to cut is getting a good root covering for the winter. About the average amount of fall seeding has been done, and its present condition is very favorable. Cranberries not an average, as they did not set as thick as usual. Onions about an average. First frost of the season occurred on the morning of the 25th, and was heavy enough to kill garden vines and corn stalks, but not to injure late fruit. Quinces are scarce, of good quality, and retailing at fifty cents per peck.

O. C. SMITH.

North Andover. — The corn crop is not an average one. The rowen crop is below the average. Late potatoes have rotted badly, the rot appearing after all danger was supposed to be over. Some are rotting that were planted early and the vines all dead by the middle of July; others appear all sound when dug and rot after being put in the cellar. More fall seeding is done each year, and this year with the very best results. The cranberry crop is light. The onion crop is hardly up to the average in yield and

quality. The maggot thinned them out badly and they are very green at present. Market men say that late cabbages are coming on too early and flooding the market. All other produce sells well.

PETER HOLT, JR.

South Byfield. — Indian corn a full average. Rowen and late potatoes not average crops. Average amount of fall seeding done and condition good. Fall feed is good but the rain came too late to give it growth enough to mow. In this section less salt hay has been cut than usual and much that was cut was damaged in curing, so there will probably be but little more hay in the barns January 1st than a year ago. Cranberry crop not an average. There was a small blossom, and what crop there was did not ripen off well. Onion crop an average in yield and quality.

G. W. ADAMS.

Topsfield. — Indian corn is not an average, being late and green. No early rowen; some late. Yield of late potatoes small and quality good. Not much fall seeding done, and that is looking well, though late. Yield of cranberries small; quality average. Too much water in the spring and no cranberries on low meadows. Onions not a full crop.

B. P. PIKE.

FRANKLIN COUNTY.

Conway. — The corn crop made very rapid growth the last part of the season; has fully matured; is mostly cut without any frost, and is a full average crop. The rowen crop seemed almost a failure until about the 1st of September, since when it has improved rapidly, and will be an average. Early potatoes were very good in quantity and quality, but since they were dug many have rotted. Late potatoes are, however, very much the worst. Average amount of fall seeding has been done, and it is looking finely now.

J. C. NEWHALL.

East Charlemont. — There is a good growth of corn, but unfavorable weather for maturing it has made it late, and has delayed the cutting for the silos and other purposes till the last of the month. Rowen crop not up to the average, and many pieces have been damaged by rains and are worth but little. Late potatoes are an excellent crop, but not free from scab, and those that were dug before the rains are rotting in the cellar, while those

that are not dug are rotting badly. About the usual amount of fall seeding has been done, and its present condition is very good.

H. S. GILES.

Leicester. — Indian corn a full average crop and well harvested. Rowen an average crop but secured in bad weather. Late potatoes are small and rotting some. Average amount of fall seeding has been done, and it looks well. Only one cranberry bog in town; crop poor. Onions a good crop and selling well. Squashes are fine. Late cabbages are well grown and many are bursting in the field. Tomatoes were struck with blight and are now rotten. Prices of garden crops are very low, owing to local overproduction.

W. L. BOUTWELL.

New Salem. — Indian corn an average crop and rowen above an average. But little fall seeding done here. Light yield of cranberries. Late potatoes an average in yield, but many have rotted. The warm wet weather has kept pastures unusually green.

DANIEL BALLARD.

Northfield. — Indian corn a full average crop. Rowen an average crop but much of it spoiled on account of the long rainy spell. Rot has injured the potato crop very much. Full average amount of fall seeding has been done, and it is looking finely. Onion crop not an average, on account of the maggot.

CHARLES POMEROY.

HAMPDEN COUNTY.

Agawam. — Crop of Indian corn nearly a full average. Rowen crop more than an average. More fall seeding than usual has been done and it is looking nicely. There are but few late potatoes planted. We plant the earlier kinds, thinking it is easier to handle the bugs in a short season, and then we have the land for seeding or for turnips. By the 15th of August my potatoes were all dug and sold or put into the cellar, where they are keeping nicely.

R. DE WITT.

Brimfield. — Corn has not been better in ten years. Rowen would have been fair but so much rain spoiled it after cutting. Late potatoes are a very large yield but from one-half to two-

thirds diseased. On very sandy land there is but little rot, but on heavy land two-thirds have rotted. Average amount of fall seeding has been done and it looks well.

S. W. BROWN.

Chicopee. — Indian corn a full average but not as much planted this year as common. Where mowed early the rowen crop was good. It has been too wet this fall for potatoes and they have rotted. Not as much fall seeding as usual has been done and that looks fair.

R. W. BEMIS.

Feeding Hills. — Indian corn is a full average crop, while rowen is short in growth and much of it has been injured by late rains. Late potatoes are a good crop and of fine quality. Rot has nearly ruined some fields while others are comparatively free from it. Early seeding looks finely. Rains prevented September seeding to quite a large extent and considerable will be done yet.

J. G. FRIELAND.

West Springfield. — Indian corn a full average. Rowen an average crop but some spoiled by rain. Late potatoes are an average crop in yield and quality; a few in heavy land have rotted but not as much as was feared. The ground is soaked and farmers are waiting for it to dry before doing their fall seeding. Farmers are two weeks behindhand in their work. Onions an average crop in yield and quality but too wet to cure well. The sorghum mill at Underbluff is in running order, and small lots of cane were grown in Wilbraham, Agawam and by the proprietor of the mill. A choice article of syrup is made and those who use it cry for more.

J. N. BAGG.

HAMPSHIRE COUNTY.

Amherst. — The corn and rowen crops have turned out better than was expected and are full average ones. Late potatoes are not an average crop in yield and quality. The average amount of fall seeding has been done and looks well. The onion crop is reported as but three-fourths of an average, owing to the drought and poor seed.

C. E. WILSON.

Goshen. — Do not think the crop of Indian corn a full average. The rowen crop is not an average one. Potatoes would have been

an average had not more than half of them rotted. Fall seeding good so far as done. The heavy rains have delayed this work and the necessity of harvesting will defeat it to some extent. Onions have not grown or ripened well and have in some cases blasted. Fall feed seems extra but stock do not appear to thrive upon it as well as in drier seasons.

ALVAN BARRUS.

North Hadley. — Indian corn is above the average in yield and quality, is all cut and is in good condition. The rowen crop is below the average in yield and the long storm the first of the month damaged a large quantity of that mowed. The potato crop is a fair yield but is being damaged by scab and rot. Fall seeding is looking well and about the usual amount has been done. Onions yield well and the crop is of good quality, selling at 65 to 80 cents per bushel.

H. C. RUSSELL.

Southampton. — Corn has turned out well, with the ears plump and well filled. Since the late rains rowen has come on finely and much is not yet cut. Late potatoes are yielding fairly well but rot has spoiled part of the crop. The wet muggy weather of the middle of September was the cause of much injury to the tobacco hanging in the sheds. About the usual amount of fall seeding done and it is looking well.

C. B. LYMAN.

South Hadley Falls. — Indian corn an average crop. Rowen has finally made a full average growth, but we have had so much rainy and dull weather that but little of it has been secured in prime condition. Farmers are cutting and feeding it green to their milch cows. Probably one-half is still uncut. Potatoes average in yield but not in quality. Not as much fall seeding as usual has been done but the condition of that done is fine. Although the apple crop is almost a failure many are gathering more than they expected.

H. W. GAYLORD.

MIDDLESEX COUNTY.

Concord. — Crop of Indian corn a little below the average. The rowen crop is short on account of the dry weather of the summer. Late potatoes have rotted. Not quite an average amount of fall seeding done, but that is looking well. All the cranberry bogs here are natural ones, and they are a failure.

Some think that the natural cranberry bogs were in some way injured by the winter. I believe it is a fact that the artificial bogs, which were covered with water through the winter, are producing a good yield. There are some good fields of onions and some poor ones.

WM. H. HUNT.

