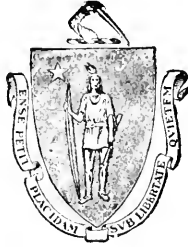


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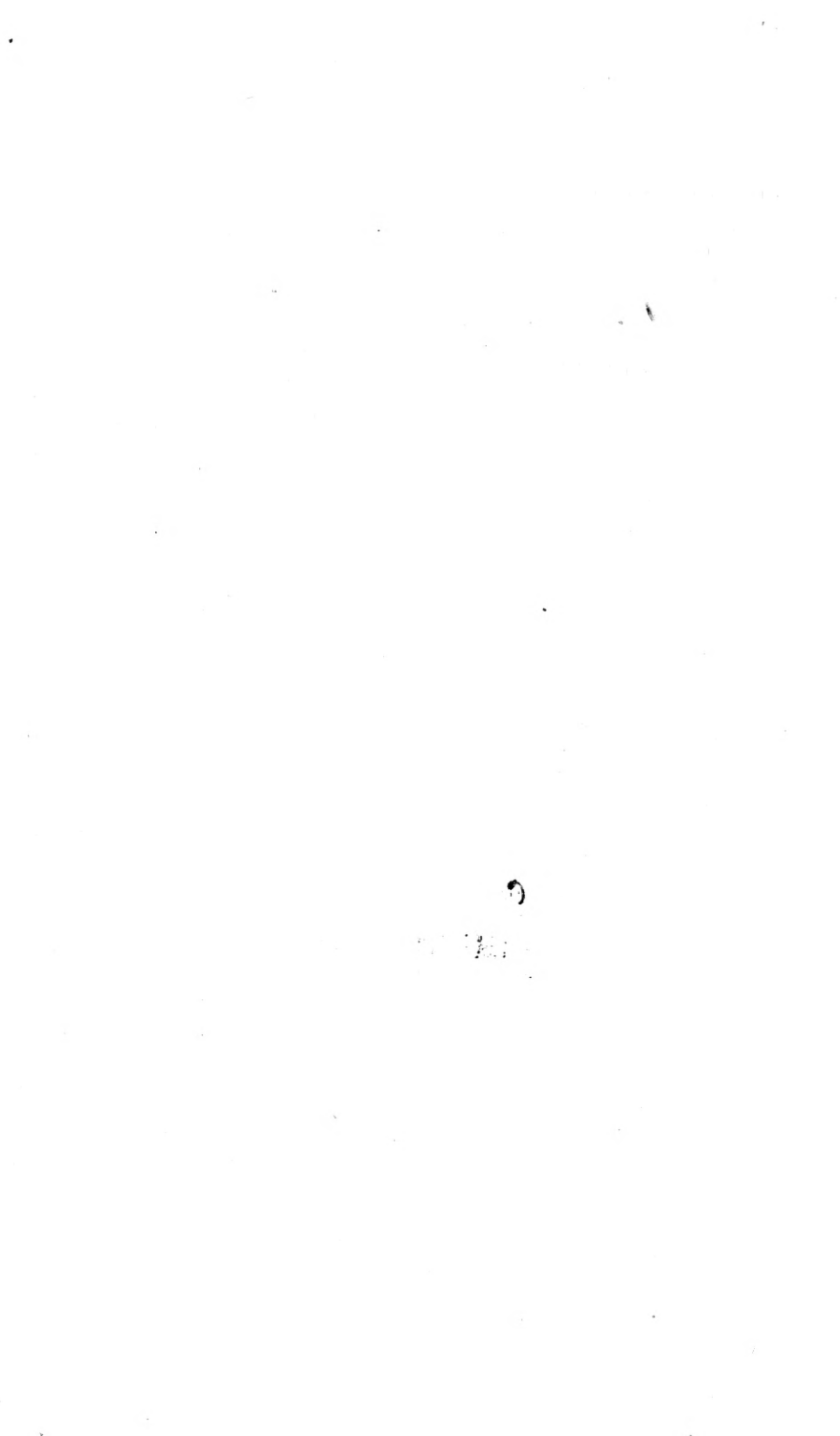


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MASSACHUSETTS

CROP REPORT

Vol. 26

1913

Quarter-century anniversary number..
May

Peach growing in western Mass....June

Co-operation.....July

Diversified farm accounting....August

Farm ice houses.....September

SERIES OF 1913.

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JULY 1913

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MASSACHUSETTS

CROP REPORT

FOR THE

MONTH OF MAY, 1913.

QUARTER-CENTURY ANNIVERSARY NUMBER.

ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.

WILFRID WHEELER, *Secretary.*

ENTERED JUNE 3, 1904, AT BOSTON, MASS., AS SECOND-CLASS MATTER,
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CROP REPORT FOR THE MONTH OF MAY, 1913.

OFFICE OF THE STATE BOARD OF AGRICULTURE,
BOSTON, MASS., June 1, 1913.

Herewith is presented the Crop Report for the month of May, the first number of volume 26, series of 1913. An effort will be made this year to secure the information in regard to crop and weather conditions from our correspondents in the various parts of the State in such form as will make possible deductions and conclusions which will be more accurate and definite than those contained in previous reports. So far as is practicable our correspondents will report conditions on a percentage basis; in this way the information will lend itself more readily to classification and tabulation. The general lines of investigation which have been pursued since the beginning will be continued, however.

A new, and we consider a very valuable, feature of the reports this year will be the publication of returns from special correspondents upon the different agricultural specialties in the State. This month a beginning will be made with the following specialties: fruit growing, market gardening and cranberry growing. As the work progresses it will be made more and more valuable in the results obtained, it being possible, by observation and attention to detail, to so improve the methods employed as to bring about such results.

The October, 1912, issue of the Crop Report closed the first twenty-five years' existence of this publication. In view of the fact that several of our correspondents have served the Board of Agriculture, and, through the Board, the farmers of the Commonwealth, in this capacity for this whole period of time, and without pay, in money at least, it was deemed expedient to give recognition of their services by the publication of a quarter-century anniversary number of the Crop

Report. Following the "Notes of Cranberry Crop Correspondents" will be found a brief account of those correspondents who have served the full twenty-five years, and also of those who were in the service October, 1912, and who had acted for varying lengths of time. Herewith is extended to all those who have so kindly assisted in the work the hearty and grateful appreciation of the Board of Agriculture for their efforts.

CROP CONDITIONS MAY 1, 1913.

The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture estimates, from the reports of correspondents and agents of the Bureau, as follows:—

On May 1 the area of winter wheat to be harvested was about 30,938,000 acres, or 4.5 per cent (1,449,000 acres) less than the area planted last autumn, but 16.4 per cent (4,367,000 acres) more than the area harvested last year, viz., 26,571,000 acres.

The average condition of winter wheat on May 1 was 91.9, compared with 91.6 on April 1, 79.7 on May 1, 1912, and 85.6, the average for the past ten years on May 1.

A condition of 91.9 per cent on May 1 is indicative of a yield per acre of approximately 16.6 bushels, assuming average variations to prevail thereafter. On the estimated area to be harvested, 16.6 bushels per acre would produce 513,571,000 bushels, or 28.4 per cent more than in 1912, 19.3 per cent more than in 1911, and 18.3 per cent more than in 1910. The out-turn of the crop will probably be above or below the figures given above, according as the change in conditions from May 1 to harvest is above or below the average change.

The average condition of rye on May 1 was 91, compared with 89.3 on April 1, 87.5 on May 1, 1912, and 89.6, the average for the past ten years on May 1.

The average condition of meadow (hay) lands on May 1 was 88.5, compared with 85.7 on May 1, 1912, and a ten-year average on May 1 of 88.5.

Stocks of hay on farms May 1 are estimated as 10,828,000 tons (14.9 per cent of crop), against 4,744,000 tons (8.6 per cent) on May 1, 1912, and 8,673,000 tons (12.6 per cent) on May 1, 1911.

The average condition of pastures on May 1 was 87.1, compared with 81.7 on May 1, 1912, and a ten-year average on May 1 of 86.1.

Of spring plowing 67.2 per cent was completed up to May 1, compared with 52.8 per cent on May 1, 1912, and a ten-year average on May 1 of 65.7.

Of spring planting 57 per cent was completed up to May 1, compared with 48.9 per cent on May 1, 1912, and a seven-year average on May 1 of 54.3.

WEATHER.

SUMMARY, JAN. 1 TO MAY 1, 1913.

January. — The month was the mildest of its name for many years in this section, with very little snow or ice. The average temperatures over the State ranged from 32° in some interior sections to 40° in coast sections, giving excesses in the various sections for the month of 8 to 11°. No zero temperatures were recorded during the month. Notwithstanding the high mean temperature of the month there were no unusual daily extremes in temperature. The precipitation was below the average in nearly all sections, with the deficiencies ranging from 0.25 of an inch to over 2 inches. The wind movement of the month was somewhat more than the average, although there were no destructive storms.

February. — The month was somewhat colder than usual, without severe storms, only a moderate snowfall, and less than the average amount of precipitation. At the close of the month there was no snow on the ground. The low temperature of the month made ice of good, though less than the average, thickness for February, and a good crop was harvested. There were no marked extremes in the temperatures, and the averages for the month were generally below the normal, the deficiencies ranging from 0.5 to 2°. With slight exceptions the precipitation was deficient in all localities,

the monthly amounts ranging from 0.25 of an inch to nearly 2 inches below the February normal. The snowfall over the section for the month ranged from $\frac{1}{2}$ inch to nearly 14 inches.

March. — The weather was warmer than the seasonal average, with precipitation above the normal. The snowfall was very light, and in some sections there was none. The heavy rains from the 24th to the 27th caused a rapid rise in the rivers, with more or less damage from washouts and overflows in some sections. The monthly amounts of precipitation were above the average in about all sections, with the excesses ranging $\frac{1}{2}$ inch to over 2 inches. The average temperature of the month was the highest for several years, being about 7° above the normal for March. Owing to the light snowfall and the prevailing high temperature the ground was generally bare throughout the month.

April. — The first half of the month was cooler than usual, with frequent light to moderate rains. After the 15th the rainfall was light, with daily temperatures generally above the average and the maximum temperatures ranging in the 80s on a few days. Snow fell in small amounts on the 6th and 7th, but soon melted. The warm weather during the latter part of the month caused a rapid advance in vegetation, so that at the close the season was considerably in advance of the average.

WEATHER OF MAY.

The weather of the month was nearly normal in precipitation, with the temperature somewhat below the average for May. There was very little rain during the first fifteen days, followed by frequent showers during the rest of the month, with moderate to heavy amounts on the 22d and 23d. Easterly winds of moderate force were unusually prevalent, and fogs, generally light, were of quite common occurrence. Notwithstanding the generally fair weather till the 15th, there was much cloudiness, which, together, with the unsettled weather of the latter part of the month, resulted in a marked deficiency in the amount of sunshine. The temperature was above the average until the 17th, after which it was below, with the daily deficiencies ranging from 2 to

10°. The month as a whole was from 1 to 2° below the normal for May. The cool cloudy weather was unfavorable to vegetation, so that the season which was in advance of the average at the beginning of the month had dropped to about normal at the close. Frosts and in some sections light freezes occurred on several nights, chiefly from the 10th to the 13th. Generally speaking the weather of the month was unseasonably cool and wet.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending May 5. — New England. Boston: Sunshine was abundant and conditions were favorable. The rainfall was generally light. The nights were cool the first part of the week in the northern portion, and warm days marked the last part in the southern.

Week ending May 12. — New England. Boston: Fair weather prevailed. The temperature was high the first of the week, but cool nights, with local frosts, prevailed the middle and last parts.

Week ending May 19. — New England. Boston: There were occasional showers, which were beneficial. Conditions were favorable, except for the low temperature, with heavy frost, in the middle of the week.

Week ending May 26. — New England. Boston: Fair weather during the first part was followed by copious, beneficial rains the last of the week. Temperature averaged below normal, and warmer weather is needed.

PUBLICATIONS, NOV. 1, 1912, TO JUNE 1, 1913.

Copies of the Crop Reports for 1912, containing the articles specified as follows, are still available: No. 1, "Pork Making for Massachusetts Farmers;" No. 2, "Irrigation in Massachusetts;" No. 3, "Silos and Silage;" No. 4, "Ducks and Geese;" and No. 5, "Some Suggestions on Barn Building."

The second edition of Bulletin No. 4, entitled "Small

Fruits and Berries," was issued in December, 1912. The material contained in this bulletin was revised and brought up to date, and the bulletin now contains articles by the following well-known authors: Mr. J. H. Hale, Prof. F. A. Waugh, Mr. Geo. T. Powell, Prof. F. C. Sears, Mr. Edw. R. Farrar, Prof. Fred S. Card and Mr. Lucien J. Fosdick. A bibliography of other available literature on fruit culture and upon the various phases of the growing and general care of the different fruits dealt with in the bulletin was compiled and is printed in this publication. An index was also compiled and added to the bulletin, thus greatly adding to the availability of the knowledge contained in the bulletin.

A new series of publications was begun in November, 1912, which will be known as "Circulars." The first edition of Circular No. 1, entitled "The Food Value of Milk," and written by P. M. Harwood, general agent of the Dairy Bureau, was issued in November. Since that time two subsequent editions have been found necessary, so great is the interest in this subject. The third edition, revised, was published in April, 1913, and copies may now be had by applying for them.

It is the intention to reprint the different Nature Leaflets which are of a technical character as circulars, as the stock now in hand becomes exhausted. Following out this plan Nature Leaflet No. 4 has been rewritten by Dr. H. T. Fernald, and has been printed as Circular No. 2, under the title of "Insecticides, Fungicides, and Directions for their Use." After a short discussion of spraying apparatus, and some general suggestions in regard to spraying, he discusses the different insecticides, giving formulas and directions for their preparation. Then follows a similar treatment of the different fungicides, insecticides and fungicides combined, and fumigants. He then takes up the treatment of the insects and diseases attacking the different plants in a concise, direct manner, telling which spray or sprays to use and how and when to apply them. This circular will be sent free upon application.

The fourth edition, revised, of Nature Leaflet No. 5, "The White-marked Tussock Moth," was issued in December, 1912,

and copies are now available. The third edition, revised, of Nature Leaflet No. 38, "How to Plant," and the second edition, revised, of Nature Leaflet No. 41, "The European Elm-leaf Beetle," were issued in February, 1913, and may be had upon application. A separatum from Bulletin No. 5, entitled "The Home Garden," was printed in December, and copies of this are also available.

Copy for the following publications is now in the hands of the printer, or is in course of preparation: Bulletin No. 2, "Apple Growing;" Bulletin No. 3, "Grasses and Forage Crops;" Bulletin No. 6, "Dairying;" Circular No. 3, "Balanced Rations for Dairy Stock;" and Circular No. 4, "Apple Packing for Massachusetts Growers;" also the annual report for 1912.

NOTICES OF MEETINGS AND PUBLIC GATHERINGS.

Summer School of Agriculture and Country Life. — July 1 to August 2 at the Massachusetts Agricultural College, Amherst, Mass. More than thirty courses in agriculture, horticulture, chemistry, botany, entomology, education, sociology, home economics, nature subjects, practical arts, etc. Boys' camp, July 16-23; School for Rural Social Workers, July 16-29; Conference for Rural Community Leaders, July 29-August 2. Expenses low; delightful surroundings. Bulletin describing the school can be had by addressing Wm. D. Hurd, Director, Amherst, Mass.

Summer Field Meeting of the Board of Agriculture. — This will be held August 1, at the fair grounds in the town of Barnstable. The State Grange will hold a Field Day at the same time and place in conjunction with the meeting of the Board of Agriculture. Full particulars in regard to this meeting will be published in the Crop Report for July, and notices will be sent to all post offices and newspapers in that section of the State.

Poultry Conference and Field Meeting of the State Poultry Association. — To be held at the Massachusetts Agricultural College, July 29, 30 and 31. Every live poultryman should attend.

SUMMARY OF GENERAL CROP CONDITIONS.

In the circular to general crop correspondents, returnable May 24, the following questions were asked:—

1. How does the present season compare, agriculturally speaking, with a normal season?

2. What is the condition of pastures and mowings (100 representing normal)? Did fall seeding winter well? What is its condition (100 representing normal)?

3. How did the bloom of the following fruits compare with the bloom in former years (give per cent): apples, pears, peaches, plums and small fruits? What fruits, if any, have suffered from frosts?

4. What insects appear to be doing the most damage in your locality? (Name in order of greatest damage done.)

5. What percentage of planting is already done? How does this compare with an average year?

6. Is farm help scarce or plenty? What proportion can be called good help? (Give per cent.)

7. What are the average wages paid farm help in your vicinity, with board, per month? Without board, per day?

8. Will there be any marked change in the acreage of the usual farm crops?

9. Do you note any new enterprises in the line of agriculture?

10. Are birds doing any appreciable damage in your vicinity? If so, what kinds, and what is the nature of this damage?

Returns were received from 153 correspondents, and from them the following summary was compiled:—

THE SEASON.

The season opened warm, with seasonable rains, and the usual amount of planting seems to have been done up to about the 10th of May. Frosts on this date are reported from several sections, particularly from Hampden County. Subsequently the weather has been cold and dry. Twenty-two correspondents report that the season was early at the start, but later, cold and backward. Of a total of 150 reporting, 24, or 16 per cent, declare the season to be early; 57, or 38 per cent, normal; 69, or 46 per cent, late. Rains and warmer weather at time of going to press improve the prospect for a good growing season over that derived from returns of May 24.

PASTURES AND MOWINGS.

The condition of pastures and mowings is: Hampshire, 93.9; Franklin, 92.9; Plymouth, 91.7; Bristol, 90; Dukes, 90; Essex, 89.5; Middlesex, 88.8; Hampden, 88.2; Norfolk, 86.9; Worcester, 86.1; Barnstable, 83.9; Berkshire, 83; Nantucket, 75; the State, 88.3. The season at the start augured well for grasslands, but the lack of precipitation in May gave it a setback which only occasional rains and warm weather can offset.

FALL SEEDING.

Fall seeding wintered well in most cases, although there are scattering reports to the contrary. The average condition on May 24 was: Hampshire, 99.6; Plymouth, 96.2; Franklin, 94.8; Barnstable, 93.9; Bristol, 93.3; Essex, 92.2; Norfolk, 91.2; Middlesex, 90; Hampden, 89.6; Worcester, 88.3; Berkshire, 85.4; Dukes and Nantucket, no report; the State, 91.7.

FRUIT BLOOM.

All fruits except plums bloomed well; these showed a markedly poor bloom in Berkshire, Middlesex and Norfolk counties. Small fruits showed the best bloom for the State. Frosts injured all fruits in some sections of the State, more noticeably in the valleys, and damage of greater or less degree is reported from all parts excepting Dukes and Nan-

tucket, which did not furnish information on this question. Norfolk County seems to have suffered the least, with only 3 reports of damage done. Strawberries were most affected by frosts, with 60 reports of injury and several of total loss of crop. Apples, peaches and plums suffered also, and in many sections of Worcester and counties westward considerable damage appears to have been done.

INSECTS.

Of all insects reported as doing damage the tent caterpillar by far exceeds all others in numbers. The season of 1912 and the mild winter following seem to have been peculiarly favorable to the multiplication and preservation of this pest, while the warm spring insured early incubation and an abundance of food. It is high time that concerted effort was made by towns and individuals in ridding the country of this foe. The fact that the caterpillar prefers the wild cherry to all other food plants suggests the first step, — clear up all cherries. Then cut all wild and worthless apple trees, and spray the rest. Only 11 correspondents do not mention the tent caterpillar. Thirty-six, of whom 26 are in Hampden, Worcester, Bristol and Plymouth counties, report damage by cutworms, while 35, confined chiefly to the counties of Worcester, Middlesex and Essex, report brown-tail moths to be active. Other insects mentioned, in order of greatest frequency, are gypsy moth, currant worm, elm-leaf beetle, June bug larvæ, codling moth, bud moth, and single reports of others.

PLANTING.

The composite of the reports of percentage of planting done by May 24 is: Nantucket, 85; Dukes, 70; Bristol, 63.3; Barnstable, 60.6; Plymouth, 59.7; Berkshire, 59.7; Essex, 53.5; Franklin, 52.7; Norfolk, 48.7; Middlesex, 47.3; Worcester, 44.4; Hampshire, 43.2; Hampden, 34.5; the State, 51. As compared with the average amount of planting done by May 24, 18 correspondents, or 13 per cent, report above; 69, or 48 per cent, report the average; 55, or 39 per cent, report below; from which it appears that of those re-

porting above and below a majority of 26 declares the amount of planting done to be below the average. Farmers have been reluctant to commit seed to the cold, dry soil, inasmuch as crops already planted remained at a standstill the greater part of May.

FARM HELP AND WAGES.

The scarcity of farm help continues as in past years, and the percentage of good help is small. In a number of cases help is reported as plentiful but poor. The average percentages of all help that may be called good help are: Barnstable, 56.4; Hampshire, 52.2; Franklin, 51.5; Plymouth, 47.9; Berkshire, 44.6; Worcester, 38.3; Bristol, 38.3; Essex, 32.7; Hampden, 32; Middlesex, 29.6; Norfolk, 29.5; Dukes, 25; Nantucket, 10; the State, 40.4. Wages show no advance over those of last year, although comparison of absolute averages cannot be made. Help is paid from \$25 to \$30 per month, with board, and \$1.75 to \$2 per day, without board, or 20 cents an hour. Absolute monthly wage averages follow: Bristol, \$30.50; Nantucket, \$30; Barnstable, \$28.37; Essex, \$28.25; Franklin, \$27.85; Worcester, \$27.78; Norfolk, \$27.43; Hampden, \$27; Berkshire, \$26.96; Middlesex, \$26.03; Plymouth, \$25.11; Hampshire, \$24.50; Dukes, \$22.50; the State, \$27.19. Absolute day wage averages are: Barnstable, \$2.03; Nantucket, \$2; Norfolk, \$2; Franklin, \$1.92; Worcester, \$1.90; Middlesex, \$1.88; Hampden, \$1.87; Essex, \$1.86; Plymouth, \$1.85; Bristol, \$1.84; Berkshire, \$1.79; Hampshire, \$1.76; Dukes, no report; the State, \$1.88.

ACREAGE OF FARM CROPS.

For the State as a whole there will be a slight increase in the acreage of both corn and potatoes. In Hampshire County, owing to the overproduction of 1912, the acreage of onions will be below the average, while that of tobacco will be increased. Encouraging reports of experimentation with alfalfa were received from various parts of the State. The impetus given fruit growing by the New England and Massachusetts Fruit Shows continues to be felt in the setting out of new orchards and the better care of old ones, although it

is admittedly true that all trees are not tended as they should be, while some adventurers set out new orchards, only to fail to give attention to spraying and pruning at the crucial times.

NEW ENTERPRISES.

Evidence that farmers continue to apply to their own undertakings the latest findings in agricultural practice is apparent from the following notes taken from returns of correspondents: Berkshire: Some reforestation with pine; some farmers are getting interested in intensive farming; in a very few years there will be seen a great difference in growing crops in this vicinity, as a great many of the young men from the agricultural college are just beginning to do things; more silos. Franklin: in use of tools; vetch is interesting us, with much promise of good results. Hampshire: several hundred young apple trees set; increase in forage crops; 25 acres of onions irrigated in Northampton; a fruit farm has been started with 500 trees, and will be added to; much interest in poultry raising; farmers gradually installing machinery; a general attempt to improve methods; better care of orchards as regards pruning and spraying; more attention to fruit, shown by increased planting, especially apples, and better care. Hampden: fair success with alfalfa; more fruit trees and small fruit than common set out; the Hampden County Improvement League is commencing work in co-operative buying, which is meeting with success so far; more spraying of apple trees; more attention to care of fruit and poultry. Worcester: inoculation of legumes; a little more attention towards caring for apple trees; more fruit trees are being set out; better care of fruit trees; quite a number of farmers are planting sweet corn and tomatoes and sowing peas for the canning factory at Hopkinton; one farmer has 25 acres sown to peas, and in all there are being grown about 45 acres; increased care of fruit trees; much more interest in pruning and spraying orchards; more top-dressing of grasslands; co-operative buying of chemicals for home mixing; more silos being built; have an acre in alfalfa, more will try seeding this fall; increase of fruit. Middlesex: more

soiling crops; all farmers are spraying and the fruit should be better; farmers are setting out apple trees all over their farms; some new orcharding and a fox-breeding farm; several will raise corn, tomatoes and peas for the canning factory in Hopkinton; alfalfa raised with good success; good demand for land, and more is being brought under cultivation; many are experimenting with alfalfa; many fruit trees, mostly apples and peaches, have been set in the past two years. Essex: several new silos; experimenting in alfalfa growing. Norfolk: trimming and spraying of fruit trees and quite a lot of young trees set; more people interested in farming; increased tendency toward early green fodder for cattle. Bristol: fruit raising increased; peach and apple orchards being planted quite extensively. Plymouth: fruit growing, especially strawberry, on the increase; a few more fruit trees than usual have been set; several small orchards set; farmers are using lime to some extent. Barnstable: company is running a mushroom plant; cranberry growers are beginning to do considerable spraying; more general interest in tree spraying; general increase in agricultural interest.

BIRDS.

Damage by birds appears to have been done principally by hawks and crows throughout the State, and by pheasants in Worcester, Middlesex and Essex counties. Corn was hardly up enough on May 24 to be pulled by crows, although some injury of this kind is reported from Norfolk, Plymouth and Barnstable counties; blackbirds likewise appear to be doing similar mischief. The tarring of corn before planting seems to repel these birds, and, when practiced, freedom from injury is reported. Many poultrymen are losing chickens from inroads by hawks and crows. By far the most serious damage is done by pheasants, particularly to garden crops. More than one-half the correspondents of Worcester, Middlesex and Essex counties reporting damage by birds name pheasants as most troublesome. The farmer who feeds these birds unwillingly should have the privilege of shooting them for the protection of his crops, if nothing more, — the same privilege

accorded him in the case of deer. Of insectivorous birds there is a marked decrease, which is regrettable. It behooves every farmer, in his combat with insect foes, to seek and put into practice the best methods of preserving and increasing the supply of these invaluable aids.

NOTES OF GENERAL CROP CORRESPONDENTS.

[Returned to us May 24.]

BERKSHIRE COUNTY.

North Adams (C. M. OTTMAN).—The season was very early at the start but rather backward for the last two weeks. Pastures and mowings are in normal condition; fall seeding wintered well and its condition is 90. The bloom of fruits was: apples, 85; pears, 100; peaches, 80; plums, 85; small fruits, 90. Cherries and raspberries have suffered from frost, and apples have somewhat. Tent caterpillars appear to be doing the most damage. Of planting, 85 per cent was completed on May 24, which compares well with the average. Farm help is scarce; 50 per cent can be called good help. Wages average \$30 per month with board and \$1.75 per day without board. There will be no change in the acreage of farm crops. The hay crop started very well but has suffered for a week for lack of rain.

Cheshire (L. J. NORTHUP).—The season as a whole is much better than normal. Condition of pastures and mowings is 75. Fall seeding wintered well and its condition is 100. The bloom of fruits was: apples, pears and plums, 100. All late fruits suffered from frosts. Tent caterpillars are doing the most damage. Of planting, 50 per cent was done May 24, which does not compare very favorably with an average. Sixty per cent of farm help is good help. The average wages paid farm help are \$30 per month with board, and \$1.75 per day without board.

Hancock (D. L. WHITMAN).—The season was early, but is now cold and dry. Pastures and mowings are in 30 per cent condition; some fall seeding wintered well, and its condition is 80. The bloom of fruits was: apples, 80; pears, 100; plums, 80. All fruits suffered very seriously from frost. Tent caterpillars are very plentiful. Fifty per cent of the planting is already done; this year is ahead of the average in this respect. Farm help is scarce; 75 per cent can be called good help. Wages are \$25 per month with board; without board, \$1.75 per day.

Richmond (TIMOTHY B. SALMON).—On account of dry weather the season is below normal. The condition of pastures and mowings is 75; of fall seeding, 100. Fall seeding wintered well. The bloom of fruits was: apples and pears, 100; plums, 25; small fruits, 50.

Cherries and plums suffered from frosts. Most damage is being done by tent caterpillars. Of planting, 75 per cent is already done, which is up to normal. Help is scarce; 25 per cent can be called good help. Farm help is paid \$28 to \$36 per month with board and \$2 to \$2.25 per day without board.

West Stockbridge (J. S. MOORE).—Spring opened up in fine shape with prospects good for an early season, and much farm work was done in April. A little later, cold weather set in and the frosts of May 11 and 12 did very much damage to fruit of all kinds, especially apples and berries. Ice formed nearly one-half inch thick each morning. Fall seeding did not winter well, but pastures and mowings are in normal condition. The tent caterpillar, currant worm and wireworm are doing the most damage. Planting is later than usual, only 50 per cent having been done on May 24. Of farm help 25 per cent can be called good help. The wages paid are: with board, per month, \$20 to \$25; without board, per day, \$1.50 to \$1.60.

Washington (E. H. EAMES).—The present season is all of one month late. The condition of pastures and mowings is 50; of fall seeding, about 50. The latter did not winter well. The bloom of fruits was: apples, pears and small fruits, 100; peaches, none. All fruits suffered from frosts. No insect damage is apparent. Three-fourths of the planting is done; this is not up to the average. There is not any farm help; it cannot be found at any price; would pay 22 cents per hour. The acreage of corn and potatoes will be increased one-half. I have never seen the season so late. Apple blossoms were all frozen, and farmers say that there will be no apples.

Tyringham (EDWARD H. SLATER).—The season up to May 11 was very forward. Pastures and mowings are 75 per cent of normal in condition. Fall seeding wintered well; its condition is 80. The bloom of fruits was: apples and pears, 100; plums, 25; small fruits, 50. The frosts from the 11th to the 15th did a great amount of damage to fruits and grass. Apples, pears, plums and nearly all kinds of small fruits suffered. Tent caterpillars are more numerous than usual. Of planting, 25 per cent is already done. Farm help is scarce; 50 per cent can be called good. Farm help is paid \$25 per month with board and \$1.50 per day without board.

Otis (W. L. STRICKLAND).—The season is about the same as in former years. Pastures and mowings are in normal condition. Fall seeding wintered well, and its condition is 95. The bloom of fruits was: apples, pears and small fruits, 100; plums, none. No fruits have been ruined by frosts. The tent caterpillars are the only insects doing damage. Fifty per cent of the planting is done and this is

the same as the average. Of farm help, 5 per cent can be called good. Wages paid are: with board, per month, \$30; without board, per day, \$1.75.

New Marlborough (E. W. RHOADES). — The season was early and warm up to the 10th of May; since then it has been cold and dry. The condition of pastures and mowings is 100. Fall seeding wintered well, and its condition is 110. The bloom of fruits was: apples, 100; pears, 90; peaches, 75; plums, 60; small fruits, 125. Strawberries and peaches suffered from frosts. The insects doing the most damage are tent caterpillars and white grubs. The season seems to be a week or ten days early. Fifty per cent of the planting is already done. Farm help is scarce and 20 per cent is good help. Farm help is paid \$25 to \$30 per month with board, and \$2 per day without board. There seems to be a scarcity of birds of all kinds and an abundance of worms and bugs.

FRANKLIN COUNTY.

Monroe (H. B. PHELPS). — This is a normal season. The condition of pastures and mowings is normal, and fall seeding wintered well. The latter looks well. The bloom of fruits was: apples, 90; small fruits, 90. No damage to fruits by frost. There are lots of nests of the tent caterpillar in all kinds of trees. Fifty per cent of the planting is already done; this is about the same as the average. Help is scarce: 25 per cent is good help. There is not much hired. Not much farming is done, as many have left the farm and gone to the city. More would go if they could sell out. Farms are growing up to brush.

Leyden (FRANK R. FOSTER). — This compares favorably with a normal season. The condition of pastures, mowings and fall seeding is 75. The last-named wintered well. The bloom of fruits was: apples, peaches and small fruits, 100; pears, 80; plums, 50. Many apples in low localities suffered from frosts. Tent caterpillars are the most injurious insects. Planting is one-half done, which compares favorably with an average year. Help is scarce, and is paid \$25 to \$30 per month with board and \$1.75 to \$2 per day without board.

Hawley (C. F. SEARS). — The season is twenty days in advance of a normal. The condition of pastures and mowings is 100. Fall seeding wintered well, and its condition is normal. The bloom of fruits was: apples, 50; pears and peaches, 75; plums, 50; strawberries a failure. Apples, cherries and strawberries were damaged by frosts. The percentage of planting done is 25, which is equal to the average. Farm help is scarce, and only 5 per cent can be called good help. The average wages paid are \$23 per month with board and \$2 per day without board.

Shelburne (C. S. BARDWELL). — Vegetation is very forward for this time of year. The condition of pastures and mowings is 100; of fall seeding, 98. The last-named wintered well. The bloom of fruits was: apples, 75; pears, 90. Small fruits budded full. Frosts damaged strawberries and raspberries. Tent caterpillars are very troublesome. Of planting, 50 per cent was done May 24; 90 per cent is usually done by this time. Average wages of farm help are: with board, per month, \$30; without board, per day, \$2. There will be a 5 per cent increase in potato acreage. There have been only two rains this month, and the temperature runs low, which retards planting.

Gill (FRANK F. STOUGHTON). — Pastures and mowings are in normal condition. Apples and small fruits bloomed well. Frosts damaged apples and perhaps other fruits. A great many insects are damaging fruit trees. Not much planting has been done. Farm help is scarce.

Wendell (N. D. PLUMB). — The season is very cold and backward. The condition of pastures and mowings is 80; of fall seeding, 95. Fall seeding wintered well. The bloom of fruits was: apples, 90; peaches, 70; small fruits, 75. Early and recent frosts have nearly ruined the strawberry and blueberry crops. Most damage is being done by tent caterpillars. Of planting, 75 per cent is already done; this is about normal. Farm help is scarce; 50 per cent can be called good help. Wages average \$30 per month with board; without board, per day, they are \$1.75 to \$2. There will be less corn planted than usual and 75 per cent less potatoes.