Framingham. — Indian corn a full average but late in ripening. Rowen is a full average crop, and feed in pastures is good. Do not think potatoes are an average yield. Cranberry crop very light in this section. About four-fifths of an average onion crop. Many ploughed up their onion beds on account of the small amount of seed started, owing to wet weather. Onions will average larger in size than usual. About the usual amount of fall seeding will be done.

H. S. WHITTEMORE.

Marlborough. — Indian corn and rowen were kept back by the drought, rowen especially, but of late have done very well. Have had poor weather to secure rowen except as ensilage. Late potatoes a good yield but have rotted badly lately. Not much fall seeding has been done; present condition good. Onions an average in yield and quality but not many grown.

C. S. HOWE.

Sherborn. — Indian corn a full average crop but not as much planted as in some years. Rowen has not turned out to be an average crop. Late potatoes yield good but rotting very badly. More than the average amount of fall seeding has been done and it looks finely. Cranberries not nearly an average crop but are of good quality. Am told that on many of the cranberry bogs, where there promised earlier in the season to be a fair crop, the berries have disappeared until so few are left that they are scarcely worth gathering. One man who estimated his crop at twenty-five bushels gathered them all in a peck basket and the basket was not full.

N. B. DOUGLAS.

Wilmington. — Indian corn a full average crop and rowen nearly so. The average amount of fall seeding has been done. Cultivated cranberries are about half a crop; meadow cranberries nearly a failure. The season in this vicinity has on the whole been a prosperous one for the farmer.

C. W. SWAIN.

NORFOLK COUNTY.

Franklin. — The crop of Indian corn is very heavy but rowen is not over three-fourths of an average crop. Late potatoes are not an average in quantity or quality. Fall seeding is very uneven. Where grass was seeded with barley the barley has lodged and killed the grass to some extent. Where grass was sowed alone early in the fall the dry weather hurt it in some places and in others it looks very fine. The cranberry crop is not an average in yield and quality.

C. M. ALLEN.

Norfolk. — Crop of Indian corn an average one. About half the corn fodder was secured before frost and the ears were well hardened. Late potatoes average in yield but are rotting some. Full average amount of fall seeding has been done and is looking very well at present. Average crop of cranberries. All fruit scarce except grapes.

J. W. HINKLEY.

South Weymouth. — Crop of Indian corn not a full average. The rowen crop is slim on account of the drought after mowing the first crop. Potatoes are rotting badly. Not many cranberries in this town.

J. G. HUTCHINS.

PLYMOUTH COUNTY.

Campello. — Crop of Indian corn a full average. Rowen and potatoes not average crops. Average amount of fall seeding has been done and its condition is good. Cranberry crop an average one in yield and quality. Onion crop not an average as the seed failed to come up, owing to heavy rains, and the maggot also did some damage.

DAVIS COPELAND.

Kingston. — Crop of Indian corn a full average. Rowen is an average crop. Late potatoes not an average in yield or quality. There has been but very little fall seeding done to date. The cranberry crop will be about an average. Onion crops are very small and poor, owing to maggots. Heavy frost September 25, doing considerable damage to late cranberries and all late vegetables.

J. H. CUSHMAN.

Marshfield. — The planted area of corn is less but a full average in yield. More fodder corn has been planted. It is thought that the feeding of ensilage has affected the price and sale of English hay in this vicinity. Rowen an average crop. More fall seeding than usual has been done and the catch is good. Cranberries are an average crop. The onion crop is hardly an average, owing to the onion maggot.

GEO. J. PETERSON.

Halifax. — A very good crop of Indian corn. The rowen crop is light and no weather to cure it. Late potatoes a good yield but in some sections are rotting badly. Those dug early seem to fare the best as they were sold as dug and therefore saved. Nearly an average amount of fall seeding has been done but some is very late. Onion crop an average in yield and quality.

G. W. HAYWARD.

WORCESTER COUNTY.

Douglas. — Crop of Indian corn nearly a full average. Rowen has not turned out to be an average crop. Late potatoes not over three-fourths of a crop and very rotten. The average amount of fall seeding has been done, and it looks very nicely. Cranberry crop about three-fourths of an average in yield and quality good. The onion crop is a fair average and of good quality. Considerable damage to grapes and cranberries by the frost on the morning of the 25th.

GEO. M. WALLIS.

East Blackstone. — Indian corn is not a full average crop. Rowen has turned out to be a full average. Late potatoes are almost a failure, especially on moist land, becoming blasted early, scabby, and rotting badly. Early potatoes on light and usually dry ground, if planted early, got just the right start and were an excellent crop. Usual amount of fall seeding has been done, and its condition is good. Cranberry crop not an average one. In bogs that cannot be flooded in summer, fire worms, a worm inside the berry, and drought were the drawbacks. Onion crop a little shortened by drought.

L. R. DANIELS.

East Templeton. — The corn crop is not up to the average because of slow growth the first of the season and the excessive cloudiness and rain from August 14 to September 18. For two weeks

there was only one day without rain. In some instances early potatoes were not worth digging. Late ones are generally much better. An average amount of fall seeding has not been done. A killing frost and freeze on the morning of the 25th, with thermometer at 31 degrees. Some farmers lost by it.

LUCIEN GOVE.

Leominster. — Corn is late but will be nearly an average crop. On account of so much cloudy rainy weather the middle of the month the rowen crop has been injured. The sudden quick growth with so much wet at the bottom has reduced its value one-half. Our late potato crop promised well until the rot commenced, which will reduce the crop to one-third. The frost on the morning of the 25th injured grapes, but on very high ground little injury was done. The usual amount of fall seeding has been done and on high ground looks well. Our rainfall for the month has been 6.34 inches, or 1.51 inches above the average of the past seven years.

W. B. HOSMER.

Spencer. — Crop of Indian corn a full average. All rowen cut between the 3d and 18th rotted or spoiled. Late potatoes not an average crop in yield and quality and they have rotted badly. Probably not an average amount of fall seeding has been done; condition fine. Wild cranberry vines produced an average crop. Apple trees in sheltered places seem to bear the most this season. There is only about one-fourth as much winter fruit as there is fall. Fall work has been delayed by rainy weather. First general frost came the 25th.

H. H. KINGSBURY.

Worcester. — Corn planted early on light land has ripened well but the yield was somewhat affected by the July drought. On wet land it has not ripened and many pieces were damaged by frost. Late potatoes promised a very heavy yield and are very good, but on some fields are rotting badly. Not an average crop of onions. It was so wet that they came up poorly and the fall has been so wet they have not ripened well. Not an average amount of fall seeding, but seed has caught well and is making a good growth.

H. R. KINNEY.

THE STATE BOARD OF AGRICULTURE.

The State Board of Agriculture was established by an Act of the Legislature in 1852, and the first meeting was held at the Council Chamber, Boston, July 22 of the same year, being presided over by His Excellency George S. Boutwell.

The first movement on the part of Massachusetts in modern agricultural progress was the appointment of Henry Colman as State commissioner, in 1836, for the agricultural survey of the State, and he prepared three excellent volumes on the agriculture of Massachusetts, counties of Essex, Berkshire, Franklin and Middlesex, and one volume on wheat and silk. However, this work was regarded by the Legislature of so little importance that it was suspended in the year 1840.

In 1850 the Legislature created a board of commissioners to report at the next session upon the expediency of establishing agricultural schools or colleges. This commission consisted of Marshall P. Wilder, Edward Hitchcock, Samuel A. Eliot, Thomas E. Payson and Eli Warren, and their report was made to the Legislature at its session in 1851. In this report it was recommended that a State department of agriculture be established, to consist of one member from, and to be elected by, each of the incorporated agricultural societies receiving the bounty of the State.

The preliminary efforts for the establishment of the State Board of Agriculture emanated from a meeting of the trustees of the Norfolk Agricultural Society, held Jan. 28, 1851. It was there voted that "the president and secretaries be a committee to mature and adopt a plan for a convention of delegates from the various agricultural societies of the Commonwealth, to be holden at some convenient time and place, the object of which shall be to concert measures for their mutual advantage, and for the promotion of the cause of agricultural education."

This convention assembled at the State House, in Boston, March 20, 1851. The attendance was large and the session lasted for several days.