Conway (L. T. HOPKINS). — The season was two weeks ahead of the average, and the leaves on the trees are larger than usual. The cold and dry weather of late has put a check on vegetation. Seed germinates slowly. The condition of pastures and mowings is 75. Fall seeding wintered fairly, and its condition is 70. The bloom of fruits was: apples, pears and small fruits, 100; peaches and plums, 110. Frost damage was very slight. Most damage is being done by the tent caterpillar. Seventy-five per cent of the planting has been done; this is the average amount at this time. Farm help is scarce; 75 per cent can be called good help. The wages paid are: with board, per month, \$25 to \$30; without board, per day, \$1.50 to \$2.

Sunderland (GEO. P. SMITH). — April was wet. May, up to the 20th, was dry and cold. Pastures, mowings and fall seeding are 95 per cent of the normal. The last-named wintered well. The bloom of fruits was: apples, 85; pears, 60; plums, 96; small fruits, 75. Frosts damaged strawberries. Tent caterpillars are rather numerous. Of planting, 80 per cent was done May 24; this is a normal amount. Of farm help, 75 per cent can be called good help.

Wages paid are: with board, per month, \$25 to \$30; without board, per month, \$40 to \$45. There are probably a few acres less onions on account of low prices last winter. A good many acres will be abandoned on account of seed not germinating well. There will be no tent tobacco in town this year.

HAMPSHIRE COUNTY.

Cummington (A. A. SHAW).—The season is a trifle backward, but we are having an abundant rainfall. The condition of pastures and mowings is 100. Fall seeding did not winter well; its condition is 75. The bloom of fruits was: apples, peaches and plums, 100; pears, 75; small fruits, 90. All fruits have suffered from frosts. Peaches, cherries and small fruits were killed. The apple crop is uncertain. Caterpillars are the only damaging insects at present, although some scale has been discovered. Twenty-five per cent of the planting has been done; more is usually done by this time. Farm help is scarce, and not more than 25 per cent can be called good help. The wages paid average \$25 to \$30 per month with board; day labor is paid 25 cents per hour. There will be a slight increase in the acreage of potatoes. Several hundred young apple trees have been set.

Middlefield (J. T. BRYAN).—The season is earlier than an average. Pastures and mowings and fall seeding are in normal condition. The last-named wintered well. The bloom of fruits was: apples and pears, 75; plums and small fruits, 100. No serious injury has been done fruit. Small damage is being done by tent caterpillars. Planting is one-half done; this is about the average. Help is scarce, and of that available, only about 50 per cent may be called good. Help is paid \$25 per month with board and \$1.75 and \$2 per day without board. Corn will show an increase in acreage. Forage crops will be increased in acreage.

Chesterfield (HORATIO BISBEE).—The spring came forward rapidly in late April and early May, but the cold weather of the past two weeks has retarded growth very much. We have had no rain for some time previous to May 23. The condition of pastures and mowings is 100. Fall seeding did not winter well; its condition is 50. The bloom of fruits was: apples, pears and small fruits, 100. The apple bloom was very full, but the frost has done it much damage, and all kinds of berries have suffered, if they have not been destroyed. Forty per cent of the planting has been done; this compares fairly well with an average year. Farm help is scarce; 25 per cent is good help. Labor unions are spoiling the quality of help for the farm. The average wages paid are \$20 to \$25, with board, per month, and \$1.50 to \$1.75, without board, per day. There will be an increase in the acreage of potatoes. No

appreciable damage is being done by birds as yet, although all kinds of small birds pick up grass seed that is sown in the spring.

Hadley (J. G. COOK).—The season has been rather dry and very cold so far this month, but on May 22 and 23 we have had a very good steady rain. Corn and grass will come with a bound if we have warm weather. Pastures and mowings are in 98 per cent condition. Fall seeding wintered fairly well; 95 represents its condition. The bloom of fruits was: apples, 102; pears, 98; peaches, 94; plums, 96; small fruits, 100. Peaches, to some extent, and apples, in a lesser degree, have suffered from frosts. The insects doing the most damage are tent caterpillar, onion maggot, San José scale and codling moth. Of planting, 75 per cent has been done; this is ahead of the past two years. Farm help is scarce; about 90 per cent is good help, and this is mostly Polanders. Farm help is paid \$27 to \$30 per month for eight months with board, and without board, \$1.75 per day. More tobacco is being set and fewer onions than usual. In Northampton there are about 25 acres of onions that are irrigated. Birds are doing more good than harm. The crows are our only enemies, but they have not begun their damage.

Easthampton (W. C. CLAPP).—The season is two weeks ahead, but the cold, dry weather during May has kept vegetation back. The condition of pastures and mowings is 100; that of fall seeding is 80. This wintered well. The bloom of fruits was: apples, 100; pears, 50 to 60; plums, 50 to 75. Apples and strawberries suffered from frosts. Tent caterpillars, cutworms, and elm-leaf beetles are doing the most damage. Planting is one-half done, which is about the same as common. Farm help is scarce; 80 to 90 per cent is good help. Wages per day without board are \$1.75 to \$2.

Prescott (W. F. WENDEMUTH).—The present season is perhaps a week later than a normal. The condition of pastures and mowings is 92; of fall seeding, 100. The last-named wintered well. The bloom of fruits was: apples, 100; pears, 105; peaches, 95; plums, 95; small fruits, 85. On low ground nearly all fruits have been frosted more or less, but most of this town is high. Tent caterpillars are much more numerous than usual, although no other insects are doing damage as yet. About 25 per cent of planting is already done, and this is about as usual. Farm help is scarce because three or four portable saw mills are employing the help in this vicinity. Wages paid are: with board, per month, \$25; without board, per day, \$1.75. A fruit farm of 500 trees has been started and will be added to yearly. Hawks are taking the usual toll of chickens.

Greenwich (WALTER GLAZIER).—Agriculturally speaking, the present season is a little earlier than normal. Pastures and mowings are in normal condition. Fall seeding came through the winter

in good shape, and its condition is nearly 100. Apples bloomed 90 per cent. We have had a number of hard frosts in this valley of late, but not much damage has been done, although apples were injured in some cases. More rain would be acceptable. Tent caterpillars have never been so plentiful. Their nests have been destroyed by some of the farmers. Twenty per cent of the planting has been done, which is not quite as much as the average on account of the cold weather. But very little hired help is employed in this town. Wages paid are \$20 and up per month with board and \$1.50 upwards per day without board. Much interest is taken in poultry raising.

Belchertown (A. L. PRATT).—The present is a normal season. Pastures, mowings and fall seeding are in normal condition. Fall seeding wintered well. The bloom of fruits was: apples, 80; pears, 100; peaches, 90; plums, 80; small fruits, 100. Nearly all fruits except apples suffered from frosts. The codling moth is doing the most damage. Spring planting is 50 per cent done; this is the normal amount. Help is scarce; 50 per cent may be called good help. The average wages paid farm help are: with board, \$24 per month; without board, \$1.50 per day. Farmers are gradually installing machinery.

HAMPDEN COUNTY.

Blandford (ENOS T. BOISE).—The season commenced early and until May was fully two weeks early. Pastures and mowings are looking extra well. All fruits bloomed full. Small fruits, early apples and pears have suffered from frosts, but it is hard as yet to tell the amount of damage done. Tent caterpillars seem to cover every tree and bush, but have been removed from fruit trees generally. The ground has been mostly prepared for planting. Only 20 per cent has been done, however, as many are holding off on account of the cold weather. Farm help is very scarce, and only 10 per cent is reliable. Wages are high, running from \$1.75 to \$2 per day of eight hours without board, and averaging \$30 per month with board. One or two farmers are having fair success with alfalfa. Birds are scarce.

Russell (E. D. PARKS).—The season was farther advanced than normally until the occurrence of heavy frosts. The condition of pastures and mowing is 85; of fall seeding, 95. This wintered well. All fruits bloomed full, but most of them suffered from frosts. Tent caterpillars and currant worms appear to be doing the most harm. Planting is behind the average; only 50 per cent has been done. Farm help is scarce; 50 per cent is good help. The average wages paid are: with board, per month, \$25; without board, per day, \$2. More fruit trees and small fruits have been set out than commonly. We need rain and warm weather.

Granville (JOSEPH WELCH).—The present is a normal season. The condition of pastures and mowings is 100, but that of fall seeding is only 50, as this did not winter well. The bloom of fruits was: apples, pears and small fruits, 100; peaches, 50; plums, 25. None have been damaged by frosts. Most injury is being done by tent caterpillars. Two-thirds of planting is already done; this is one-third above the average year. Help is so scarce that we consider any help good. Very little is employed by the month: their wages are \$1.75. The acreage of corn and potatoes will be increased one-fourth. We do not have more than half as many small birds as we had ten years ago, but we have a full crop of destructive deer.

West Springfield (T. A. ROGERS).—The season is about ten days early. Nearly everything started early, especially grass, but the cold winds and frosts of May have checked growth somewhat. Pastures, mowings and fall seeding are in normal condition. All fruits bloomed full. Frosts damaged peaches and strawberries. Injury from tent caterpillars and cutworms appears to be the most serious. Of planting, 75 per cent was done on May 24. This is about the average. Farm help is scarce, and 20 to 25 per cent only is good. There will be an increase of 10 per cent in acreage of corn and 25 per cent in acreage of potatoes. English sparrows are driving away robins and other song birds.

Hampden (E. NORTON DAVIS).—The season started in two weeks earlier than normally, but the freeze set it back seriously. Pastures and mowings are in 75 per cent condition: fall seeding wintered in good shape, and is 95 per cent of the normal in condition. The bloom of fruits was: apples, 75; pears, peaches and small fruits, 90; plums, 95. Many peach orchards have lost the entire crop by frost, and the yield of others has been badly reduced. Apples and plums on low lands were almost entirely destroyed, as were strawberries. The most obvious damage is being done by tent caterpillars, but the San José scale, leaf rollers, bud moths and cutworms are also doing injury. Of planting, 40 per cent is already done, which is below the average. Farm help is scarce and none of it is good help, as no one seems to be satisfied with it. Day wages without board are \$1.75 for nine hours. The Hampden County Improvement League is commencing work in co-operative buying, and is meeting with success so far.

Willbraham (H. M. BLISS).—This season compares favorably with a normal. The condition of pastures and mowings is 88. Fall seeding wintered well and its condition is 90. The bloom of fruits was: apples, 95; pears, 100; peaches, 95; plums, 90; small fruits, 85. Peaches have suffered from frosts. Twenty-five per cent of the planting is done; this is below the usual amount. The scarcity

of good farm help is one of the drawbacks to farming. Seventy-five per cent may be called good help. The average wages paid are: with board, per month, \$25 to \$30; without board, per day, \$2.

Brimfield (F. N. LAWRENCE). — The present season, agriculturally speaking, is some two weeks earlier than normal. The condition of pastures and mowings is 75; of fall seeding, 90. This came through the winter well. The bloom of fruits was: apples, pears and small fruits, 95; peaches, 80; plums, 90. On low lands peaches, plums, strawberries and apples have suffered somewhat from frost. Tent caterpillars are very plentiful on apple and cherry trees. We have no brown-tail or gypsy moths. Very little planting has been done, as we have had very cold weather for the past two weeks. Help is scarce, but what there is is paid \$25 to \$30 per month with board and \$2 per day without board. Apple trees are being sprayed more than usual.

WORCESTER COUNTY.

Royalston (C. A. STIMSON). — The present is a good growing season. Pastures, mowings and fall seeding are in normal condition, and the last-named wintered well. The bloom of fruits was: apples, pears and small fruits, 100; peaches, 70; plums, 95. No frost damage to fruits has been done. All fruit trees are badly infested with tent caterpillars. One-fourth of planting was done May 24. Help is scarce and only one-half is efficient. Help is paid \$30 per month with board and \$2 per day without board.

Ashburnham (E. D. GIBSON). — The season was twenty days ahead of the normal, but it is now ten days behind. The condition of pastures and grass lands is 75. Fall seeding came through the winter in fine shape; its present condition is 90. The bloom of fruits was: apples, 85; pears, 90; peaches, 50; plums, 35; small fruits, 90. Strawberries and blueberries especially suffered from frost, and apples, pears, plums and cherries suffered to some extent. Tent caterpillars and brown-tail moths are doing the greatest injury. Gypsy moths are likely to be plentiful. Planting is 30 per cent done; have hardly known a season to vary so. Farm help is scarce; possibly 20 per cent is capable. Monthly wages vary from \$20 to \$35; day wages, without board, are \$1.50 to \$2.

Templeton (LUCIEN GOVE). — Up to May 6 vegetation pushed rapidly ahead owing to the warm weather. Subsequently, the season has been cool with several frosts. Nevertheless, agriculturally speaking, it is a more favorable season than for the past four or five years. The condition of pastures and mowings is 97; of fall seeding, 95. The bloom of fruits was: apples, 97; pears and peaches, 100; plums, 75; small fruits, 80. In the valleys all fruits were injured by frosts to some extent, but no serious damage was done to fruits on uplands. The most damage by insects is being

done by tent caterpillars and cutworms. Of planting, 40 per cent is already done; this is below the normal amount. Farm help is hard to get, and only 25 per cent can be called reliable. Monthly wages average \$22 with board; \$1.75 is paid per day without board. There will be a slight increase in the acreage of corn. Increased care of fruit trees is most noticeable.

Hardwick (CHARLES O. FLAGG). — Protracted cold weather with an unusually severe freeze on the night following May 10 marked the present season. Pastures, mowings and fall seeding are in normal condition. The bloom of fruits was: apples, 80; pears, 100; peaches, 125; plums, 125; small fruits, 100. All fruits have suffered from frosts. Seventy-five per cent of small fruits were killed. The damage to peaches and plums is uncertain; apples on low lands were injured badly; on uplands lightly. Insects appearing to be doing the most damage are tent caterpillars, elm-leaf beetles and some brown-tail moths. Of planting, 30 per cent was done May 24, which is very little different from an average year. Farm help is scarce; probably half can be considered efficient. Wages, per month, average \$45 to \$50; wages, per day, average \$1.75 to \$2. Much more interest is taken in pruning and spraying orchards. There is more top-dressing of grasslands and co-operative buying of chemicals for home-mixing. From last season's experience some farmers anticipate that pheasants will damage corn.

Oakham (JESSE ALLEN). — The present season compares favorably with a normal. Pastures and mowings are in 90 per cent condition. Fall seeding wintered well; its condition is 80. The bloom of fruits was: apples, 90; pears, 100; peaches and plums, 75; small fruits, 90. Apples and small fruits suffered from frosts. Tent caterpillars are very bad. Planting is one-half completed, which is very forward for this time of year. Farm help is scarce, and 50 per cent is reliable. Average wages paid help are: with board, per month, \$30; without board, per day, \$2. The acreage of corn will be increased; that of potatoes diminished. We need more birds.

Warren (WILLIAM E. PATRICK). — The present season is about two weeks in advance of a normal. The condition of pastures and mowings is 90; of fall seeding, 100. The bloom of fruits was: apples, 95; pears, 90; peaches, 98; plums, 85; small fruits, 90. Tent caterpillars, currant worms and cutworms are the most damaging insects. Thirty per cent of planting is completed; this is about the same as an average year. Twenty-five per cent of farm help can be called good. Farm help is paid \$30 per month, with board, and \$1.75 per day, without board.

Sturbridge (FRANK T. HAYNES). — The season is more forward than a normal. The condition of pastures and mowings is 100.

Fall seeding did not winter well; its condition is only 50. The bloom of fruits was: apples and pears, 125; peaches, 150; plums and small fruits, 100. Apples have suffered slightly from frost. Damage has also been done to peaches and strawberries. Tent caterpillars are proving more injurious than they have for years before. Seventy-five per cent of planting is already done; this is the normal amount. Farm help is scarce; 75 per cent is good help. Wages per month, with board, are \$30; per day, without board, \$1.75.

Spencer (W. C. BEMIS).—The present season is late. Pastures and grass are starting slowly. Fall seeding did not winter well; its condition is 50. The bloom of fruits was: apples, 65; pears, 60; peaches, 75; plums, 50; small fruits, 75. Frosts damaged peaches very badly. The most injury by insects is being done by brown-tail moths and cutworms. Planting is only one-half accomplished. Farmers are late in this work. Farm help is scarce; 50 per cent is reliable. Wages average, with board, per month, \$25; without board, per day, \$1.75. An increased acreage of corn has been planted. In general lines of agriculture there is an increase in acreage and more silos are being built.

Auburn (WILLIAM GILBERT).—The season is about two weeks earlier than usual. Pastures, mowings and fall seeding are in normal condition. The bloom of fruits was: apples and pears, 100; plums, 80; small fruits, 75. Strawberries and raspberries have suffered from frosts. Cutworms and tent caterpillars are doing the most damage. Planting is one-half done. Help is scarce; about 25 per cent may be called good farm help. Wages average, with board, per month, \$28; without board, per day, \$2. Tent caterpillars are very plentiful on wild cherries and also on cultivated fruits.

Millbury (CLIFFORD R. HARRIS).—The season opened early, but is very dry and backward at present. The condition of pastures and mowings is 80; of fall seeding, 100. The hay crop is much behind that of last year. Some pastures have very little feed, and stock is being fed rye to keep up the flow of milk. Corn has started well, but that above ground is rather yellow, and is growing a little. The bloom of fruits was: apples, pears and small fruits, 100; plums, 50. No frost damage has been observed in this section. Most insect injury is being done by tent caterpillars. Of planting, 75 per cent is already done. Planting is somewhat earlier than the average and two weeks ahead of last year. Farm help is plentiful; 50 per cent may be considered reliable. Wages average \$30 to \$40 per month with board, and \$1.75 to \$2 per day without board. Have one acre in alfalfa; plants inoculated look well; remainder are yellow. Other farmers will try seeding in the fall.

Oxford (B. W. MORSE).—The season is backward. Pastures and mowings are in normal condition. Fall seeding did not winter well; its condition is 80. The bloom of fruits was: apples, 75; pears, 100; peaches on high land, 80; plums, 100. On low land apples, pears and peaches suffered from frost damage, but on high land no serious injury resulted. The tent caterpillar is the most seriously injurious insect. Twenty-five per cent of the planting has been done; this is two weeks behind an average. Farm help is scarce; 50 per cent is good help. The average wages paid farm help in this vicinity are: with board, per month, \$30 to \$35; without board, per day, \$2 to \$2.50. It is too early to note any marked change in the acreage of the usual farm crops. Birds are doing no damage; wish there were more of them. Apples, pears, plums and peaches were at least two weeks earlier in blooming. This is the first week farmers have done much plowing. Quite a number of fields of oats have been put in on light land, and several were seeded ten days ago. All gardens are not planted yet.

Princeton (A. O. TYLER).—The present season is colder and drier than normal. Pastures and mowings are in 75 per cent condition, and fall seeding in 100 per cent. The bloom of fruits was: apples and pears, 75; peaches, 25; plums, 60; small fruits, 50. If any fruit suffered from frosts it was apples. Brown-tail moths and tent caterpillars appear to be the most troublesome insects. Of planting, 20 per cent is already done; farmers are very backward in this operation. Help is scarce and only one-half is reliable. Farm help is paid \$18 to \$25 per month with board, and without board, \$1.75 to \$2 per day.

Shrewsbury (FRED J. REED).—The cold weather makes things very backward. The condition of pastures and mowings is 40. Fall seeding wintered fairly well; its condition is 60. The bloom of fruits was: apples, 70; pears, 80; peaches, 40; plums, 50; strawberries, 90. No damage was done by frosts. Cutworms, brown-tail moths and tent caterpillars are doing the greatest injury. Where people try to keep down the tent caterpillars, towns should clean up the roadsides. Of planting, 30 per cent is already done; this is below the average amount. Farm help is scarce; 30 per cent is good help. Farm wages average, with board, per month, \$25 to \$30; without board, per day, \$1.75 to \$2. Some farmers are trying to increase their fruit, but the bugs are hard to fight. Small birds in large flocks have damaged lettuce.

Milford (JOHN J. O'SULLIVAN).—The present is about an average season. Pastures and mowings are in a 95 to 100 per cent condition. Fall seeding came through the winter in fair condition and is now 90 to 100. The bloom of fruits was: apples and pears, 75; peaches, plums and small fruits, 100. Frosts damaged straw-

berries. Caterpillars are proving the most injurious. Of planting, 75 per cent is already done, which is the normal amount. Help is scarce; only 25 per cent is good farm help. The wages paid are: with board, per month, \$25 to \$30; without board, per day, \$1.50 to \$2.

MIDDLESEX COUNTY.

Dunstable (A. J. GILSON).—This season is about two weeks later than a normal. The condition of pastures and mowings is 50. Fall seeding wintered well; its condition is 75. The bloom of fruits was: apples, 75; pears, 90. The former suffered from frosts. The tent caterpillars were never so abundant; the brown-tail moths are doing the next most damage. Twenty per cent of planting is already done; this is below the average. Help is scarce; about 15 per cent can be called good help. Wages paid average, with board, per month, \$25; without board, per day, \$1.75. More acres of potatoes will be planted. It would be better for the farmer if there were more birds.

Dracut (B. A. CLUFF).—The present season is a favorable one, agriculturally speaking. Pastures are in normal condition and grass is looking fine. There should be a heavy hay crop. The condition of fall seeding is 95. The bloom of fruits was: apples, 75; pears, 90; peaches, 40; plums, 30; small fruits, 75. Frosts injured strawberries and peaches. The insects that appear to be the most damaging are tent caterpillars. Planting is 50 per cent done, which compares favorably with an average year. Farm help is scarce and only 10 per cent can be called reliable. The average wages paid are: with board, per month, \$22; without board, per day, \$1.50 to \$1.75. The acreage of corn will be increased; that of potatoes decreased. More soiling crops are being put in. Farmers are all spraying and the fruit should be better than usual.

Ayer (FRED A. SMITH).—The season is seven to ten days late. Pastures and mowings are looking normal. Of fall seeding, 75 per cent is growing. The bloom of fruits was: apples, 25 per cent above 1912; pears, average; peaches, 75 per cent above 1912; plums, 10 per cent above 1912; small fruits above the average. Frosts injured strawberries, peaches and some cherries. One or two peach orchards blossomed full, but scarcely any fruit has started on account of the cold nights. Tent caterpillars and brown-tail and gypsy moths are proving the most injurious insects. Of planting, 25 per cent is already done; this is only 50 per cent of what is usually done at this time of year. Help is scarce, and 10 per cent is good. Good farm help gets \$26 to \$30 per month with board and \$2 per day without board. Some foreign help works for less. There will be a 10 per cent greater acreage of potatoes than last year. Farmers are setting out apple trees all over their farms.

Billerica (E. F. DICKINSON).—The season started in as an early

one, but has lost time lately. With the rain of the past two days the season may be called a good one, with grass forward and fruit trees flourishing where cared for. Pastures are in normal condition. Fall seeding is 90 per cent. The bloom of fruits was: apples, 65; pears, 90; peaches, 60; small fruits, 75. The apple bloom was early, being at its height on May 10. Strawberries and peaches suffered from frosts, with slight damage to apples. The most troublesome insects are caterpillars and brown-tail and gypsy moths. Of planting, 65 per cent has been done; this is fully up to the average amount. The supply of farm help is average; about 60 per cent is good help. Help is paid \$25 per month with board and \$1.75 per day without board. Corn will show an increased acreage. Some new orchards are being started and a fox-breeding farm has been established.

Acton (LYMAN C. TAYLOR).—The season is somewhat above normal. Pastures, mowings and fall seeding are in 90 per cent condition. The bloom of fruits was: apples, 70; pears, 75; peaches, 100; plums, 65; small fruits, 85. Strawberries on low lands have suffered somewhat from frost. Seale, gypsy moths and caterpillars are creating the greatest havoc. Seventy per cent of planting is completed, which is a little better than an average. Possibly 40 per cent of the farm help can be considered reliable. Wages paid average \$25 to \$30 per month with board and \$2 per day without board.

Marlborough (E. D. HOWE).—This is about a normal season. The condition of pastures and mowings is 99; of fall seeding, 100. The bloom of fruits was: apples, 60; pears, peaches and plums, 100; small fruits, 98. No frost damage apparent. Tent caterpillars and currant worms are proving troublesome. Of planting, 25 per cent is done; 50 per cent is the average. Farm help is in fair supply and possibly 30 per cent may be called good help. Thirty dollars per month with board and \$2 per day without board are the wages paid. More sweet corn will be grown. In fact, several will raise corn, tomatoes and peas for the canning factory in Hopkinton.

Hopkinton (W. V. THOMPSON).—The present season, agriculturally speaking, is about two weeks earlier than a normal. The condition of pastures and mowings is 125. Fall seeding wintered well and is fully up to normal. The bloom of fruits was: apples, 25; pears, 75; peaches, 100. Strawberries suffered a little from frost. The tent caterpillars are doing the most damage, and brown-tails are numerous on forest trees. Fifty per cent of planting is done. This is ten days or two weeks earlier than this amount is usually done. There is the usual supply of help to be had at 20 cents per hour. Not as many potatoes will be grown as usual. Alfalfa is being raised with good success. Hawks take chicks.

Weston (EDWARD C. RIPLEY). — The outlook is for a favorable season. Fall seeding wintered well and its condition is normal. The bloom of fruits was: apples, 100; pears, peaches and plums, 90; small fruits, 100. Strawberries were damaged by frost to some extent. Insects doing most damage are the tent caterpillar and brown-tail moth. Of planting, 25 per cent is already done; farmers are a trifle late in this work. Farm help is plentiful and wages paid average \$30 per month with board and \$2 per day without board. There seems to be a good demand for land, and more is being brought under cultivation. Pheasants are digging up corn and peas.

Lexington (HOWARD M. MONROE). — Spring opened very early and very wet, but the latter part of April and early May were very dry, with high winds and cold nights. Grasslands, pastures and fall seeding are in normal condition. The bloom of fruits was: apples, 75; pears and peaches, 110; plums, 75; small fruits, 100. Strawberry blossoms were very much injured by frost on the morning of May 15, and many tomato plants and beans that were above ground were frozen. Tent caterpillars, cutworms and brown-tail and gypsy moths are proving most injurious. Forty per cent of planting has been finished, which is the usual amount. Help is scarce and only one-half can be considered good help. Wages paid are: with board, per month, \$25; without board, per day, \$1.75. A little more corn will be put in than usual. Many are experimenting with alfalfa. Hawks and crows are killing a great many chickens, — as many as half of the broods in some cases. Pheasants are scratching out the planted corn.

Winchester (S. S. SYMMES). — Crops were planted earlier than usual, but held back by cold, dry weather. Pastures, mowings and fall seeding are in 80 per cent condition. The last-named wintered well. The bloom of fruits was: apples, peaches and plums, 75; pears and small fruits, 100. The most injurious insects appear to be tent caterpillars, leopard moths and gypsy and brown-tail moths. Ninety per cent of planting is already done, which is fully up to the average. Farm help is scarce, and one-half is good help. Day laborers are nearly all on an eight-hour basis, and most of them have Saturday afternoon off, without loss of pay. Carpenters, painters, plumbers and masons work not over seven hours per day, actual time. To give fair compensation to farmers, milk should be not less than 15 cents per quart. Wages paid farm help average \$30 per month with board and \$1.75 per day without board. Mongolian pheasants are pulling up the young corn.

ESSEX COUNTY.

Methuen (FREDERICK A. RUSSELL).—At first the present season compared favorably with a normal, but has lately been cold and dry. The condition of pastures, grasslands and fall seeding is 80. Fall seeding wintered well. The bloom of fruits was: apples, 50; pears and peaches, 100; plums, 50; small fruits, 80. Frosts damaged strawberries and apples. Tent caterpillars seem to be doing the greatest injury. Seventy per cent of all planting has been done; this is more than the average. Farm help is scarce; one-half is good help. Wages paid average with board, per month, \$30; without board, per day, \$1.50 to \$2.

Merrimac (S. BIXBY SARGENT).—The season opened early, but is now somewhat backward. Pastures, mowings and fall seeding are in good condition. The bloom of apples was 60. No damage from frost. Possibly brown-tail moths are doing the most injury. Fifty per cent of planting is already done, which is less than usual. Fifty per cent of farm help is reliable. Wages average \$1.75 per day without board. Expect trouble from pheasants and crows when corn begins to come up.

Salisbury (WESLEY PETTENGILL).—The season has been cold and backward. Pastures and mowings are in 80 per cent condition. Fall seeding came through the winter in good shape and its condition is 100. The bloom of fruits was: apples, 60; all other fruits, 100. The bloom of russet and fall apples was full, but the Baldwin bloom is light. Strawberries were touched a little by frost, but other fruit is all right. Caterpillars and brown-tail moths are proving most injurious. Planting is way behind the average year, only 40 per cent having been done. Farm help is scarce; about 25 per cent can be called good help. Wages paid range from \$25 to \$35 per month, with board, and from \$1.75 to \$2 per day, without board. Several new silos were built last summer. Very little damage is done by birds. Chicken hawks are the most troublesome.

Rouley (D. H. O'BRIEN).—The season is backward. Pastures and mowings are in 75 per cent condition. The condition of fall seeding is 100. The bloom of fruits was: apples, 50; pears and small fruits, 100; peaches, 90; plums, 40. Frost damaged all small fruits. Tent caterpillars are doing the greatest amount of damage. Of planting, 75 per cent is already done; this is the normal amount. Help is scarce, and only one-half can be called reliable. Farm help is paid \$28 per month, with board, and \$1.75 per day, without board. The corn acreage will be increased by 10 per cent. Farmers are experimenting in alfalfa growing.

Topsfield (B. P. PIKE).—This is an average season. The condition of pastures and mowings is 80; of fall seeding, 100. The

bloom of fruits, apples, pears and peaches, 80; plums, 60; small fruits, 100. Strawberries suffered from frost. Brown-tail moths are doing the most damage. Of planting, 50 per cent has been done; this is a normal amount. Farm help is hard to get, and only 25 per cent is good help. Wages paid help average \$25 per month, with board, and \$2 per day, without board.

Essex (ELIAS ANDREWS). — The season has not been as warm as common thus far, although, agriculturally speaking, it is rather above normal. Grass has made great growth and pastures are uncommonly good. The condition of fall seeding is 80. The bloom of fruits was: apples, 100; pears, 75; peaches, 80; plums, 40; small fruits, 75. Peaches bloomed well, but did not set over 25 per cent. Strawberries were blighted by frost to some extent on May 14. Insects doing most damage are the gypsy and brown-tail moths and tent caterpillars. Of planting, 75 per cent has been completed, which is above the normal amount. Help is scarce and not over 50 per cent is good help. The average wages paid are: with board, per month, \$28; without board, per day, \$2. A much larger acreage of potatoes than usual will have been planted. Crows may do a little damage by taking a few hills of corn. Apples and pear trees bloomed about ten days earlier than usual. Farm stock wintered well, and everything points to a good season for the dairy interests.

NORFOLK COUNTY.

Millis (E. F. RICHARDSON). — It is a late season. Pastures, mowing and fall seeding are in 90 per cent condition. The bloom of fruits was: apples, 75; pears, 85; peaches, 150; plums, 60; small fruits, 50. No frost damage. The tent caterpillars are doing the greatest damage. Of planting, 10 per cent has been done, which is less than normal. Help is scarce, and only 40 per cent may be considered efficient. Thirty dollars per month and \$2 per day are the wages paid. The acreage of corn will be less, that of potatoes more than usual.

Norwood (FRANK A. FALES). — The present season is two weeks late. The condition of pastures and mowings is 75; that of fall seeding, 80. This did not winter well. The bloom of fruits was: apples, 90; pears, 65; peaches and small fruits, 75; plums, 50. No frost damage reported. Cutworms and tent caterpillars seem to be the most injurious insects. Twenty per cent of planting is already done. Farmers are two weeks late in this operation. Farm help is scarce; 40 per cent is reliable. Wages average \$28 per month with board and \$1.85 per day without board.

Wrentham (JEREMIAH A. COBB). — The season is about the same now as a normal. Owing to the early warm spell trees and wild vegetation are a little early. The condition of pastures, mowings

and fall seeding is 100. The bloom of fruits was: apples, 100; pears, 125 to 150; peaches, 150 to 200; plums, 25; small fruits, 100 or better. A lot of plum trees were winterkilled. Gooseberries have set very light, probably on account of heavy freeze after the leaves were well out. Tent caterpillars are many times thicker than usual. The San José scale, green aphid and woolly aphid are likewise doing damage. Of planting, 50 per cent is already done, which is very little different from an average year. Farm help is scarce; 10 to 25 per cent can be said to be reliable. Wages per month, with board, range from \$20 to \$30; per day, without board, \$2 is the wage. Better care is given fruit trees as regards trimming and spraying. Quite a lot of young trees have been set out. Crows are thicker and bolder than usual. Farming on a large scale is not practiced in this vicinity and very few get a living from their farms. The soil is generally gravelly and a large part of the low land is marshy.

Stoughton (CHARLES F. CURTIS).—This season is from seven to ten days ahead of the average. The condition of pastures and mowings is 75. Fall seeding did not winter well; its condition is 80. The bloom of fruits was: apples, plums and small fruits, 100. Pears and peaches, 90. The most insect damage is being done by brown-tail and gypsy moths and tent caterpillars. Planting is one-third done; this is fully up to the average. Help is scarce and only 10 per cent may be considered good help. The average wages are: with board, per month, \$25 to \$30; without board, per day, \$2. There will be a 5 to 10 per cent increase of corn planted. Rain is very much needed as the hay fields are beginning to suffer.

Weymouth (F. WILBUR LOUD).—On account of recent showers the season may be considered very favorable. Pastures and mowings are in good condition, and fall seeding is in fine condition. No frost damage reported. Gypsy and brown-tail moths seem to be the most injurious insects. Of planting, three-fourths has been completed; this compares fairly well with an average year. A very small per cent of farm help is any good; help is scarce. Wages average \$2 per day without board. More corn and potatoes than usual will have been planted. More people are interested in farming.

BRISTOL COUNTY.