As a result the joint committee on agriculture of the Leg-

islature reported a bill for the creation of a board of agriculture, but the further consideration of the subject, after much debate, was referred to the next Legislature.

This being a new measure, its possible failure was apprehended, and it was deemed expedient to establish a Central Board of Agriculture, whose duties should be substantially those which were proposed for a State department, and at the above-mentioned convention this was done.

Its board of officers were Marshall P. Wilder, President; Henry W. Cushman and John W. Lincoln, Vice-Presidents; Allen W. Dodge, Corresponding Secretary; Edgar Whitaker, Recording Secretary, with three delegates from each incorporated society receiving the bounty of the Commonwealth.

At a meeting of this Board, Jan. 14, 1852, it was resolved to petition the Legislature in the following resolution: —

Resolved, That inasmuch as agriculture is the chief occupation of her citizens, the Commonwealth, in the organization of its government, should be provided with a department of agriculture, with offices commensurate with the importance of the duties to be discharged and the labors to be performed.

These various efforts finally culminated in the establishment of the present State Department of Agriculture, which succeeded the existing voluntary Central Board.

The Act was passed in 1852, and at a meeting of the newly created Board of Agriculture, Aug. 5, 1852, Rev. Dr. Edward Hitchcock, President of Amherst College, was unanimously elected secretary, but his duties in connection with the college, and declining health, compelled him to decline the appointment, and Jan. 25, 1853, Charles L. Flint, a young lawyer just established in business in New York, was elected and continued to hold the position until his resignation was accepted Aug. 25, 1880. On that day John E. Russell of Leicester was elected to succeed Mr. Flint, and at this meeting it was voted that the secretary of the Board be elected annually at the meeting in February, the term of service to be for one year, beginning with the first of July following the election. Mr. Russell continued in office until his resignation in 1887. F. H. Appleton of

Lynnfield was elected to succeed him, but he withdrew his acceptance of the office before entering upon its duties, and on August 23 of the same year the present incumbent, William R. Sessions of Hampden, was elected.

The Board of Agriculture, at the present time, consists of the governor, lieutenant-governor, secretary of the Commonwealth, the president of the agricultural college, one person appointed from and by each agricultural society which receives an annual bounty from the Commonwealth, and three other persons appointed by the governor with the advice and consent of the council.

The first four are *ex officio* members; the latter serve for terms of three years each. At the present time there are 41 members, which number will be increased to 44 at the annual meeting in February next. The Board is required to meet at the State House, or at the Agricultural College, at least once in each year, and as much oftener as may be deemed expedient, and no member can receive compensation from the Commonwealth except for personal expenses when engaged in the duties of the Board, and to meet these expenses the sum of \$1,900 was appropriated this year.

The Board may appoint and prescribe the duties of a secretary, who receives a salary of \$2,500 a year; and who, at such times as the Board shall approve, may employ a clerk at a salary of \$1,200 a year, and may expend for other clerical services in his office, and for lectures to be given before the Board at its annual or other meetings, a sum not exceeding \$800. The secretary is also allowed \$500 for travelling and necessary expenses while engaged in the performance of his duties. The Board are also overseers of the Massachusetts Agricultural College, with powers and duties defined and fixed by the governor and council; are empowered to investigate such subjects relating to improvement in agriculture in this Commonwealth as they may think proper, and may take, hold in trust, and exercise control over donations or bequests made to them for promoting agricultural education or the general interests of husbandry; may fix the days on which the different agricultural societies shall commence their exhibitions, and may prescribe forms for and regulate the returns required of said societies, and shall

furnish to the secretary of each society such blanks as they may deem necessary to secure uniform and reliable statistics ; shall annually, by their chairman or secretary, submit to the general court a detailed report of their doings, with such recommendations and suggestions as the interests of agriculture may require.

The Board of Agriculture also acts as a board of forestry ; has two of its members on the board of control of the State Experiment Station ; determines the amount of bounty to which a society is entitled for any year and may prescribe rules and regulations to societies for uniform modes of ascertaining the product of crops entered for premium.

It is the duty of the secretary of the Board in each year to cause to be made and published for distribution as full an abstract of the returns of the agricultural societies as he may deem useful, and he may also appoint one or more suitable agents to visit, under the direction of the Board, the towns of the Commonwealth for the purpose of inquiring into the methods and wants of practical husbandry ; of ascertaining the adaptation of agricultural products to soil, climate and markets ; of encouraging the establishment of farmers' clubs, agricultural libraries and reading-rooms ; and of disseminating useful information in agriculture by means of lectures or otherwise, and for this latter purpose the sum of \$1,400 was appropriated this year.

By the regulations of the Board an annual business meeting is held at the office of the secretary in Boston, commencing on the Tuesday preceding the first Wednesday in February, and continuing through the following Wednesday, on which day the new members may take their seats and the meeting be prolonged as business may require. At this meeting an executive committee consisting of five members is chosen, whose duty it is to act for the Board in cases of emergency ; also a delegate is appointed to attend the fair of each society represented on the Board, who is to make report to the Board at its next annual meeting of the fair and of the condition and work of such society. The Board also holds an annual three days' public meeting for lectures and discussions, at such place within the Commonwealth as it may designate, beginning on the first Tuesday in December. It

also requires that each agricultural society receiving the bounty of the Commonwealth shall arrange and hold not less than three farmers' institutes each calendar year within their limits, and the Board renders all the assistance in its power to make such institutes interesting and profitable. The secretary attends as many as is compatible with other duties of his office, and provides lecturers as far as the appropriation for this object will warrant.

There are also many other minor duties and requirements which want of space will prevent enumerating.

The secretary from the nature of his position early became the chief officer and organ of the Board, which in turn is the organ of the farming community. The office is placed near and connected with the government, so that the whole legislation in reference to bounties, premiums and general agricultural interest of the State is looked after and influenced by the department.

Since the formation of the Board an entire change has taken place in public opinion with regard to the importance of agricultural education. It sustained and cherished the first general efforts for the establishment of the Massachusetts Agricultural College, now so favorably known and appreciated; it has done much for the improvement of the agricultural literature of the country, and in its office is gathered a valuable agricultural library of two thousand volumes; it originated the law for the protection of sheep and the law for the inspection of fertilizers, and appointed a State agricultural chemist; by its prompt and persistent action it greatly assisted the cattle commissioners in stamping out the plague of pleuro-pneumonia in 1860; it has brought together from time to time a band of the leading practical and scientific agriculturists, whose knowledge has been given to the public through the medium of its reports; it was instrumental in the formation of the State Experiment Station; it has published thirty-seven annual volumes, containing 23,000 pages of matter pertaining to agriculture and kindred pursuits and embracing in all an issue of 375,000 copies, which have gone out not only to the people of our own Commonwealth, but may be found in almost all of the civilized countries of the globe.

BULLETIN No. 6.

MASSACHUSETTS
CROP REPORT

FOR THE

MONTH OF OCTOBER, 1890.

COMPILED BY

WM. R. SESSIONS

SECRETARY STATE BOARD OF AGRICULTURE.

BOSTON :

WRIGHT & POTTER PRINTING COMPANY, STATE PRINTERS,
18 POST OFFICE SQUARE.

1890.

CROP REPORT FOR THE MONTH OF OCTOBER, 1890.

COMPILED FROM RETURNS TO THE OFFICE OF THE STATE BOARD OF
AGRICULTURE, OCT. 30, 1890.

OFFICE STATE BOARD OF AGRICULTURE,
BOSTON, MASS., NOV. 3, 1890.

Bulletin No. 6, Crop Report for the month of October, is herewith presented.

As this will be the last issue of the season, it is desired to extend to correspondents thanks for the interest they have taken in this work, and for the manner in which they have made returns from time to time. It is hoped that the bulletins issued have been of some help.

Considerable time and care are necessary to make crop reporting of value, and, while it is believed that the work this year has been much better than that of the first season, it is thought there is still room for improvement. It is hoped that this line of work, which is voluntary on the part of this office, may be continued another year.