Easton (WILLIAM N. HOWARD).—Agriculturally speaking, the present season compares favorably with a normal one. Pastures, grasslands and fall seeding are in 100 per cent condition. The bloom of fruits was: apples, 75; small fruits, 90. Frost damaged strawberries. Tent caterpillars appear to be the most injurious insects. Planting is one-half done, which is the normal amount. Help is scarce; 50 per cent may be considered efficient. The average wages are: with board, per month, \$25 to \$30; without board, per day,

\$1.50 to \$2. No appreciable damage is being done by birds with the exception of that done by crows.

North Attleborough (H. P. CALDWELL).—The present season is somewhat backward and very cold. The condition of pastures and mowings is 90; of fall seeding, 100. The bloom of fruits was: apples and small fruits, 100; pears, 80; peaches, 90; plums, 70. No frost damage noticeable as yet. Tent caterpillars are very numerous and are now beginning to strip the foliage. Planting is 40 per cent done, which compares favorably with an average year. Farm help is scarce, and only 40 per cent may be considered good. Help is paid \$30 per month, with board, and \$1.75 per day, without board. Fruit raising is being increased.

Seekonk (JOHN W. PECK).—The heavy spring rains held the farmers back about ten days, and when the sun finally shone we had very heavy westerly winds that dried the ground quickly, blowing the covering from some small seeds. Market gardeners are rushing in tomatoes, peppers, etc., while the weather is favorable. Pastures, mowings and fall seeding are in 90 per cent condition. The bloom of fruits was: apples, 75; pears, plums and small fruits, 90. No frost injury heard of. The most injury from insects is being done by cutworms and tent caterpillars. Of planting, 60 per cent is already completed; this operation is a little backward. Farm help is plentiful; 70 per cent is good. Wages average \$28 per month with board and \$1.75 per day without board. More corn and potatoes than usual will have been put in. Some farmers are thinking of plowing under green crops to lighten the soil.

Dighton (HOWARD C. BRIGGS).—The season is an average one, but there has been a lack of rain for the past month. The condition of pastures, grasslands and fall seeding is 75. The last-named wintered well. All fruit bloomed heavily. Peaches and strawberries suffered slightly from frosts. Cutworms and tent caterpillars appear to be doing the greatest damage. Of planting, 75 per cent is already done, and this amount is about the average. Help is scarce, with only 50 per cent good help. Wages average \$35 per month with board and \$1.75 per day of nine hours without board. The acreage of corn will be increased.

Freetown (G. M. NICHOLS).—The present season is a little below the average because of lack of rain. The condition of pastures and mowings is 85; of fall seeding, 100. The bloom of fruits was: apples, 105; pears and small fruits, 100; peaches, 125. Frost damaged peaches and strawberries. Most injurious insects are tent caterpillars and San José scale. Sixty-five per cent of planting is completed; this falls below the average. Farm help is plentiful, but only 50 per cent can be considered reliable. The average wages paid help are: with board, per month, \$30; without board, per day,

\$1.50. Less corn and potatoes than usual will have been planted. There are very few song birds this spring. The crows are pulling potato sprouts and corn. The brown-tail moths are held in subjection. Squirrels are more troublesome than crows to corn growers, particularly near the woods; they follow the planter and dig up the seed.

Fairhaven (D. W. DEANE). — Agriculturally speaking, the present season compares very favorably with a normal. Pastures, grasslands and mowings are in 90 per cent condition; fall seeding wintered well. The bloom of fruits was: apples, 100; pears, 85; peaches, 75; plums, 100; small fruits, 100. There has been no damage from frost as yet. Cutworms and tent caterpillars appear to be doing the most damage. Seventy-five per cent of the planting has been done, which is about the same as usual. Farm help is scarce and only 5 per cent can be called good help. Wages average \$25 per month with board and \$1.65 per day without board. The potato acreage will show a falling off of 20 per cent. All kinds of birds seem to be diminishing; some species are not in evidence at all up to this time.

PLYMOUTH COUNTY.

Brockton (DAVID COPELAND). — The present is a few days in advance of a normal season. The condition of pastures, mowings and fall seeding is 80. The bloom of all fruits was normal, but strawberries suffered from frosts. Tent caterpillars appear to be doing the most damage. Of planting 75 per cent is already done, which is about the normal amount. Farm help is scarce; 50 per cent is good help. Wages average \$23 per month, with board, and \$1.50 to \$2 per day, without board. There will be, perhaps, a little more corn planted than usual.

Hanover (HARRISON L. HOUSE). — This is a normal season. Pastures, mowings and fall seeding are in normal condition. All fruits bloomed full, but strawberries suffered from frost to some extent. Tent caterpillars are all that cause damage to any extent; some cutworms are busy, however. Planting is one-fourth done, which is the average amount. Help is scarce, and only 25 per cent can be considered reliable. Farm help is paid \$25 per month with board and \$2 per day without board. Several small orchards have been set out. The weather is cold for the season and rather dry.

Duxbury (HENRY A. FISH). — It is a cold and backward season and the ground is very dry. Grass is in fair condition. Fall seeding wintered well and its condition is 90. The bloom of fruits was: apples, about the same; pears, good; peaches and plums, frosted; strawberries, good. Tent caterpillars in large numbers are working havoc. Of planting, one-half is finished; this is about the same as usual. Farm help is scarce; 50 per cent is good help. Day wages

are \$1.50 to \$2. Probably more corn will have been planted. Farmers are using lime to some extent.

Bridgewater (ROWLAND CASS). — Agriculturally speaking, the present season compares favorably with a normal one. The condition of pastures and mowings is 80; that of fall seeding, 100. The bloom of fruits was: apples, 75; pears, 85; peaches, 100; plums, 60. Strawberries suffered slightly from frost. Cutworms, tent caterpillars and currant worms appear to be doing the most damage. Planting is 70 per cent done; this is about a fair average amount. Farm help is scarce, and is paid \$1.75 per day of nine hours.

Lakeville (NATHANIEL G. STAPLES). — The season is rather backward. Pastures, grasslands and fall seeding are in normal condition. The bloom of fruits was: apples, pears and small fruits, 100; peaches and plums, 100. Frosts damaged strawberries. Tent caterpillars are doing principal damage to wild cherry trees. Cutworms are also at work. Of planting, 50 per cent is completed. This is 50 per cent less than average. Farm help is scarce and only 10 per cent is good help. Wages paid average, with board, per month, \$25; without board, per day, \$1.75 to \$2.

Plymouth (LESTER E. AVERY). — The present season is cold and backward, — about two weeks late. The condition of pastures and mowings is 75; of fall seeding, 90. The bloom of fruits was: apples and plums, 50; pears and small fruits, 100. Tent caterpillars are most injurious, attacking apple trees and black cherries. Planting is 50 per cent done; farmers are a little late in this work. Help is scarce and 50 per cent is good help. Without board, \$1.50 per day is the wage paid. Less corn and more potatoes will have been put in. Pigeons are doing appreciable damage by pulling oats and peas as they begin to grow, and red-winged blackbirds take corn and oats.

Marion (GEO. F. RICHARDS). — At the present time the season compares favorably with a normal one. Pastures, mowings and fall seeding are in normal condition. All fruits bloomed full, except peaches, the bloom of which was only fair. Cranberries suffered from frosts to some extent. So far, tent caterpillars appear to be doing the most damage. Of planting, 75 per cent is already completed; we are a little late. Farm help is scarce and 75 per cent is good help. Wages average \$30 per month with board and range from \$1.75 to \$2 per day without board. I wish we had more birds.

BARNSTABLE COUNTY.

Falmouth (D. R. WICKS). — With such a mild winter the season is not far from a normal one. The condition of pastures, grasslands and fall seeding is 100. The bloom of fruits was: apples, pears and peaches, 100; plums, 50. Early strawberries were hit by the

frost in some parts of the town. Tent caterpillars are very plentiful, as are cutworms in some places. Planting is 50 per cent done, which is 75 per cent of the normal. Farm help is not plentiful; 40 per cent can be called reliable. Monthly wages with board range from \$35 to \$40, and 25 cents per hour is paid for day labor. A little more of both corn and potatoes will have been planted. We have a mushroom plant run by a company. Corn is hardly up enough for birds to pull. Most farmers have tarred their corn this year.

Barnstable (JOHN BURSLEY).—The season is a little late and very dry. Pastures and mowings are in 65 per cent condition. Fall seeding is in 70 per cent condition; this did not winter well. The bloom of all fruits was normal. Most insect injury is being done by tent caterpillars. Of planting, 40 per cent has been done, which is 10 or 15 per cent less than the average at this time of season. Farm help is scarce and 25 per cent is reliable. Wages average \$30 per month with board and \$2 per day of nine hours without board. Some small areas of swamp are being cleared and set to cranberries.

Harwich (DAVID ELDER).—The season is about three weeks later than usual and cold and dry. The condition of pastures and mowings is 100; of fall seeding, 125. The bloom of fruits was: apples, 175; pears, 150; peaches, 125; plums, 150; strawberries, 125. Cutworms, San José scale, tent caterpillars, bud moths and white grubs are all doing damage. Of planting, 60 per cent is already done, which is less than average, on account of backward season. Help is plentiful, but none is good help; all are inexperienced and inefficient,—mostly Portuguese. None are hired by the month. Daily wages run from \$2 to \$2.50. A few more potatoes will be planted; also several plots by boys in the eighth-acre contests. Cranberry growers are beginning this year to do considerable spraying. A few blackbirds occasionally get into gardens. There is little upland farming here. Cranberries are almost the only cash crop. The annual shipment from Harwich runs from 5,000 to 10,000 barrels, and there are three other shipping points in town.

Truro (JOHN B. DYER).—This is an average season, only cooler than usual. Pastures, mowings and fall seeding are in normal condition. All fruits bloomed full. Tent caterpillars, brown-tail moths and cutworms seem to be the most injurious insects. Planting is 25 per cent finished; this is less than the average, owing to cool weather. Gardeners hesitate to plant when nights are cold and frosts liable to occur. Farm help is scarce; 75 per cent is good. Pay determines quality somewhat. Wages average \$20 per month and perhaps \$2 per day. A more general interest in spraying trees is noticed.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE).—The season is later than usual on account of the cold weather. Pastures and mowings are in 90 per cent condition. The bloom of apples was 75; of pears, late. Tent caterpillars are doing the most damage. Of planting, 70 per cent is already done; this is below the average amount. Help is scarce and only 25 per cent is good help. Wages per month, with board, range from \$20 to \$25. No bird damage is noticeable at this time. A little later blackbirds and crows will pull the corn.

NANTUCKET COUNTY.

Nantucket (H. G. WORTH).—The season is about normal. The condition of pastures and mowings is 75. Insects are not doing much damage as yet, but tent caterpillars were never so numerous. Planting is 85 per cent done; this is about as usual. Help is scarce, and only 10 per cent can be said to be reliable. Farm help is paid \$30 per month with board and \$2 per day without board. Lack of rain from April 28 to May 23 has injured the hay crop 25 per cent.

SUMMARY OF FRUIT CROP CONDITIONS.

The increased interest in fruit production and in apple growing manifested in Massachusetts and New England during the past few years has been the direct result of an energetic agitation of the subject, by exhibitions and otherwise. This agitation is accomplishing four results; first, it is increasing the interest and activity of those already engaged in fruit growing, and causing them to grow more and better fruit; second, it is calling the attention of those desiring to engage in farming, and of capitalists who have money to invest, to the opportunity offered by this special phase of agriculture; third, it is bringing to the attention of all growers the wonderful markets at our very doors, now being supplied with western apples, and which may be secured to New England growers if they will only put up the better-flavored New England product in the style which appeals to the consumer, and with an understood guarantee such as that which backs the western product; and fourth, it is demonstrating to the consumer in the most practical manner that Massachusetts apples are unexcelled in quality, and are far superior to the much-advertised fruit from the west. Thus has been created a tide of enthusiasm for the industry which has now reached such proportions as to engulf many who before had no personal interest in it whatever. In view of this fact the need of special reports upon the conditions and prospects of apple and other fruit crops is more than ever apparent.

This first special report is but a start. With the help and co-operation of those who consent to act as our correspondents we hope to work out and perfect a series of questions which will bring out in their proper proportions all of the details necessary for a complete and comprehensive report.

In the first blank of the season, sent out to 125 prospective

correspondents, and returnable May 24, the following questions were asked: —

1. What fruits do best in your locality?
2. Is there plenty of land available for fruit culture in your vicinity?
3. (a) To what extent are new orchards being planted in your locality? (b) What kinds of fruit?
4. What per cent of the buds of the following fruits wintered: peach, plum, cherry?
5. What per cent of an average bloom did apples show (100 representing average); pears?
6. What insects are at present most troublesome on fruit trees?
7. Is spraying for the San José scale practiced?
8. Is spraying for codling moth and other fruit pests practiced during May and early June?
9. What are the prospects for the small fruit crop (give per cent, 100 representing the average)?
10. (a) Are markets good? (b) What is the most common method of marketing — direct to consumer, co-operative or through commission houses?
11. What fruits, if any, have suffered from frosts?

From the above correspondence we received 72 returns, and from these a summary of conditions relative to the fruit crop has been compiled.

FRUITS ADAPTABLE TO MASSACHUSETTS.

Every reply received, 72 in all, gave apples as one of the fruits which flourish best in their especial locality, thus clearly demonstrating that the apple is king of fruits so far as being adapted to Massachusetts is concerned. The replies were fairly well distributed over the State, with a preponderance in Middlesex, Worcester, Essex and Franklin counties. Forty-three correspondents, fairly well distributed, included pears in the list; 37 spoke of peaches, Berkshire County not being included; 23 reported plums, Berkshire and Hampden counties not being included; 22 included strawberries in the list, no reports from Berkshire, Hamp-

shire or Hampden mentioning this fruit; 15, without representation in Berkshire, Bristol and Barnstable counties, included cherries in the list; 14, all small fruits; and 12 each, strawberries and raspberries. This, of course, is not thoroughly representative of the State, but can be taken as generally indicative of the adaptability of the State to the growing of the different fruits. Taken by counties, the returns show the different ones best adapted to the following fruits: Berkshire, apples, pears; Franklin, apples, pears, peaches; Hampshire, apples, pears, peaches, plums, small fruits; Hampden, apples; Worcester, apples, pears, peaches, strawberries; Middlesex, apples, pears, peaches, small fruits; Essex, apples, peaches, plums; Norfolk, apples, small fruits; Bristol, apples, small fruits; Plymouth, apples, small fruits, including cranberries; Barnstable, same as Plymouth.

LAND AVAILABLE FOR FRUIT CULTURE.

There is evidently plenty of land available for fruit culture in about all sections of the State, for out of the total number only 7 replied in the negative to this question. These replies were received from the following towns: Wilbraham, Belmont, Stoneham, Westwood (2), Hingham ("land must be cleared"), Truro. From the facts brought out by the first two questions, then, it is very apparent that there is ample justification for still further agitation of the subject of fruit growing. The market for fruit products, grown, harvested, packed and marketed according to the most approved methods, is practically unlimited; nearly all fruits can be grown to advantage in almost any part of the State; land suitable to their culture is abundant; all the essentials are present, with the exception of the man to till the soil. Our duty is to present to the man more forcibly than ever the opportunity that lies unobserved so close at hand.

NEW ORCHARDS.

Judging from the returns, there does not seem to be as much activity in the establishment of new orchards as has been evidenced during the past few years. Generally speak-

ing, however, there is a reasonable amount of activity in this direction. Apples are receiving by far the greatest amount of attention, possibly because more attention has been paid during the past few years to booming this fruit, but more probably because of its keeping qualities as compared with the more perishable fruits and berries. Considered by counties the summary of the answers to this question appears about as follows: Berkshire, some new orchards, but not extensively, apples almost exclusively; Franklin, quite extensively, apples, some peaches, pears and cherries; Hampshire, some, but not very extensively, apples and a few peaches; Hampden, increased activity, apples, peaches and a few plums; Worcester, generally an increased acreage, and especially in certain localities, apples principally, also peaches, pears, cherries and strawberries; Middlesex, generally an increased acreage, with certain localities very active, among which is Littleton and vicinity, apples largely, also peaches, pears and small fruits; Essex, quite extensive operations, apples, pears and peaches; Norfolk, to a limited extent, apples and peaches; Bristol, increased acreage, apples and peaches, the latter used largely as fillers, strawberry growing on the wane; Plymouth, activity is apparent only in special localities, apples, peaches and plums; Barnstable, small orchards in different localities, apples, peaches and pears.

WINTERKILLING OF FRUIT BUDS.

In general, the past winter was a very favorable one to fruit buds, the weather being exceptionally mild for the most part. The month of February, however, brought with it some cold weather, and during this month most of the damage to buds occurred.

The figures at hand show for the whole State that of peach, plum and cherry buds the following percentages came through the winter in good condition: peach, 77.8; plum, 72.8; cherry, 91.1.

FRUIT BLOOM.

This subject was quite fully discussed under the same heading in the summary of general crop conditions, and therefore further discussion is unnecessary. Suffice it to

say that the following table is a summary of the returns received from general correspondents. On the special blank to fruit correspondents we simply asked for the bloom of apples and pears. This is given underneath the table, being averaged in with the returns on the same subject from the general correspondents.

| COUNTY. | Apples. | Pears. | Peaches. | Plums. | Small Fruits. |
|-----------------------|-------------------|-------------------|----------------|----------------|----------------|
| Berkshire, | 91.5 | 94.1 | 77.5 | 68.1 | 87.0 |
| Franklin, | 87.5 | 87.5 | 83.9 | 81.8 | 92.2 |
| Hampshire, | 91.6 | 89.1 | 85.4 | 76.9 | 90.8 |
| Hampden, | 97.5 | 98.3 | 87.9 | 86.1 | 97.5 |
| Worcester, | 82.1 | 89.1 | 76.0 | 77.6 | 88.8 |
| Middlesex, | 76.8 | 91.7 | 80.5 | 74.6 | 90.7 |
| Essex, | 71.0 | 92.8 | 87.8 | 68.1 | 92.2 |
| Norfolk, | 95.0 | 96.3 | 118.0 | 72.5 | 85.0 |
| Bristol, | 102.1 | 95.5 | 94.4 | 90.0 | 96.0 |
| Plymouth, | 93.2 | 87.7 | 103.0 | 85.5 | 95.0 |
| Barnstable, | 106.3 | 105.0 | 101.9 | 93.6 | 100.8 |
| Dukes, | 75.0 ¹ | - ² | - ² | - ² | - ² |
| Nantucket, | - ² | - ² | - ² | - ² | - ² |
| STATE, | 88.7 ³ | 92.2 ⁴ | 88.1 | 79.6 | 91.9 |

¹ One report.

² No report.

³ Composite result from all returns, 86.7.

⁴ Composite result from all returns, 91.7.

INSECT DAMAGE.

The widespread scourge of tent caterpillars, to which reference has already been made in the summary of general crop conditions, is again brought forcibly into notice in the replies to this question. Fifty-seven correspondents include this insect in those specified as doing the most damage, the majority of them mentioning this insect first; 29 included the San José scale and an equal number the brown-tail moth; 20, the gypsy moth, and scattering reports mentioned the plant aphis, curculio, bud moth, blister mite and canker worm. The majority of those reporting the gypsy and brown-tail were located in Worcester, Middlesex and Essex counties, as would be expected. Returns from every county indicated that the tent caterpillar was doing more damage than any other one insect.

SPRAYING.

The answers to the question as to whether or not spraying for San José scale and for codling moth and other insects is being done simply bear out the contentions of those who have been so earnestly advocating these preventive measures for some years past. From the localities which are now known to be producing the very finest fruit, some reports state that spraying both in winter for the scale and in spring and summer for other insect pests and for fungous diseases is an almost universal practice. Too great stress cannot be laid upon the importance of spraying. Only in this way can the best fruit be obtained. While this may seem unnecessary precaution and advice to those of our growers who rightly regard spraying as simply part of the business, there are still far too many farmers who are loath to recognize its benefits and apply it in actual practice.

SMALL FRUIT PROSPECTS.

The prospect for small fruits as a whole has been somewhat reduced by frosts during the month of May, and, from the returns at hand, it appears that the crop will be about 78.3 per cent of normal for the State as a whole. Owing to a limited number of returns some of the averages may not be as accurate as with a larger number, but the deductions for counties are as follows: Berkshire, 80 per cent; Franklin, 81.6 per cent; Hampshire, 50 per cent; Hampden, 45.6 per cent; Worcester, 72.7 per cent; Middlesex, 79 per cent; Essex, 90.8 per cent; Norfolk, 82 per cent; Bristol, 87.5 per cent; Plymouth, 100 per cent; and Barnstable, 91.6 per cent.

MARKETS AND MARKETING.

The reply to the question as to whether or not markets are good conveys some interesting information. Forty-three correspondents reply in the affirmative, 19 report "fair," and only 3 report in the negative, these very likely in view of unsatisfactory local conditions. The reply, then, bears out the contention that our markets are excellent; and they

can be still further improved if our growers will see to it that their products are grown, harvested and put up in the very best manner, thus insuring a guaranteed, uniform, A1 product.

The marketing problem is one which is of equal importance with the growing of different crops. Of what avail is it if a man is able to produce large crops of excellent quality if he is forced to dispose of them at a price no higher than the ordinary run? The replies to the question seeking information upon the method of marketing now in vogue brought the following information: 44 report "through commission houses;" 33, "direct to consumer;" 17, "through the local stores;" 5, "through buyers;" 2, "co-operatively;" 2, "export." Many of the reports "direct to consumer" doubtless came from localities where the quantity of fruit raised was not particularly large and the town and neighboring communities furnished an outlet. As the industry increases, all cannot sell direct to the consumer, which method doubtless results in the producer securing the largest prices. On the other hand, however, the market is constantly upon the increase. Co-operation is the solution of the marketing question, and through this method, when the individual growers are willing to merge and to have the undertaking conducted on a sound basis, will the largest possible return be made to a group of fruit growers.

FROST DAMAGE.

There appears to have been considerable damage to the fruit bloom by frosts during the month of May. Out of the total number of replies at hand only 14, from widely scattered sections of the State, claim that no damage was done, showing that the frosts were general, rather than confined to any particular locality. By far the greatest damage was done on comparatively low lands. Strawberries seem to have been the worst sufferers, 35 correspondents reporting more or less serious damage to this crop; peaches, evidently, were also heavy sufferers, 23 reporting frost injury to the bloom; apples, also, especially on low land, were injured, 18 re-

porting damage, although the majority claimed no injury on high land; 11 included the plum in the list; 5 spoke of currants; 4 cherries; 3 pears; and 2 each quinces and small fruits as a whole.

NOTES OF FRUIT CROP CORRESPONDENTS.

[Returned to us May 24.]

BERKSHIRE COUNTY.

Richmond (R. E. ANNIN, Jr.). — Apples and pears do best in this locality; raspberries among the small fruits. There is plenty of land available for fruit culture. In 1912 two orchards of 800 trees each and two of 100 each were set out. This spring about 200 trees; apples almost exclusively. About 80 per cent of the plum buds wintered. Cherries and peaches not grown to speak of. Apples showed 110 per cent of an average bloom; pears, 75. Tent caterpillars this spring really alarming in their number and wide distribution throughout the town. Spraying for San José scale is practiced by four farmers only; for codling moth and other fruit insects spraying is done by about five. Prospect for the small-fruit crop is about 80 per cent of average; frost did some damage and the principal strawberry grower has a smaller and poorer field than usual. Markets are fair, except for apples which are poor. The most common method of marketing is direct to the consumer. Plums, crab apples and some pears and apples on low lands suffered from frost. Pittsfield seems to use very high-grade stuff in every food but apples; real good ones, locally grown, do not bring any more than ungraded culls. When the present young orchards come into bearing the growers will have to undertake a campaign of education to make a profit.

New Marlborough (A. LINCOLN TERRY). — Apples and pears do best in this locality. There is plenty of land available for fruit culture. Very few new orchards are being planted; mostly apple. Fruit buds wintered about as follows: peach, 90; plum, 95; cherry, 90. Apples showed a 90 to 95 per cent bloom; pears, 95. The codling moth, tent caterpillar and curenlio are doing the most damage. Ten per cent of the orchards are sprayed for San José scale; 15 per cent for codling moth and other pests. The prospect for the small-fruit crop is about 80 per cent. Markets are fair, most selling being done through buyers and commission houses. Peaches and strawberries suffered from frost. In a few places frost appears to have damaged all fruits. Tent caterpillars are more numerous than ever before. Most orchards in this locality receive no care at all.

FRANKLIN COUNTY.

Heath (ERNEST E. KINSMAN). — Apples do best in this locality. There is plenty of land available for fruit culture. Fifty per cent of the farmers are starting apple orchards. Plum and cherry buds wintered without any apparent loss. Apples and pears showed a 100 per cent bloom. The codling moth and blister mite are doing the most damage. Very little scale here. Spraying during May and early June is practiced. The small-fruit crop prospect is 100 per cent. Markets are good, the local store or the consumer being the usual channel. No damage has been done by frost to my knowledge.

Ashfield (C. A. SMITH). — Apples do best in this locality; land is available for their culture to a large extent. New orchards are on the increase, Baldwin, McIntosh and Gravenstein apples being the main kinds of trees planted. The buds of the following fruits wintered as indicated: peach, 100; plum, 25; cherry, 100. Apples showed a 100 per cent bloom, as did also pears. Tent caterpillars are the most troublesome insect at the present time. Spraying for insect pests is quite generally practiced. Small-fruit crop prospect, 65 per cent. Markets are good, the marketing being done co-operatively and through commission houses. Apples were damaged a little by frost.

Bernardston (F. A. CORY'S FRUIT FARM). — Apples, pears, peaches, plums, cherries, strawberries, raspberries, blackberries and currants do best in this locality. There is plenty of land available for fruit culture hereabouts. Very few new orchards are being planted, but apples and peaches are receiving the most attention. Fruit buds wintered as follows: peach, 75; plum, 100; cherry, 75. Apples showed a 75 per cent bloom, pears, 90. Tent caterpillars, plum curculio and plant aphids most prevalent. Spraying for San José scale is not practiced, but during May and early June spraying is done for the codling moth and other fruit pests. Small-fruit crop prospect, 75 per cent. Markets are good, most of the fruit being sold to the retailer. Apples, peaches and strawberries have suffered from frost.

Orange (A. C. WAKEFIELD). — The fruits which do best in this locality are apples, pears, peaches and plums, while cherries do fairly well. Very few new orchards are being planted; these are mostly apples, with a few peaches. Fruit buds wintered as follows: peach, 90 to 100; plum, 100; cherry, 80. Apples showed an 80 per cent bloom and pears, 100. The codling moth, curculio, brown-tail and some gypsy moths are doing the greatest amount of damage. No scale has been found here as yet; some orchardists in the southern part of the town spray for it. Spraying for codling moth and other insects is done to some extent. Prospect for the small-fruit crop is 80 per cent. Markets are fair, the most common method being direct

to the consumer, although some fruit is sold through commission houses in Boston and Worcester. Very little frost on hills; in valleys, strawberries and peaches some damage.

HAMPSHIRE COUNTY.

Cummington (CHARLES M. CUDWORTH).—All fruits grow well with the exception of the peach. There is much land available for fruit culture. Apples are being planted, but very few commercial orchards. Fruit buds wintered as follows: peaches poorly; plums fair; cherries excellent. Apples and pears showed a 100 or better per cent bloom. Tent caterpillars worse than for many years. Very little spraying for San José, some for other fruit pests. Small fruits blossomed better than I have ever seen them. Markets fair, some fruit sold direct to consumer, but largely through commission men. Cherries and apples badly hit by frost on low land.

Middlefield (ARTHUR D. PEASE).—In this locality apples do best. There is plenty of land available for fruit culture. Few new orchards are being planted; mostly apples and a few peaches. Apples showed a 75 per cent bloom and pears, 100. The codling moth and tent worm are doing the most damage. Spraying for San José scale is not practiced, but during May and early June spraying for codling moth and other fruit pests is practiced to a small extent. Most marketing is done through commission houses. Some fruits were damaged by frosts; many have since blossomed all right.

Pelham (M. N. ALLEN).—Peaches, apples and all kinds of berries do well in this locality, and there is plenty of land available for fruit culture. Peaches and apples mostly are being planted. Fruit buds wintered as follows: peach, 98; plum, 98; cherry, 98. Apples showed a bloom of 100; pears, 75. Scale insects are the most troublesome on fruit trees. Spraying for San José scale, for the codling moth and other fruit pests is practiced. Prospects for strawberries, 50 per cent. Markets fair, most of the marketing being done through stores and direct to the consumers. Strawberries and currants have suffered from frosts.

HAMPDEN COUNTY.

West Springfield (ETHAN BROOKS).—Apples receive the most attention and consequently do best in this locality. There is plenty of land available for fruit culture, but new orchards are being planted only to a limited extent, and are mostly apples and peaches. Fruit buds wintered as follows: peach, 90; plum and cherry, both, 90. Apples showed a bloom of 75; pears, 80. San José scale, tent caterpillars and codling moths are doing the most damage. Spraying for all insects is practiced. Prospect for the small-fruit crop is 50 per cent. Markets good, most marketing being done through dealers. Strawberries, plums, cherries.—and apples to some extent,—have suffered from frosts.

Wilbraham (L. W. RICE).—Peaches, apples, cherries, pears, strawberries and other small fruits do well here when well cared for. Land for fruit culture is scarce, it being difficult to get large fields owing to line fences. No new orchards planted. Eighty per cent of peach buds wintered. Apples and pears showed a bloom of 100. The tent caterpillar, codling moth and San José scale are the most troublesome insects. Spraying for San José scale is done by the best growers, and a few growers spray for codling moth and other fruit pests. The prospects for the strawberry crop are 10 per cent. Peaches were greatly damaged by frosts, and apples and strawberries to a large extent.

Brimfield (EDWARD S. BUTTERFIELD).—Apples and peaches do best in this locality. Available land for fruit culture is plenteous, and a fair extent of apple and peach orchards is being planted. Fruit buds wintered as follows: early peaches, 100; late peaches, 10; plums, 25; cherries, 100. Apples and pears showed a bloom of 100. Codling moths and tent caterpillars are doing the most damage. No San José scale has been found. Spraying for codling moth and other fruit pests is practiced. Prospects for small-fruit crop are: strawberries, 100; blackberries, 100; raspberries, 25; currants, 80. Markets fair, most marketing being done through commission men. On low lands apples have suffered considerably from frosts; peaches slightly.

WORCESTER COUNTY.

Phillipston (WALTER L. MANN).—Apples, pears, peaches, plums, cherries, grapes and berries do well in this locality. There is plenty of available land for fruit culture, and new orchards—apple and peach—and strawberry beds are being planted to quite a large extent. Fruit buds wintered as follows: peaches, 85; plums, 65; cherries, 90. Apples showed a bloom of 75; pears, 95. Spraying is practiced for San José scale, codling moth and other fruit pests. Tent caterpillars are most troublesome. Prospect for small-fruit crop is 75 per cent. Berries have suffered from frosts.

Fitchburg (HENRY J. ANDREWS).—In this locality strawberries and apples do best. Available land for fruit culture is plenteous, and there is a large increase in the number of new orchards. Twenty-five per cent of plum buds wintered and 75 per cent of cherry. Apples showed a bloom of 100; pears, 125. The most troublesome insects are tent caterpillars and brown-tail moths. Spraying for San José scale, codling moth and other insects is practiced. Prospects for small-fruit crop are 90 per cent. Markets good, most marketing being done through commission houses. On low land strawberries suffered from frosts.

Harvard (A. W. BRYANT).—Apples, pears, peaches, currants, blackberries, raspberries, cherries and strawberries do well in this locality. There is plenty of available land for fruit culture, and new

orchards are being very extensively planted, — mostly apples, with some peaches and pears. One hundred per cent of peach and plum buds wintered. Apples showed a bloom of 60; pears, 110. Tent caterpillars, brown-tail and gypsy moths are doing the most damage. Spraying is practiced for San José scale, codling moth and other fruit pests. Prospects for small-fruit crop are: currants, 100 per cent; blackberries and raspberries are just budding, but look fine. Generally speaking, markets are good, and most of the marketing is done through commission houses. In some sections strawberries, apples and peaches were damaged by frosts.

New Braintree (CHARLES D. SAGE). — Pears have done well in this locality, but apples do best; last season pear blight did serious damage to the trees. Available land for fruit culture is plenteous, but only a few apple orchards are being planted. Fruit buds wintered as follows: plums, 85; cherries, 75. Apples showed a bloom of 100; pears, 75. Tent caterpillars are numerous. No spraying is done for San José scale, and very little for the codling moth and other fruit pests. Not many small fruits grown. This is a good fruit country, but little is done with it, most of the farmers being satisfied with what nature gives them. Have observed but little frost damage.

Holden (NATHAN W. SANBORN). — Apples and pears do best in this vicinity. Available fruit land is plenteous, and new orchards are being planted to a moderate extent, largely apple orchards and some pears. Fruit buds wintered as follows: peach, 25; plum, 50; cherry, 90. Apples showed a bloom of 100; pears, 75. The tent caterpillar is doing the most damage. Spraying, to a small extent, is practiced for San José scale, also for codling moth and other fruit pests. Markets are good, 75 per cent of marketing being direct to consumer and 25 per cent through commission houses. Strawberries and apples have been injured by frosts.

Westborough (HOWARD P. GILMORE). — Apples, peaches, pears, currants and raspberries do best in this locality. There is plenty of available land for fruit culture. Fifteen hundred trees have been planted, — peaches and apples. Fruit buds wintered as follows: peach, 75; plum and cherry, 80 to 90. The bud moth, tent caterpillar, brown-tail and codling moths and scale are most troublesome. On 75 per cent of the farms spraying for San José scale and codling moth and other pests is practiced. The prospects for small fruit are: strawberries, 25; raspberries, 80 to 100. Markets are fair, some marketing being done through local stores, surplus, through commission houses. No noticeable damage by frosts.

Dudley (I. HAROLD EASTERBROOK). — In this locality apples, pears, strawberries, raspberries and blackberries do best. Available land for fruit culture is plenteous, but only in a small way are new orchards being planted, these being apple, peach, cherry, plum and small-fruit orchards. Fifty per cent of peach buds wintered and 80

per cent of pear buds. Apples showed a bloom of 60; pears, 80. San José scale, tent caterpillar and the codling moth are doing the most damage. Spraying is practiced for San José, codling moth and other fruit pests. Small-fruit crop prospects are: strawberries, 75 per cent; raspberries, 75 to 90. Markets fair, sales being made direct to consumer. Strawberries have been injured by frosts.