In the circular to correspondents the first question asked was, "Considered as a whole, has the season been a profitable one to the farmers in your neighborhood?" In answer to this question sixty-eight of the correspondents state that in their opinion it has, and twenty-four that it has not.

The second question asked was, "What of your leading crops, if any, have been fairly satisfactory?" Judging by the replies received, it is considered that hay, corn, tobacco, onions, early potatoes as a rule, cabbages, strawberries, turnips, rye and garden truck, have been fairly satisfactory.

In answer to the question, "What of your leading crops, if any, have been practically failures?" it can be said that fruit, particularly apples, late potatoes in general, oats and beans, have been failures; also a large portion of the rowen crop was damaged by unfavorable weather.

As bearing on the dairy industry, the following questions were asked : —

First. “Has the season been favorable for the production of milk and butter?” The correspondents are almost unanimous in stating that it has. The drouth from the middle of June to the middle of July materially checked the flow of milk, but, as the feed on the whole was unusually abundant, the total production of milk has been above the average.

Second. “How have dairy products averaged in price as compared with former seasons?” Of the ninety-one replies to this question, forty-eight state the price to have been about the same as in former seasons, thirty-three that it has been lower, and ten that it has been higher. It is thought that the price of milk has not materially differed from the average price in years past, but that the price of butter has averaged lower.

Third. “In your section, what is the chief disposition made of the dairy products produced?” It is a little difficult to condense the replies received to this question. Producers living near co-operative creameries generally send their cream to them, where it is made into butter. Others make butter on their own farms and sell in local markets, or, if they are fortunate enough to have a permanent city trade, dispose of their butter product in that way. The milk used in our cities is largely obtained from the Massachusetts farmer, and considerable is sent to Boston over the several railroads, where it is disposed of by milk contractors. Some of this milk comes to Boston from points more than one hundred miles westward. Other milk is retailed by the producer. Some is made into cheese, which is largely sold in Massachusetts markets.

Fourth. “Do you consider the business of dairying profitable to the farmers in your section?” The replies to this question cover quite a range of ground, but the central idea seems to be that, if properly managed, dairying in this State is perhaps as profitable as any other branch of farming. It is not safe to say that those who are engaged in it are making much money. The farmer must have manure in order to grow crops, and he therefore cannot get along very well without keeping dairy animals.

Fifth. "What are the chief drawbacks, at present, to the carrying on of this industry?" The following are a portion of the reasons why dairying is not more profitable to our farmers: high taxes; unscrupulous middlemen; over-production in summer and shortage in winter; low prices of milk, butter and beef; cost of feed; competition of oleo-margarine; abortion in cows; lack of good pasturage and distance from market in some sections. This year the scarcity of ice has been a drawback.

A special circular was also sent to the treasurer of each of the twenty-seven co-operative creameries in the State, and replies were received from eighteen of them. It appears that since April 1 last there has been a slight increase in the amount of butter made; that the quality of the cream furnished was much the same as last year; that the prices received for butter averaged about one cent per pound less than last year; that the product sold as readily as last year; that most of the product was marketed in the State, although certain creameries sent more or less to New York, Brooklyn, Bridgeport, New Haven, Albany, Philadelphia and Providence; that it took from 6 to 6.53 spaces of cream to make a pound of butter; and that the creameries make a practice of coloring their butter a little, in order to have it uniform in appearance throughout the year. Some do not color from May 1 to November 1; others color a little nearly every month in the year. Most of the creameries report that the market does not call for a highly colored product. Some of the creameries sell considerable unsalted and uncolored butter in New York markets.

The following are given as some of the drawbacks to the successful operation of co-operative creameries: Lack of capital to hold butter in summer; too much cream in summer and too little in winter; cost of gathering the cream, on account of the distance necessary to be travelled; failure of patrons and creamery officers to co-operate heartily; under-selling by creameries, and want of unity as to selling-price of butter each month; competition of milk car; low prices received for butter; and lack of patronage caused by the hesitancy of farmers to join creamery associations.

THE WEATHER.

Meteorological Data for September.

STATION.	TEMPERATURE. DEG. F.					PRECIPITATION.		Prevailing Wind.	CLOUDINESS. † (0 to 10.) NO. OF DAYS.		
	Mean.	Maximum.	Date.	Minimum.	Date.	Total in Inches.	Days with Precipitation.		Cloudy.	Partly Cloudy.	Cloudless.
Amherst, .	48.0	76	1	26	22	6.89	15	N.W.	17	9	5
Boston, .	51.0	77	2	36	22	5.63	16	N.W.	16	8	7
*Fitchburg, .	46.7	72	2	33	23, 30	8.55	15	N.W.	13	8	10
Ipswich, .	49.6	77	2	30	22	5.68	13	N.W.	14	10	7
*Leominster, .	48.3	75	2	32	22, 23	7.83	14	W.	15	8	8
*Monroe, .	43.6	74	2	24	22	8.38	11	-	10	11	10
Provincetown, .	50.7	70	2	37	14, 31	6.78	15	N.	23	2	6
Springfield, .	50.4	73	1, 4	31	22	6.70	16	W.	13	13	5
Taunton, .	50.6	81	1	30	23	9.23	14	W.	-	-	-

* Temperature data from thermometer not self-registering.

† 0 to 3, cloudless; 4 to 7 inclusive, partly cloudy; 8 to 10, cloudy.

Summary.

Temperature (deg. F.) — Monthly mean, 48.7°; highest monthly mean, 51.0°, at Boston; lowest monthly mean, 43.6°, at Monroe; maximum, 81°, at Taunton on the 1st; minimum, 24°, at Monroe on the 22d; range, 57°; greatest local monthly range, 51°, at Taunton; least local monthly range, 33°, at Provincetown; greatest daily range, 36°, at Taunton on the 1st; least daily range, 2°, at Ipswich on the 2d, 17th, 20th. Average temperature for October, at Springfield, for twenty-three years, 50.8°; average for October, 1890, 50.4°; departure, —0.4°. Average temperature for October, at Boston, for twenty years, 51.4°; average for October, 1890, 51.0°; departure, —0.4°.

Precipitation. — Average, 7.30; greatest, 9.23, at Taunton; least, 5.63, at Boston. Average for October, at Springfield, for forty-three years, 4.22; for October, 1890, 6.70; departure, +2.48. Average for October, at Boston, for twenty years, 4.12; for October, 1890, 5.63; departure, +1.51.

Prevailing Wind. — North-west.

Thunder-storms. — 4th, 19th, 30th.

Snow. — Monroe, 23d, 24th, 29th; Taunton, 24th, 26th.

Hail. — Taunton, 29th.

Solar Halos. — 2d, 3d, 6th, 11th, 16th, 23d, 26th.

Lunar Halos. — 2d, 22d, 25th.

Auroras. — Provincetown, 5th; Amherst, 17th.

REMARKS.

The weather for Massachusetts for October was below the normal in barometric pressure, temperature and sunshine, and above in precipitation. The departure from the normal in temperature varied from 0.4° at Boston to 3.7° at Taunton, with a general average of over 1.5° below the normal. There were no very strongly marked daily temperature ranges, and the range for the month was very small. The maximum temperature occurred for the most part near the first of the month, then decreased very gradually toward the end, although the lowest temperature for the month occurred on the morning of the 22d. The excessive rainfall during the last half of the month carried the total average precipitation far above the usual October rainfall. The excess was from 1.51 to 6.69 inches, with an average of $4\frac{1}{2}$ inches above the normal.

Ten cyclones and five anticyclones influenced the weather during the month. The large excess of the cyclonic areas occurring, as they did mostly, during the last part of the month, partially explains the reason for so much rainy and threatening weather during that time. Of the anticyclonic areas, the first and third passed from the Lakes across northern New England, the fourth moved up the west, the fifth passed across New England from west to east, while the second only moved down the coast. The cyclones were generally well defined, and moved with rapidly increasing energy. The first and third, on the 3d and 11th respectively, were poorly defined till they neared the St. Lawrence Gulf; but the sixth on the 17th, the seventh on the 19th–20th, the eighth on the 23d–25th, the ninth on the 26th–27th, and the tenth on the 29th–30th, all moved up the New England coast, giving heavy rains and destructive north-east gales. On the 17th, 19th and 24th they were especially severe, and much damage was done to trees, buildings and shipping, the wind on the latter date reaching as high a velocity on the Massachusetts coast as was ever experienced there.