MIDDLESEX COUNTY.

Ashby (H. R. FOSTER). — Apples do best in this vicinity. Many farms are taking farms here, but scarcely any new orchards are being planted. Nearly all peach, plum and cherry buds wintered. Apples and pears showed an average bloom of 100. The brown-tail and gypsy moths and the tent caterpillar are the most troublesome. In two or three places spraying is done for San José scale, as also for codling moth and other fruit pests. A full bloom is expected for the small-fruit crop, although the damage by the late frosts has not been determined. Markets are good, most of the marketing being done through commission houses. To some extent apples and peaches were damaged by frosts.

Littleton (JOHN J. DENEHY). — Apples, pears and peaches seem to do well in this locality. There is plenty of land available for fruit culture, apples being the most popular fruit grown. Eighty-five per cent of peach buds wintered. Baldwin apples showed a bloom of 16%; pears, 85, — the early varieties, 75 to 80. Spraying for San José scale is practiced, but rarely is it done for the codling moth and other fruit pests. Prospect for Baldwin apple crop is very light; early varieties good; peaches very good. Markets good, most of the marketing being done through commission houses, teaming to Boston and through buyers.

Concord (C. W. PRESCOTT). — In this locality strawberries, apples and pears do well. There is plenty of land available for fruit culture, and some new apple orchards are being planted. Fruit buds wintered as follows: peach, 85; plums, none; cherries, 80. The bloom of apples was 90; pears, 95. Most damage is done by San José scale, for which some spraying is done. Spraying is also practiced for codling moth and other fruit pests. The small-fruit prospects are 65 per cent. Markets are good, and the most common method is direct to consumers and through commission houses. Strawberries have been damaged by frosts.

Bedford (CHARLES W. JENKS). — The fruits doing best in this locality are apples and strawberries. Available land for fruit culture is plenteous, but only a limited number of new orchards are being planted; those are apple and small-fruit orchards. Ninety per cent of peach and plum buds wintered and 100 per cent of cherry buds. The average bloom of apples was between 75 and 90,

and pears showed a bloom of not more than 50. Tent caterpillars are unusually prevalent, with the usual infestation of brown-tail, gypsy and San José scale. Some spraying is done for San José scale, codling moth and the other fruit pests. Prospects for small-fruit crop are 100 per cent. Markets good, most sales being made through commission houses and by teaming products to Boston. The early bloom of strawberries was injured by frosts.

Arlington (HAROLD L. FROST). — Pears, apples and small fruits do well in this vicinity. There is plenty of land available for fruit culture, but few new orchards are being planted. One hundred per cent cherry, plum and pear buds wintered. The bloom of apples was 100. The greatest damage is being done by San José scale, the gypsy, brown-tail and codling moths, for which spraying is practiced. Prospects for the small-fruit crop are 80 to 90 per cent. Markets are good, and most marketing is done through commission houses. Strawberries, plums, quinces and currants were damaged by frosts.

Framingham (EDWARD F. BELCHES). — Apples, peaches, currants and strawberries do best in this locality. There are plenty of desirable sites for fruit culture, but the land is closely held, and new orchards are not being extensively planted; such as have been planted are largely apple orchards, with a few pears. Less than 50 per cent of peach buds wintered, and apples showed a bloom of 70. The codling and brown-tail moths and the tent caterpillar are the most troublesome insects, and spraying is practiced for these and the San José scale. The small-fruit crop prospect is as follows: currants, 100; strawberries, 25 to 75. The local market is narrow and easily glutted. Most of the products are sold to the local stores, the remainder being sent to Boston. Frosts have injured peaches, apples and strawberries.

Holliston (CHARLES F. WATTS). — But little fruit is grown here, apples being the principal crop. There is plenty of available land for fruit culture, but very few new orchards are being planted. All fruit buds wintered well, and the bloom of apples was 60 per cent; pears, 100. Insects of all kinds are numerous, San José scale, brown-tail and gypsy moths and aphids doing the most damage. Only in a few instances is any spraying done. Prospects for the small-fruit crop are 70 per cent. Markets are fair, and most of the marketing is done through the local stores. To my knowledge there has been no serious damage by frosts.

ESSEX COUNTY.

Haverhill (E. A. EMERSON). — Most of the small fruits, as well as apples, pears, peaches and plums, do well in this vicinity. There is plenty of land available for the culture of fruit, and each year

a few new orchards are planted. These are largely apple, pear and peach orchards. Ninety per cent of the peach buds wintered. Apples showed a bloom of 50; pears, 75. Brown-tail moths are the most troublesome. Spraying for San José scale, as also for the codling moth and other fruit pests, is practiced. The small-fruit crop prospect is 90 per cent. Markets good, products being disposed of through the local stores. No damage by frosts.

Lawrence (FRED E. BATCHELLER). — Apples, peaches, plums and strawberries do best in this locality. Available fruit land is plenteous, but new orchards are not being planted to any great extent. The principal crops planted are strawberries, apples and a few peaches. Fruit buds wintered as follows: peach, 70; plum, 50. Apples showed a bloom of 85; pears, 70. The most injurious insects are caterpillars and gypsy and brown-tail moths. Spraying is being done for San José scale, the codling moth and other pests. Prospect for the small-fruit crop is 80 per cent. Markets are good, and the most common methods of marketing are direct to consumers and through local fruit stores. The damage from frosts was very slight, some apple trees having suffered.

Newbury (P. H. ILSLEY). — The fruits thriving in this vicinity are: apples, pears, peaches, plums and cherries. There is plenty of available land for the cultivation of fruit, and the acreage is rapidly increasing. Apples and peaches and some pears are grown. One hundred per cent of peach, plum and cherry buds wintered. The bloom of apples was 60 per cent; pears, 100 or more. Tent caterpillars are plenteous here, and the gypsy and brown-tail moths are doing damage in some orchards. Spraying for codling moth and other fruit pests is quite generally practiced, while it is done to a limited extent for San José scale. The promise for small fruits is 100 per cent. Markets are fair, most of the sales being made through commission houses. No noticeable damage to fruits by frosts.

Rowley (ALBERT F. TENNEY). — Strawberries, plums and peaches do well in this locality, while apples do only fairly well. There is much land available for fruit growing, but it is owned by permanent residents, and new orchards are being planted only by a few of the wealthy people; these are largely apple and peach orchards. Fruit buds wintered as follows: peach, 75; plum, 85; cherry, 90. Apples showed a bloom of 65 in most instances, but in my garden showed only a 40 per cent bloom; pears, 80. Most serious injury is done by tent caterpillars and brown-tail moths, while the San José scale is spreading rapidly, and in June the gypsy moths do considerable damage. Spraying for San José scale is becoming more general, and spraying for the codling moth and other pests is also practiced. Although the frost damage apparently is not yet over, small fruits promise a 75 per cent crop. Markets although

small are good, and most of the business is done through the local grocers and direct to the consumers. The tender varieties of plums, such as the Japanese, were injured by frosts to a considerable extent, as were strawberries to a lesser degree.

NORFOLK COUNTY.

Westwood (INGRAM I. MARGESON).—Personally, I have good success with peaches, but the fruits doing the best in this locality are strawberries, apples, currants, plums and cherries. There is not much land available for the cultivation of fruit here, and very few new orchards are being planted. Some apples, peaches and currants have been planted during the last five years. Fruit buds wintered as indicated: peaches, 85; plums, 50; cherries, 75. The average bloom of apples was 75; pears, 100. The most troublesome insects are the tent caterpillar, brown-tail moths and San José scale, for all of which spraying is practiced. Small fruits promise a 75 per cent crop. Markets fair, sales being made through commission houses, direct to consumers and to local stores. Currants and strawberries have suffered from frosts.

Medway (MONROE MORSE).—When cared for, apples, peaches, pears, currants, strawberries and blackberries do well in this vicinity. There is considerable land available for the cultivation of fruit, and apple and peach trees are being planted to replace trees which have died from scale and neglect. Eighty per cent of peach buds wintered, and apples and pears showed a bloom of 100. Tent caterpillars are doing the most damage, and in most good orchards spraying is practiced for San José scale and the other insect pests. The prospect for the small-fruit crop is 100 per cent. Most of the marketing is done direct to consumers and fruit dealers. Noted increase in leaf curl and failure of fruit to set. Early strawberries were damaged by frost.

BRISTOL COUNTY.

South Easton (WILMARTH P. HOWARD).—Fruits doing best in this territory are plums, apples, strawberries, pears, gooseberries, currants and grapes. Plenty of land for fruit cultivation is obtainable, and many small orchards are being planted. These are mostly apple orchards, with peach trees as fillers. Strawberry culture is on the wane. Fruit buds wintered as follows: peach, 50; plum, 75; cherry, 100, and pears and apples showed a bloom of 100. Tent caterpillars and the codling moth are doing the most damage. Spraying for San José scale is practiced to some extent, but the practice of spraying for the codling moth and other fruit pests is very extensive. The small fruits promise a 75 per cent crop. Markets are good, the most common method of marketing being direct to

consumer. Peaches and strawberries were injured by frosts to a slight extent.

Acushnet (HENRY A. JACKSON). — Apples, pears, peaches, strawberries and raspberries do best in this locality. There is plenty of land available for fruit growing, and in a small way new orchards are being planted quite extensively. One hundred per cent of apple and pear buds wintered, and the bloom of apples and pears was 100. Most damage is being done by tent caterpillars and San José scale. Some spraying is done for San José scale, but spraying for codling moth and other insects has not yet been generally taken up. The promise for small-fruit crop is 100. Markets good, crops being sold to the retail market men or grocers. No material frost damage.

PLYMOUTH COUNTY.

Bridgewater (L. C. STEARNS). — Fruits doing well in this vicinity are currants, blackberries, apples, cherries and strawberries. There is considerable available fruit land here, and the acreage of new orchards is increasing, apples being the principal crop. Fruit buds wintered as follows: peach, 90 to 95; plum, 95; cherry, 95. The bloom of apples was 100; pears, 90. Tent caterpillars, San José scale and some brown-tail moths are doing damage, and only about one-third as much spraying as should be done is practiced for San José scale. A little spraying is done for the codling moth and other pests. The outlook for the small-fruit crop is good at present. Markets good, most common method of marketing being direct to consumer. Cherries were injured some by frosts as were also peaches and plums.

Rochester (GEORGE B. ALLEN). — Apples, pears, quinces, Japanese plums, raspberries, strawberries, gooseberries and currants do best in this locality, although peaches have thrived in recent years when having a favorable location. Available land for fruit culture is plenteous, but fewer new orchards have been planted than for several years. Such as have been planted were largely peach and apple orchards, although there are a few plums. Ninety-five per cent of peach buds wintered; 30 per cent plums and 100 per cent sour cherries. Astrachan and Greening apples showed a bloom of 100, as also did pears. The greatest damage is being done by San José scale, codling moth, wooly aphis, and, in unsprayed orchards, the tent caterpillar. Spraying for San José scale is practiced, and for codling moth and other pests to a limited extent. Prospect for the small-fruit crop is 100. Markets are good, most of the business being done through retail stores and commission houses. Strawberries suffered slightly from frosts.

BARNSTABLE COUNTY.

West Barnstable (WILLIAM F. MAKEPEACE).—In this locality apples, pears, peaches and strawberries do best. Some land obtainable for fruit culture, and there is an increase in the number of new orchards planted, which are mainly apple and peach orchards. Fruit buds wintered as follows: peach, 80; plum and cherry, 100. Apples showed a bloom of 110; pears, 90. The canker and leaf worms are doing the most serious damage. Fruits are sprayed for codling moth and other pests, but very little is done to prevent infestation by San José scale. Small fruits promise a 100 per cent crop. Markets are good, sales being made direct to consumer. Very little damage by frosts.

Truro (M. F. COREY).—Apples, peaches and strawberries do best in this vicinity. Available land for fruit culture is not abundant, and there is only a moderate acreage of new orchards. Apples, peaches and pears are the principal crops. Fruit buds wintered as follows: peach, 75; plum, 10; cherry 100. The bloom of apples and pears was 100. The greatest damage is done by the brown-tail moth and tent caterpillar. Spraying is done to a limited extent for San José scale, and is also practiced for the codling moth and other insects. Strawberries promise a 75 per cent crop. Markets are fair, and the most common method of marketing is direct to consumer. Plums suffered from frosts.

SUMMARY OF MARKET-GARDEN CROP CONDITIONS.

When considering the agricultural specialties peculiar to Massachusetts one of those which ranks very high in importance is the market-gardening of the State. Owing to its comparatively diversified nature, however, it is more difficult to secure full details upon this particular branch than upon some of the others. A start has been made this month from which we hope to develop a satisfactory system of reporting from which comprehensive and valuable reports may be evolved. No attempt has yet been made to secure reports upon the phase of market-gardening which consists of strictly greenhouse work, that phase being a distinct business in itself.

Blanks were sent to 93 prospective correspondents. The percentage of returns was not as large as it was hoped might be secured. On this blank the following questions were asked:—

1. How did onions keep in storage? What per cent were on hand May 1?

2. How did celery keep in storage? Give date and price received for last sale.

3. How did carrots keep in storage? What per cent were on hand May 1?

4. Did parsley live over in the open? Was it protected by covering? Give per cent of stand.

5. Did spinach live over in the open? Was it protected by covering? What was its condition May 1? (Give per cent, 100 representing average condition.) Give per cent on hand May 20.

6. How did the amount of manure on hand April 1 compare with normal (100 representing normal)?

7. Give per cent of average outside planting already done on the following crops: asparagus, bean, beet, Brussels

sprout, cabbage, carrot, cauliflower, celery, sweet corn, cucumber, dandelion, eggplant, endive, leek, mangel-wurzel, muskmelon, onion, parsley, parsnip, pea, pepper, radish, rhubarb, spinach, squash, Swiss chard, tomato, turnip.

Returns were received from 32 correspondents, and from these the following summary has been compiled:—

Onions kept fairly well in storage in spite of the warm winter. On May 1 there were on hand 8.9 per cent.

Celery in storage was preserved very well with only one report of poor keeping. The latest date reported of last sale was April 15, at a price of 1 cent per pound. The average last sale date was February 1, and the average price received \$2.06 per dozen bunches.

Stored carrots kept well in the majority of instances and only about 4 per cent were on hand May 1.

Parsley lived over in the open, particularly when protected, while much survived the winter without protection. The per cent of stand of normal was 85.8.

Spinach lived over in the open, mostly without covering. Its condition May 1 was 82.3. The percentage on hand May 20 was 7.7.

As compared with the normal amount of manure there was 98 per cent on hand April 1.

The average per cent of outside planting done on May 24 was: asparagus, 87.8; bean, 54.8; beet, 65.7; Brussels sprout, 26.2; cabbage, 48.2; carrot, 75.4; cauliflower, 54.2; celery, 36; sweet corn, 63.1; cucumber, 46.1; dandelion, 53.8; eggplant, 36.3; endive, 35.5; leek, 60; mangel-wurzel, 51.2; muskmelon, 51.1; onion, 86.5; parsley, 84.3; parsnip, 79.7; pea, 91.6; pepper, 50.3; radish, 71.2; rhubarb, 73; spinach, 74.7; squash, 30.9; Swiss chard, 52.7; tomato, 53.1; turnip, 21.1.

NOTES OF MARKET-GARDEN CROP CORRESPONDENTS.

A. H. SHEPARD, *Alford (Berkshire County)*.—Onions kept well in storage; 10 per cent on hand May 1. Carrots kept well; a fair per cent on hand May 1. Ninety represents manure on hand April 1, compared with normal. Per cent of average outside planting

already done on the following crops: asparagus, 10; bean, 75; beet, 50; cabbage, 10; carrot, 100; cauliflower, 10; celery, 0; sweet corn, 25; cucumber, 100; dandelion, 100; eggplant, 100; endive, 100; mangel-wurzel, 0; muskmelon, 100; onion, 0; parsley, 100; parsnip, 100; pea, 100; pepper, 0; radish, 100; rhubarb, 100; spinach, 100; squash, 100; tomato, 25; turnip, 25. Owing to frosts and rains gardens are very late.

W. D. FORBES, *Buckland (Franklin County)*. — Onions kept fair in storage, with none on hand May 1. Spinach lived over in the open, protected by covering. Its condition May 1 was 75, and on May 20 there was 90 per cent on hand. Average per cent of outside planting already done is as follows: asparagus, 0; bean, 25; beet, 90; Brussels sprout, 0; cabbage, 25; carrot, 10; cauliflower, 75; celery, 0; sweet corn, 5; cucumber, 5; dandelion, 0; eggplant, 0; endive, 0; leek, 0; mangel-wurzel, 0; muskmelon, 0; onion, 100; parsley, 100; parsnip, 100; pea, 95; pepper, 75; radish, 90; rhubarb, 0; spinach, 100; squash, 0; swiss chard, 100; tomato, 10; turnip, 25. Two severe freezes damaged all garden truck during second and third week in May.