NOTES OF CORRESPONDENTS.

(Returned to us October 30.)

BARNSTABLE COUNTY.

Eastham. — Crops, with the exception of cranberries and apples, have been satisfactory throughout the season. Prices have also been satisfactory. Late turnips, which are an important crop with us, will prove better than expected, but hardly up to an average. The season has been favorable for the production of milk and butter, and the prices received for dairy products have been about an average with former seasons. Milk sold here goes to Provincetown. Think the dairy business profitable to the farmers who are favorably situated. The chief drawback is a limited market.

J. A. CLARK.

West Falmouth. — Considered as a whole, the season has been a profitable one. Think all planted crops have been satisfactory, and also the hay crop. Season has been favorable for the production of milk and butter. Dairying not profitable, as carried on here. Farmers don't seem to take an interest in that line. Think it could be made profitable, as our pastures are high and dry land, and that makes the best butter.

D. R. WICKS.

BERKSHIRE COUNTY.

Becket. — Considered as a whole, the season has been a profitable one. Corn and grass have been fairly satisfactory, and potatoes would have been but for blight. Oats and apples have been practically failures. Season not as favorable for the production of milk and butter as last season. Cream sent to Hinsdale creamery. Dairying about as good as any business on the farm. Chief drawbacks are high prices of feed and the distance apart of patrons who furnish cream; also distance from markets.

W. H. SNOW.

Dalton. — Considered as a whole, the season has not been a profitable one. Early potatoes, tomatoes, cabbages and beans were fairly satisfactory, and late potatoes practically a failure. Season has been favorable for the production of milk and butter.

Prices of dairy products fully as good as in former seasons. Consider dairying profitable if properly carried on. Drawbacks are lack of confidence in each other, and failure to work together. If the farmers would stand by each other and support their creamery, it would be better for all. Also, failure of farmers to make use of the silo.

W. B. BARTON.

Cheshire. — More rain in July and less since would have pleased most of the farmers in this section. Considered as a whole, however, the season has been a profitable one. Hay, corn, potatoes, turnips and cabbages have been fairly satisfactory. Oats about half a crop. Season has been favorable for the production of milk and butter. Considerable cheese made here. Do not think farmers are paid enough for their produce. Lack of good help seems to be uppermost as a drawback in dairying.

L. J. NORTHUP.

BRISTOL COUNTY.

Berkley. — Considered as a whole, the season has not been a profitable one. Strawberries and onions have been fairly satisfactory, late potatoes and cabbages have been practically failures. About an average season for the production of milk and butter. Prices of dairy products a little below the average of former seasons. Milk all sold. Very little butter made. Do not consider dairying profitable, at present prices. Chief drawbacks are too many in the business and poor pastures, which compel the feeding of much grain.

R. H. BABBITT.

North Dartmouth. — Season fairly profitable. Potatoes and corn, particularly ensilage corn, and most garden truck, fairly satisfactory. No crops practically failures. Season favorable for the production of milk and butter. Dairy products have been about as usual in price, and are mostly shipped as milk to city consumers. Consider dairying profitable when managed skillfully. Perhaps the rise in feeding material, with the present prices of dairy products, the greatest drawback.

L. T. DAVIS.

Somerset. — As a whole, the season has been a profitable one. Hay, potatoes, small fruits and corn were fairly satisfactory, while apples, oats and rowen were practically failures. The season has been favorable for the production of milk and butter.

Lower prices for dairy products have prevailed. Most of our farmers sell their milk to the milkmen. Do not consider dairying profitable, at the present price of milk, which is twenty-five cents per eight-quart can. We want a creamery to use up the surplus milk.

JOSEPH GIBBS.

DUKES COUNTY.

West Tisbury. — Considered as a whole, the season has been a profitable one. Hay, corn and potatoes have been fairly satisfactory. Fruit has been practically a failure. Season has been favorable for the production of milk and butter. Dairy products have averaged in price with former seasons. Milk is sold at summer resorts, and butter for local consumption. Dairying barely profitable, owing to lack of a permanent market.

WM. J. ROTCH.

ESSEX COUNTY.

Ipswich. — As a whole, the season has not been a profitable one. Hay, early potatoes (where they did not rot), and corn on low land, with garden vegetables, were fairly satisfactory. Most late potatoes have rotted, and corn for grain and silo on dry land; apples and pears were practically failures. Season favorable for the production of milk and butter, except from last of June to middle of August. Prices of dairy products lower, when compared with former seasons. They should be twenty-five per cent higher, to give a cash profit. Creamery here. The want of ice has been a serious drawback to dairying this season. Not as much grain has been fed this year as last. Many farmers are thinking it best to get less milk, and have smaller grain bills.

O. C. SMITH.

Marblehead. — Season fairly profitable. Cabbages and potatoes fairly satisfactory, and squash practically a failure. Season favorable for the production of milk and butter. No deviation in prices of dairy products which are retailed. Consider dairying profitable. Chief drawbacks are lack of patronage, high rent and land taxes.

WM. S. PHILLIPS, Jr.

South Byfield. — Season hardly a profitable one for our farmers. All crops fairly satisfactory, except potatoes and apples. Season favorable for the production of milk and butter. Local causes have deprived a good many of us of a market for dairy products;

three months no sale at all. Probably fifty per cent of the dairy products sold at a loss. In August, one-half of milk sold to contractors netted twelve cents per can of eight and one-half quarts. If oleo continues to be colored, the small farmers in this section are ruined. Careful investigation of the dairy business, for the purpose of establishing a creamery in which I have taken stock, makes the above seem a fair and logical conclusion.

G. W. ADAMS.

FRANKLIN COUNTY.

Ashfield. — An average season. Corn and hay fairly satisfactory, and apples, oats and barley practically failures. Season fairly favorable for the production of milk and butter. Prices of dairy products somewhat lower than in former seasons. Cream collected by co-operative creamery. This locality is well adapted for dairying. Chief drawbacks are low prices of dairy products, pork and beef, and abortion in cows. We consider the depreciation of farm property the greatest drawback to farming.

A. G. HOWES.

Conway. — Considered as a whole, the season has been a profitable one for our farmers, and all crops have been fairly satisfactory. Generally the season has been favorable for the production of milk and butter. Prices of dairy products rather better than last year. Generally, dairying is profitable for our farmers, and we think we have the best co-operative creamery in the State. The chief drawbacks at present to the carrying on of the dairy industry are the sale of counterfeit butter, abortion in cows, and the high cost of meals and feed. The sheep industry is about ruined in this section, on account of dogs; whole flocks destroyed in one night.

J. C. NEWHALL.

Deerfield. — The season as a whole has been wet, but crops have done well except oats, which were a very poor crop. Season has been favorable for the production of milk and butter. Dairy products a good average in price. Cream is sold in Boston to some extent. The butter is sold in the local markets and in Boston. Consider dairying as profitable as anything for our farmers.

CHARLES JONES.

New Salem. — Season not very profitable for our farmers. Hay, corn and pasturage were fairly satisfactory. Potatoes and apples were practically failures. Season favorable for the produc-

tion of milk and butter. Prices of dairy products a fair average with the past two or three seasons. Dairying as profitable as any branch of farming, unless it be poultry. Chief drawback is the low price of butter, though prices are better now; and, as grains are high, we hope prices may be maintained firm throughout the season.

DANIEL BALLARD.

HAMPDEN COUNTY.

Brimfield. — As a whole, it has been as good a year if not better than we have had for some time. Wages were so high we did not attempt to do more than we could do ourselves, and what has been done we did ourselves and have the profit, if any. Hay, corn and grass have been fairly satisfactory, and oats, potatoes and all fruits practically failures. The season has been favorable to the production of milk and butter, though the drouth troubled us for some four weeks. Prices of dairy products as good as for three or four years back. Make butter at the factory, and also send milk to Boston. Do not consider dairying profitable, and still it is as good as most things, if not the best. The chief drawbacks are cost of production and insufficient pay for what is produced.

S. W. BROWN.

Holyoke. — Season fairly profitable. Corn and grass fairly satisfactory, and potatoes and fruit practically failures. Season favorable for the production of milk and butter. Milk is sold. Consider dairying profitable, while the chief drawback is the credit system. There has been about one-fourth the usual amount of apples, and in the districts where there are any, there are more than at first expected.

J. C. THORPE.

West Springfield. — Considered as a whole, the season has been a profitable one. Grass, rye, potatoes, corn, strawberries and cabbages have been fairly satisfactory, and apples practically a failure. Season has been exceptionally favorable for the production of milk and butter, and prices received have been a little lower than last year. Milk is the most reliable of our farm products, although the margin of profit is small at present prices. Abortion in cows and unjust competition by bogus products are the chief drawbacks to the carrying on of the dairy industry. Our milk is sent to Springfield, Holyoke and Chicopee markets. The Springfield Milk Association disposes of the milk of quite a section about here.

N. T. SMITH.

Wilbraham. — As a whole, the season has been perhaps an average one, but, considered with the profits of other industries, hardly a profitable one. Corn, rye and grass have been above the average; oats a failure; potatoes rotted badly. Dairy products were fully an average, but an overproduction has caused a decline in prices fully ten per cent. At the present prices of grain, dairying cannot be carried on with profit.

F. E. CLARK.

HAMPSHIRE COUNTY.

Belchertown. — Season hardly profitable. Hay, corn and rye fairly satisfactory, and late potatoes, fruit and oats practically failures. Season fairly favorable for the production of milk and butter. Prices of dairy products fully up to the average of former seasons. Butter is sold at our local markets, and to some extent milk is shipped to Boston. Consider dairying fairly profitable. Chief drawbacks are want of experience and concurrent action.

H. C. WEST.

Hadley. — Consider the season a profitable one. Hay, corn, rye, potatoes and tobacco fairly satisfactory, and oats and fruit practically failures. Season favorable for the production of milk and butter. Some who patronize the creamery got out of ice. Prices of dairy products better than for the last two or three years. Cream goes to the creamery. Do not consider dairying profitable for our farmers. Chief drawback is low prices caused by the manufacture of oleo.

L. W. WEST.

South Hadley Falls. — Season not a profitable one, considered as a whole. Hay and corn fairly satisfactory. Good yield of potatoes, but some pieces rotted badly. The cabbage crop practically a failure, because there is so much of it that it will not sell for anything. Season not wholly favorable for the production of milk and butter; the latter part of the season too wet, making the feed too light and flashy. Dairy products have averaged in price with former seasons. Dairying hardly profitable, as there are too many in the business, and consequently too much competition.

H. W. GAYLORD.

Southampton. — Think the season has been profitable. Hay, corn, early potatoes and tobacco have been fairly satisfactory, and oats, late potatoes and apples practically failures. Think

the season rather better than the average for the production of milk and butter. Prices of dairy products, on the whole, fully an average. Consider dairying as profitable or more profitable than any other branch of farming. We all want higher prices for our dairy products.

C. B. LYMAN.

MIDDLESEX COUNTY.

Ashland. — Season has been a profitable one. Corn and onions fairly satisfactory, and apples practically a failure. Also potatoes have rotted badly. Season has been favorable for the production of milk and butter. Prices of dairy products much the same. The principal product is milk, which is sent to Boston. Chief drawbacks in dairying are poor management and perhaps high taxes.

A. R. STEVENS.

Concord. — On the whole, the season has been a profitable one for our farmers. Berries, potatoes and tomatoes have been fairly satisfactory. The peach crop was almost a total failure, and the apple crop was small. Season, except in July and August, has been favorable for the production of milk and butter. Prices of dairy products have been about the same as usual. The milk is sold to contractors. Do not consider dairying profitable. Farmers make milk to make manure, and raise something else to make money. The chief drawback is the large per cent taken out by the contractors.

W. H. HUNT.

Groton. — Do not consider the season a profitable one, as a whole. Grass has been fairly satisfactory, and apples practically a failure. Season favorable for the production of milk and butter. Dairy products low in price until middle of September. They are marketed in Boston. Consider dairying profitable, if anything is profitable. Chief drawback in dairying at present is low prices. Up to the present there is no demand for the surplus hay. Have seldom known the price of hay so low, and even at the low price no demand. Our apple crop, which generally yields a large revenue, is an almost total failure.

DANIEL NEEDHAM.

Wilmington. — Season has been a profitable one. Hay, corn and vegetables have been fairly satisfactory. Apples, beans and meadow cranberries have been practically failures. Season has been favorable for the production of milk and butter. Dairy

products have compared favorably in price with former seasons. Milk sold at the door. Do not consider dairying profitable, and I think this is the general feeling. Farmers' wives do not like to make butter.

C. W. SWAIN.

NANTUCKET COUNTY.

Nantucket. — Season not a profitable one for our farmers. Hay and oats fairly satisfactory, and corn and potatoes practically failures. Season has been favorable for the production of milk and butter. Prices of dairy products about the same as in former seasons. Milk sold. Think dairying profitable for our farmers. Chief drawback is lack of help.

C. W. GARDNER.

NORFOLK COUNTY.

Franklin. — Corn, hay and grass have been fairly satisfactory. Apples and potatoes practically failures. July was a dry month, and cows went back on milk badly. The rest of the season was favorable. Butter five per cent higher, and milk the same as last year. Milk is sent to Boston. Farmers cannot make dairying pay two per cent on investment. Chief drawback is that farmers are over-taxed and under-paid.

C. M. ALLEN.

Medway. — Very little profit this season. Corn, blackberries, hay and late cabbage have been fairly satisfactory. Potatoes, two-thirds of a crop; squash, one-half a crop; peaches and apples, one-fourth of a crop. Season favorable for the production of milk and butter. Milk sent to Boston. There is no profit in dairying for me. The difficulty is in getting a new dollar for an old one.

MONROE MORSE.

PLYMOUTH COUNTY.

Halifax. — Season has been profitable, and there have been no entire failures. As a whole, think this season has been better than the average season for the production of milk and butter. Except in June, prices of dairy products have been higher than for several years. Do not consider dairying profitable, but we have to keep cows to make manure. Chief drawbacks are lack of pasturage and co-operation. The butter industry is on the gain. Last year some of the citizens helped build the Plymouth County Co-operative Creamery. This gave the butter-making business quite a boom in this vicinity.

G. W. HAYWARD.

Hanson. — Considered as a whole, the season has been a profitable one. Potatoes and nearly all garden stuff have been fairly satisfactory. Beans have not ripened. Season favorable for the production of milk and butter, except during time of drouth. Prices of dairy products about the same as in former seasons. Dairy products sold to neighbors and local stores. Consider dairying profitable for our farmers, but the chief drawback is that they cannot sell their butter readily. Ten or twenty years ago the farmer depended much upon his wood-lot to make ends meet, but now hard wood can scarcely be sold at any price.

Dr. F. S. THOMAS.

Middleborough. — Season not a profitable one. Corn, onions and hay fairly satisfactory, and fruit practically a failure. Season favorable for the production of milk and butter. Prices of dairy products about the same as last year. Milk sold. Do not consider dairying profitable, owing to too low prices for milk and too high for grain.

A. H. EATON.

WORCESTER COUNTY.

Barre. — Season fairly profitable for our farmers. Corn and grass fairly satisfactory. Oats, potatoes and fruit practically failures. Season favorable for the production of milk and butter. Butter lower in price, as compared with former seasons. Milk sold in Boston. Small profit in dairying. Chief drawbacks are overproduction and not strength in the milk union.

J. L. SMITH.

Bolton. — While many crops have been light, on account of the early drouth or the excessive autumn rains, prices obtained for the same have been very satisfactory; so that, on the whole, we sometimes think half a crop is worth about as much as one of abundance. Potatoes, apples, onions, squashes and turnips are selling well; and, taking the season as a whole, we think that the farmer who has labored diligently through dry and wet in the care of his crops has no reason to complain of the remuneration received for his labor. Season has been favorable for the production of milk and butter. The milk is nearly all sold to supply large villages, or shipped to Boston. Dairying not profitable, at present prices, although it may pay as well as any branch of farming. The only trouble is that there is too much milk made for the demand.

H. F. HAYNES.

Harvard. — Hardly a profitable year for our farmers. Hay, corn, peaches and grapes have been fairly satisfactory. Apples, oats, and in many cases potatoes, have been practically failures. Season has been favorable for the production of milk. Prices of dairy products about the same as last season. Milk sold in Boston. Dairying not profitable for the majority of the farmers, but it depends somewhat on the farm. Drawbacks are low price of milk, and the farmers will not unite together to obtain what rightly belongs to them.

PRESTON KNIGHT.

Leominster. — As a whole, the season is considered a profitable one. It has been favorable for the production of milk and butter. Price of butter lower than in former seasons, and price of milk about the same. Consider dairying profitable, but at present prices of grain the profit is small. In making butter, the farmer has to compete with oleo and butter substitutes, and this reduces the price. A well-managed farm, let the season be what it may, will produce some crop that a profit can be derived from. One great failure is cultivating too much land, and the loose manner of conducting the business part. Too many trust to what the purchaser says his goods are worth, and this with him must be the price. Conduct farming on a sound footing, and, with what benefit we get from the State, farmers can live.

W. B. HOSMER.

North Dana. — Considered as a whole, the season has been a profitable one for our farmers. Hay and corn have been fairly satisfactory. Potatoes have been practically a failure. Season has been favorable for the production of milk and butter. Dairy products about an average in price. Butter is the chief dairy product. Do not consider dairying profitable for our farmers. The low price of butter, on account of the manufacture of imitation butter, is the chief drawback. We need a law to prevent the counterfeiting of butter, which will make a better market for the pure article.

E. A. ALBEE.

THE DAIRY INDUSTRY IN MASSACHUSETTS.

An idea of the extent and importance of the dairy industry is gained when it is considered that, according to the census of 1885, of the \$47,756,033 worth of agricultural products, \$13,080,526, or 27.39 per cent, were classed as dairy products; while hay, straw and fodder came second, with \$11,631,776, or 24.36 per cent; and vegetables third, with \$5,227,194, or 10.95 per cent. Of the dairy products, milk represented \$10,312,762, or 21.60 per cent; butter, \$2,531,071, or 5.30 per cent; cream, \$202,706, or 0.42 per cent; and cheese, \$33,987, or 0.07 per cent. Adding the value of the dairy products classified as food preparations in the volume of manufactures, and the aggregate swells to a round \$13,250,000.

The following table, compiled from the census of 1885 (agriculture), will illustrate the growth of this industry during the forty years from 1845 to 1885 inclusive. To this table are also added statistics from the same source, relative to beef and veal:—

	GOLD VALUES.		CURRENCY VALUES.		GOLD VALUES.
	1845.	1855.	1865.*	1875.†	
Butter, pounds, .	7,688,556	8,116,009	3,745,293	7,922,431	9,685,539
Total value, .	\$1,116,709 00	\$1,678,558 00	\$1,360,248 00	\$2,747,878 00	\$2,531,071 00
Value per pound,	15	21	36	35	26
Cheese, pounds, .	7,262,637	5,762,776	3,560,481	1,280,234	359,124
Total value, .	\$398,174 00	\$464,251 00	\$582,353 00	\$162,826 00	\$33,987 00
Value per pound,	05	09	16	13	095
Cream, gallons, .	-	-	-	-	263,158¾
Total value, .	-	-	-	-	\$202,706 00
Value per gallon,	-	-	-	-	77
Milk, gallons, .	2,850,412	3,300,916	10,079,180	35,698,159	72,528,628
Total value, .	\$304,917 00	\$755,888 00	\$1,956,187 00	\$5,934,671 00	\$10,312,762 00
Value per gallon,	11	23	19	17	14
Beef, pounds, .	-	-	70,825,396	12,258,542	10,668,941
Total value, .	\$225,918 00	-	\$8,188,564 00	\$1,068,154 00	\$718,932 00
Value per pound,	-	-	12	09	067
Veal, pounds, .	-	-	4,977,436	3,598,942	4,570,870
Total value, .	-	-	\$62,895 00	\$363,517 00	\$391,169 00
Value per pound,	-	-	11	10	086

* Premium, 1.57.

† Premium, 1.12.

In the column for 1885 are included the total quantity and value of milk at the price of new milk, the total quantity and value of cream sold or used as cream, and the total quantity and value of butter and cheese made on farms.

The number and value of the animals associated with the dairy industry is important in this connection; and it is found that the census of 1885 gives the number of milch cows on farms as 162,847, valued at \$6,156,130; and the number of other bovine animals as 99,339, valued at \$2,331-852; or a total of 262,186 animals, valued at \$8,487,982.

. In the aggregates of polls, property, taxes, etc., as assessed May 1, 1885, the number of cows is given as 167,817, and the number of neat cattle other than cows as 57,044, or a total of 224,861; while the number as assessed May 1, 1889, is found to be 192,307 cows and 63,884 neat cattle other than cows, or a total of 256,191.

According to the census of 1885, the value of the manure made on farms is given as \$3,090,189; and it is estimated that not less than \$2,000,000 of this amount can be credited to the dairy industry. Also, the production of pork is given as 16,546,752 pounds, valued at \$1,063,180; and the making of this pork to a large extent depends upon the use of the so-called wastes of the dairy.

From the table it would appear that from 1875 to 1885 cheese fell off apparently nearly three-fourths as regards quantity. This is a fact, no doubt, as regards the farm; but the statistics of manufactures, under which heading cheese is now returned as a food preparation, show that this decrease in quantity is due largely to a change rather from agriculture to manufactures. In the volume on manufactures we find credited under food preparations 613,087 pounds of cheese, valued at \$65,491; which, added to the amount reported as made on farms, swells the aggregate to 972,211 pounds, valued at \$99,478.

In Massachusetts the first cheese factory went into operation in April, 1864. Under a call signed by Dwight Ellis of Warren and a few others, a meeting was held in West Brookfield, Feb. 1, 1866, at which the Massachusetts Cheese Manufacturers' Association was formed. At this meeting four factories reported having made an aggregate of 364,178

pounds of cheese during the season of 1864, the net price of which was \$19.60 per hundred pounds. During 1865 eleven factories were in operation, — some of them, however, only a short time, — and the same number in 1866.

In the latter year nine of them reported an aggregate capital invested of \$44,866.57; that the whole amount of milk was 10,604,518 pounds, from which was made 1,072,705 pounds of cheese, which brought to the farmers, after paying all expenses, \$175,240.62. Early in 1869 it was reported that there were not less than twenty factories in successful operation in Massachusetts. Ten of these reported an aggregate of 1,095,850 pounds of cheese made in 1868. The aggregate capital in 1871 of thirteen factories was reported as about \$60,000; that 10,233,450 pounds of milk were used and 948,876 pounds of cured cheese produced. Of these factories the New Braintree led, with an invested capital of \$9,000; using 1,679,351 pounds of milk, making 165,552 pounds of cured cheese, yielding a net income of \$10.71 per hundred pounds. It is impossible at the present time to state the date when this association was dissolved. “The organization had its inception at the time of the introduction of the factory system of making cheese. The factory at Brimfield and the South Factory at Barre started the same year, and were the first in the New England States to adopt the system. It was a new era in the dairy business. The meetings of the association lasted two days and one evening, with lectures from the best then known speakers, — very much such meetings as the Board now hold. Probably they were a stimulus to the Board, and, indirectly, the mother of ‘farmers’ institutes;’ and they only ceased when the Board and institutes took up the work, and the selling of milk became better than cheese-making, with Canada to compete with.”

The exact number of cheese factories now in operation in the Commonwealth is not known, but it is believed there are but four. Returns from a portion of these only have been received. It is estimated, however, that these factories in 1889 made about 150,000 pounds of cheese, using some 1,750,000 pounds of milk, and netting about 9 cents per pound. In Boston the last seven months the wholesale price

of best cheese has ranged from 9 cents to 12 cents per pound; and the retail price of old cheese has ranged from 19 cents to 20 cents, and new cheese from 10 cents to 16 cents per pound.

In the census of 1885 (manufactures) the product of creamery butter is given as 7,800 pounds, valued at \$2,700, and the amount of butter not specified as 189,545 pounds. Most of the twenty-seven co-operative creameries (or butter factories) now making butter were established since this census was taken, and returns to this office in January last from the twenty-four then in operation gave the amount of butter made in 1889 as 2,193,983 pounds, yielding an average price of about 26 cents per pound, or an aggregate of some \$570,000.

There are also three co-operative milk associations, making butter from their surplus milk; and in 1889 it is estimated that they made some 135,000 pounds. Considerable butter is also made by milk contractors from surplus milk. Probably the amount of butter made on farms has been somewhat lessened by the establishment of co-operative creameries, but it is impossible to state to what extent.

As illustrative of the condition of the butter market in Boston during the past six months, the following compilation from the market reports of the "New England Farmer" is given:—

MAY 1.—Butter market remains in good, healthy condition. Arrivals of choice fresh creamery taken as fast as they arrive. It is estimated that last year's business shows 50,000 tubs as an actual surplus over consumption, which was the cause of the great depression in the market which was so marked during January and February. The bulk of this was sold at great loss to the holders. The market reporter of the "Boston Journal" states that the money lost by Boston butter men during the last twelve months must have been not less than \$100,000. Prices quoted: *Wholesale*. Extra creamery, 20 and 21 cents; firsts and extra firsts, 15 and 19 cents; New England dairy, 12 and 16 cents. *Retail*. Print, 28 and 30 cents; best tub, 25 and 28 cents; good tub, 15 and 18 cents.

JUNE 1.—For the first time this spring, butter has begun to accumulate this week, which makes the market very weak and shaky. The quality of the butter coming in is improving. Prices quoted: *Wholesale*. Extra creamery, 15 and 16 cents; firsts

and extra firsts, 11 and 13 cents; New England dairy, 10 and 13 cents. *Retail*. Print, 25 cents; best tub, 23 cents; good tub, 15 and 18 cents.

JULY 1. — Butter market has ruled firm on fine grades during the week, with a pretty good trade. Consumption is running along at a full rate. Buyers for cold storage seem determined to hold off, if they cannot get what they want at low prices. Prices quoted: *Wholesale*. Extra creamery, 15 and 15½ cents; firsts and extra firsts, 11 and 13 cents; New England dairy, 10 and 12 cents. *Retail*. Print, 25 cents; best tub, 23 cents; good tub, 15 and 18 cents.

AUGUST 1. — The condition shows a tendency to improve, although the general market is as yet dull and trade is flat, much of the receipts of ordinary grades going into cold storage. But for the best butter there is an improved demand, and the receipts are not large enough to supply it. The shrewdest judges claim that the production of butter so far this year has been less than it was a year ago, and that there are from 25,000 to 30,000 fewer packages in cold storage. Prices quoted: *Wholesale*. Best New England creamery, 19 and 20 cents; extra firsts, 15 and 17 cents; choice New England dairy, 16 and 17 cents; common grades as to quality down as low as 6 cents. *Retail*. Print, 25 cents; best tub, 23 cents; good tub, 15 and 18 cents.

SEPTEMBER 1. — The advance still continues, but is getting to such a point that consumers are remonstrating, and, if it goes much higher, the inevitable reaction will follow. Prices quoted: *Wholesale*. Best New England creamery, 24 and 25 cents; fine dairy selections, 21 and 22 cents; average lots, 17 and 20 cents. *Retail*. Print, 30 and 33 cents; best tub, 28 and 30 cents; good tub, 18 and 22 cents.

OCTOBER 1. — Market in a good, healthy condition. Trade is inclined to be dull. The books of the chamber of commerce show that September receipts run ahead of last year; but the total receipts for the past five months are smaller than for the same time a year ago, — a decrease of about 40,000 tubs, as compared with last season. Prices quoted: *Wholesale*. Best New England creamery, 24 and 25 cents; fine dairy selections, 19 and 21 cents; average lots, 16 and 18 cents. *Retail*. Print, 30 and 35 cents; best tub, 30 and 33 cents; good tub, 20 and 25 cents.

NOVEMBER 1. — Butter market in a firm, healthy condition. Fine fresh receipts are kept sold up, and, although the production is unusually large for the season, there is no accumulation in any grade. The prevailing opinion is that prices will go no lower, and that the next change will be an upward one. Prices quoted:

Wholesale. Best New England creamery, 25 and 26 cents; fine dairy selections, 20 and 22 cents. *Retail.* Print, 33 and 35 cents; best tub, 30 and 33 cents; good tub, 20 and 25 cents.

In referring to the milk industry, it is necessary to consider it from the Boston stand-point, as most of the surplus milk produced is bought by contractors and disposed of in said city. Last spring the contract agreed to by the committees of the milk contractors and the producers' union was that the price of milk in Boston for the six months commencing April 1, 1890, should be 32 cents per can of $8\frac{1}{2}$ quarts. The contractors agreed to pay the regular price for all milk for use as milk (or cream), and for 5 per cent additional as a "margin;" but for the excess beyond this (known as "surplus milk") they were to pay its value for butter purposes, the price depending on the jobbing price of fresh creamery butter and the grading of prices of milk (owing to the varying conditions at different points), to be arranged between each route (or car) and its own contractor. For the six months commencing Oct. 1, 1890, it is thought the price will be 36 cents per can of $8\frac{1}{2}$ quarts. The producers want 38 cents, and offer to compromise on 37 cents; but the contractors say that they can get all the milk they need for 36 cents. The average freight on the milk that comes to Boston is about 10 cents per can. Taking out one cent per can for surplus, leaves 25 cents per can the winter average, and 21 cents the summer average at the car. This gives the producer on the average about 3 cents per quart in winter, and $2\frac{1}{2}$ cents in summer. From this must be deducted the cost of getting the milk to the car.* The retail price of milk in Boston is from 7 to 8 cents per quart from October 1 to April 1, and from 6 to 7 cents the rest of the year.

The following, condensed from the thirty-first annual report of the inspector of milk and vinegar of the city of Boston, 1889, will be of interest in this connection:—

Estimated number of quarts of milk for average daily consumption in 1889 was 207,493. It can be said that the quality of the milk of Boston, as a whole, is very good.

* Bulletin No. 2, June, 1890.

For the proper enforcement of a law to prevent the adulteration of milk, it is necessary that a certain fixed standard of quality shall be prescribed. In this Commonwealth the statute requires that, to be of good standard quality, milk must yield on analysis not more than 87 per cent of watery fluid, nor less than 13 per cent of milk solids, nor less than 9.75 per cent of milk solids exclusive of fat, except during the months of May and June, when it shall contain not less than 12 per cent of milk solids.

The only methods of adulteration at all employed are the very simplest possible, and include skimming, watering and coloring. Milk, as purchased in Boston, has commonly passed through several hands: the producer, the contractor, the dealer who delivers from a wagon, and to a great extent the shop-keeper. The practice of adulteration is not confined to any class of dealers, and is carried on by individuals in any branch of the business, who are tempted to larger profits than they can justly earn; for a man is not necessarily honest because he is a producer, nor is he to be considered dishonest merely because he drives a milk wagon or sells milk over the counter. In several instances complaints against milkmen have been withdrawn, on satisfactory evidence that the dairies supplying them were at fault. Of store-keepers it may be said that many of them keep milk for sale merely as an accommodation to their customers, and not for profit, and that as a rule they deliver the milk as it is received. Of those who sell from wagons, the majority never tamper with their milk; many do occasionally, especially when the supply runs short; and others are habitually dishonest. The addition of coloring-matter to milk is done almost wholly after it leaves the hands of the producers. The materials used for this purpose are caramel (burnt sugar) and annatto.