JOHN DALRYMPLE, *Plainfield (Hampshire County)*. — Carrots kept poorly in storage, there being about 2 per cent on hand May 1. Unprotected parsley did not live over in the open. The amount of manure on hand April 1 was 75 per cent of normal. Per cent of average outside planting already done is as follows: bean, 10; beet, 1; cabbage, 0; carrot, 1; cauliflower, 0; celery, 0; sweet corn, 25; cucumber, 1; mangel-wurzel, 1; muskmelon, 1; parsnip, 2; pea, 50; radish, 95; squash, 2; tomato, 0; turnip, 1. From past experience we are satisfied that it does not pay to plant much before the last week in May or the first week in June.

W. H. CLOSSON, *Easthampton (Hampshire County)*. — Onions kept poorly, and on May 1 there was about 10 per cent on hand. Parsley lived over in the open without covering. Ninety represents the amount of manure on hand April 1. Per cent of outside planting already done is as follows: asparagus, 90; bean, 95; beet, 80; cabbage, 110; carrot, 80; sweet corn, 120; mangel-wurzel, 95; muskmelon, 0; onion, 80; parsnip, 90; pea, 120; radish, 100; rhubarb, 100; squash, 85; swiss chard, 95; tomato, 110; turnip, 50.

ARTHUR L. PEASE, *West Springfield (Hampden County)*. — Eighty per cent of onions kept in storage, and there was about 25 per cent on hand May 1. Seventy-five per cent of celery kept in storage and on February 1 sold for \$1 per dozen. Seventy-five per cent of carrots kept in storage, and on May 1 there was about 20 per cent on hand. Fifty per cent of spinach lived over in the open and was all sold by the 20th of May. Amount of manure on hand April 1 was about normal. Per cent of average outside planting already done on following crops: bean, 100; beet, 100; cabbage, 80;

celery, 100; sweet corn, 100; parsnip, 80; pea, 50; spinach, 90; squash, 100; tomato, 100.

JOHN L. DAVIS, *East Longmeadow (Hamplden County)*. — Although a little warm, onions kept well in storage, and were all sold May 1. Spinach, partly protected by covering, lived over in the open, and its condition May 1 was 100. The amount of manure on hand April 1 was 80 per cent. Per cent of average outside planting already done is as follows: asparagus, 75; bean, 100; beet, 100; cabbage, 75; carrot, 100; sweet corn, 120; cucumber, 100; eggplant, 100; muskmelon, 100; onion, 100; parsnip, 100; pea, 100; pepper, 100; radish, 100; rhubarb, 100; spinach, 100; swiss chard, 100; tomato, 100; turnip, 100.

C. W. LOOMIS, *North Dana (Worcester County)*. — Unprotected parsley lived over in the open, and its stand was 100. Spinach lived over in the open uncovered, and its condition May 1 was 90. On April 1 the amount of manure on hand was 95. Ninety per cent of asparagus has already been planted.

CORNELIUS LEAFLANG, *Leicester (Worcester County)*. — Celery and onions kept well in storage, and on May 1 there was about 20 per cent of onions on hand. Carrots also kept well, and there was about 10 per cent on hand May 1. Protected spinach lived over in the open, and its condition on May 1 was 80. Amount of manure on hand April 1 was about normal. Per cent of average outside planting already done is as follows: asparagus, 100; bean, 20; beet, 25; Brussels sprout, 100; cabbage, 20; carrot, 15; cauliflower, 100; celery, 40; cucumber, 20; dandelion, 40; leek, 100; mangel-wurzel, 100; muskmelon, 50; onion, 50; parsley, 100; parsnip, 100; radish, 50; spinach, 100; summer squash, 40; swiss chard, 100; tomato, 100; turnip, 20. Successive sowings of peas, carrots, cucumbers, beans, beets, radishes to be done yet.

A. N. SOMERS, *Westborough (Worcester County)*. — Unprotected parsley lived over in the open and its stand was 95. Amount of manure on hand April 1 was about normal. Average per cent of outside planting already done on the following crops is: bean, 5; beet, 10; cabbage, 10; carrot, 5; sweet corn, 5; onion, 10; parsnip, 10; pea, 75; pepper, 5; radish, 10; spinach, 50; squash, 10; tomato, 10. An increased acreage to be planted this year is indicated.

HOWARD W. FOSTER, *Tewksbury (Middlesex County)*. — Celery kept fair in storage, the last sale being made January 5 at \$1.25 per dozen. Carrots kept well in storage, and on May 1 there were none on hand. Parsley never lives over in the open in this section. Although unprotected, spinach lived over in the open, and its condition on May 1 was 90; on May 20 there was none on hand. As compared with normal, the amount of manure on hand April 1 was 200. The average per cent of outside planting already done on the following crops is: bean, 20; beet, 80; Brussels sprout, 0; celery, 0; sweet

corn, 50; cucumber, 100; dandelion, 0; eggplant, 0; endive, 90; leek, 100; muskmelon, 100; onion, 100; parsley, 100; parsnip, 100; pea, 100; pepper, 0; radish, 50; rhubarb, 0; spinach, 75; squash, 50; tomato, 50; turnip, 0.

ERNEST K. BALLARD, *Lexington (Middlesex County)*. — Uncovered spinach lived over in the open, and on May 1 its condition was normal. Per cent of average outside planting already done on the following crops is: beet, 80; cabbage, 30; carrot, 80; celery, 40; onion, 100; spinach, 20.

THE HITTINGER FRUIT COMPANY, *Belmont (Middlesex County)*. — Although unprotected, parsley lived over in the open, and its stand was 90. Uncovered spinach did not live over in the open. About 100 per cent of the outside planting has already been done on the following crops: asparagus, bean, cucumber, dandelion, onion, parsley, radish and tomato, and about 50 per cent of beets.

J. W. RUSSELL, Jr., *Winchester (Middlesex County)*. — Celery kept only fairly well in storage; carrots kept well, and on May 1 there was only a small amount on hand. Protected parsley lived over in the open and its stand was 80. Spinach lived over in the open and was protected by covering, its condition on May 1 being 70. On April 1 the amount of manure on hand was about normal. Per cent of outside planting already done on the following crops is: bean, 90; beet, 90; carrot, 90; celery, 10; sweet corn, 80; dandelion, 90; endive, 70; parsnip, 80; pea, 95; spinach, 75; tomato, 45. Corn and beans were injured by frosts in the low lands.

G. H. RUSSELL, *Medford (Middlesex County)*. — Onions kept exceedingly well in storage, and on May 1 about 90 per cent was on hand. Celery kept better than usual in storage, and the last sale brought \$2.50. Carrots kept very poorly. Parsley lived over in the open, being protected by covering, and its stand was normal. Covered spinach lived over in the open, and its condition on May 1 was 90. The amount of manure on hand April 1 was about normal. Per cent of average outside planting already done on following crops is: Brussels sprout, 0; cabbage, 35; carrot, 100; cauliflower, 0; celery, 50; sweet corn, 100; cucumber, 0; dandelion, 100; eggplant, 0; endive, 0; leek, 100; muskmelon, 0; onion, 100; parsley, 100; parsnip, 0; pea, 100; radish, 0; spinach, 100; squash, 0; swiss chard, 100; tomato, 100; turnip, 0. The season is late.

MARCUS M. BROWNE, *Marlborough (Middlesex County)*. — Celery kept only fairly well in storage. The last sale, at \$4 per dozen, was made on March 20. Protected parsley lived over in the open and its stand was 80. Protected spinach also lived over in the open and on May 1 its condition was 75. On April 1 the amount of manure on hand was 90. Per cent of average outside planting already done on the following crops is: asparagus, 150; bean, 100; beet, 100; Brussels sprout, 100; cabbage, 50; sweet corn, 100; pea, 200; spin-

ach, 110. There is an increased planting of peas and spinach, due to the canning factory contracts, and a large area of tomatoes and sweet corn is to go in next month for the same purpose. Interest in asparagus is also increasing yearly.

H. M. HOWARD, *West Newton (Middlesex County)*. — Fifty per cent of onions in storage went soft, and on May 1 there was about 2 per cent on hand. Celery kept very well in storage and the last sale on January 10 brought \$2 per dozen. Unprotected parsley kept well in the open and its stand was 60. Uncovered spinach did not live over in the open. The amount of manure on hand April 1 was 110. Per cent of average outside planting already done on the following crops is: bean, 50; beet, 50-60; carrot, 75; sweet corn, 75; parsley, 100; parsnip, 75; radish, 25; spinach, 75. The season started early on rhubarb, spinach and dandelions, but has been holding back since May 10. Crops have started off well. Twenty-five per cent of strawberry crop was killed by frost.

W. E. HASKILL, *Merrimacport (Essex County)*. — Onions kept fairly well in storage and 2 per cent was on hand May 1. Celery kept well, and on date of last sale, January 15, sold for \$2 per dozen. Carrots kept poorly, and on May 1 there was 5 per cent on hand. On April 1 the amount of manure on hand was about normal. Per cent of average outside planting already done on the following crops, is: bean, 75; beet, 50; cabbage, 35; carrot, 100; cauliflower, 100; celery, 100; sweet corn, 75; cucumber, 50; dandelion, 100; egg-plant, 50; leek, 100; mangel-wurzel, 100; muskmelon, 75; onion, 100; parsley, 100; parsnip, 100; pea, 75; pepper, 0; radish, 75; rhubarb, 100; spinach, 50; squash, 35; tomato, 50; turnip, 10.

P. BROOKS BAGLEY, *Peabody (Essex County)*. — Onions kept only fairly well in storage; 25 per cent on hand May 1. Carrots kept very poorly, and on May 1 there was 10 per cent on hand. Per cent of average outside planting already done on the following crops is: bean, 50; beet, 20; cabbage, 50; carrot, 25; onion, 90; pea, 90; tomato, 25.

J. L. TUTT, *Marblehead (Essex County)*. — Onions kept well in storage, as also did carrots, and on May 1 there were none on hand. Parsley was not protected, and did not live over in the open. Unprotected spinach lived over in the open, but was infected with blight. On April 1 the amount of manure on hand was 75 per cent. Per cent of average outside planting already done on the following crops is: bean, 25; beet, 50; cabbage, 50; carrot, 50; celery, 25; cucumber, 0; leek, 100; onion, 100; parsley, 100; parsnip, 100; pea, 100; spinach, 100; squash, 25; tomato, 10; turnip, 50. June 1 the bulk of the planting will have been done.

WILLIAM P. NICKERSON, *Norwood (Norfolk County)*. — Onions kept well in storage, and on May 1 there were none on hand; celery kept fairly well, and carrots well. On May 1 about 5 per cent of

carrots was on hand. Partially covered parsley lived over in the open and its stand was 85. Spinach, partly protected, lived over in the open, and its condition on May 1 was 90, with 10 per cent on hand May 20. The amount of manure on hand April 1 was 75 compared with normal. Per cent of average outside planting already done is as indicated on the following crops: asparagus, 100; bean, 50; beet, 75; brussels sprout, 0; cabbage, 50; carrot, 90; cauliflower, 50; celery, 50; sweet corn, 75; cucumber, 100; dandelion, 0; eggplant, 0; endive, 0; leek, 0; mangel-wurzel, 50; muskmelon, 100; onion, 100; parsley, 0; parsnip, 100; pea, 100; pepper, 25; radish, 50; rhubarb, 100; spinach, 75; squash, 75; swiss chard, 0; tomato, 25; turnip, 10.

GEORGE A. ARNOLD, *Braintree (Norfolk County)*.—Onions kept poorly in storage; 5 per cent on hand May 1. Condition of celery in storage was below average; last sale, February 7; sold for \$2.50 per dozen. Carrots kept as well as average; 10 per cent on hand May 1. Although unprotected, parsley lived over in the open, as also did spinach, the condition of which was 40 on May 1. The amount of manure on hand April 1 was about normal. Per cent of average planting already done on the following crops is: bean, 75; beet, 60; cabbage, 50; carrot, 100; celery, 75; dandelion, 50; eggplant, 100; leek, 100; onion, 75; parsley, 50; pea, 100; pepper, 100; rhubarb, 100; spinach, 75; squash, 75; tomato, 75.

DAVID S. PECK, *Seekonk (Bristol County)*.—Celery kept well in storage and on February 10 the last sale brought \$1.25 per dozen. Carrots kept perfectly in storage, and on May 1 there were none on hand. Uncovered parsley lived over in the open and its stand was 75. Unprotected spinach also lived over in the open, and its condition May 1 was average. Amount of manure on hand May 1 was 110 per cent. Per cent of average outside planting already done on the following crops is: asparagus, 100; bean, 50; beet, 60; cabbage, 70; carrot, 55; cauliflower, 90; celery, 100; sweet corn, 50; cucumber, 35; dandelion, 50; eggplant, 50; endive, 55; leek, 80; onion, 100; parsley, 100; parsnip, 100; pea, 85; pepper, 100; radish, 70; rhubarb, 100; spinach, 50; squash, 10; tomato, 60; turnip, 25.

MELVIN O. BRADFORD, *Acushnet (Bristol County)*.—Onions kept very poorly in storage; carrots kept well; 5 per cent on hand May 1; spinach lived over in the open, a small amount not being covered, and its condition was 95 on May 1, with 30 per cent on hand May 20. On April 1 the amount of manure on hand was 90. Per cent of average outside planting already done on the following crops is: bean, 70; beet, 85; early cabbage, 95; early carrot, 90; sweet corn, 30; cucumber, 75; mangel-wurzel, 20; muskmelon, 75; parsnip, 95; pea, 100; radish, 95; squash, 75; tomato, 10. Planting fairly well along, but seeds are coming poorly on account of cold, dry weather. Beans and corn planted three weeks just showing.

Peas look well; cabbage fair; radish and rhubarb fully up to average, but asparagus held back by cold, dry weather.

N. A. HOWES, *Dennis (Barnstable County)*. — Carrots kept fairly well in storage; none on hand May 1. Parsley lived over in the open, although not protected by covering. The amount of manure on hand April 1 was normal. Per cent of average outside planting already done on the following crops is: beet, 50; carrot, 100; sweet corn, 80; mangel-wurzel, 100; onion, 100; parsley, 100; pepper, 50.

SUMMARY OF CRANBERRY CROP CONDITIONS.

One of the most marked instances of agricultural specialization is the cranberry industry on Cape Cod and adjacent territory. In very few instances does the general farmer make a great success in the growing of this crop, and those who to-day are realizing the best profits on cranberry bogs are those who have made a study of the industry from all sides, and who, by practical experience, have demonstrated the value of the methods employed.

Massachusetts ranks second of all the States of the Union devoted to this crop, with 6,577 acres, New Jersey alone exceeding the Bay State, with 9,030 acres. The quality of the Cape Cod cranberry is unsurpassed, and the fame of this tart appetizer has spread far beyond the confines of the State in which it is produced.

The intention is to make these special reports of the utmost value to this industry. This month we have but made a start; we hope to improve upon this start as time progresses, and any suggestions or constructive criticism from our correspondents or our readers will be greatly appreciated, and acted upon if possible and practicable.

The list of questions printed below was sent to growers throughout the cranberry district, replies being returnable not later than May 28:—

1. Did most of the cranberry growers in your locality hold their winter flowage or did they take it off early? (Give approximate date.)
2. How did the bogs in your vicinity come through the winter; was there much winterkilling?
3. Does there seem to be as much water this spring as usual in connection with the water supplies for reflowing bogs in your section?
4. Are the bogs in your locality well budded for a crop?

5. Does the new growth appear to be well advanced for this time of year?

6. (a) Has there been any frost injury to bogs in your locality so far this season? (b) Give lowest bog temperatures since water was drawn off, and the dates they occurred.

7. (a) Are any of the cranberry insect pests as yet doing serious injury in your section? (b) If so, what insect or insects are causing the trouble? (c) About how much damage has been done so far?

8. Is much spraying for either insects or fungous diseases being done by the cranberry growers in your locality this spring? If so, for what?

9. Are the growers in your section fertilizing or preparing to fertilize their bogs to any considerable extent this season?

10. Is much new bog being built in your town this spring? Give estimate of area, if possible.

Returns were received from but 33 of the letters sent out, and from these the following summary of crop conditions has been compiled:—

FLOWAGE — DRAWING OFF.

In reply to the question as to the drawing off of water from the bogs there was quite a range of dates given, running from April 1 in some instances up to June 1 in others. The most frequently recurring average date given, however, was April 28. Many growers since drawing off the water have reflowed, and the indication was, at time of reporting, that the final drawing off in some cases would not be done until about June 1.

WINTERKILLING.

The great majority of the returns indicate that there was very little winterkilling, some reporting that bogs wintered better than for several years. Some evidence comes of damage done in Dennis, Harwich and Falmouth, however, but this was mostly upon bogs which were not flowed, and occurred during the month of February. Instances of damage were most noticeable on bogs located along the shore.

WATER SUPPLY.

From the returns received we conclude that the reserve water supply this year was larger than usual, although some few report a smaller amount. One correspondent reports that the ground-water level is now twelve inches higher than at this time in 1912. The majority of bogs which are located in close proximity to ponds or other permanent water supply are equipped with pumping plants or engines, whereby, at indication of frost or worm damage, the bogs can be immediately covered with water until the danger is past. The value of this method of crop insurance cannot be too highly estimated, as has been demonstrated in actual practice in the results attained where growers were provided with such facilities.

- FRUIT BUD.

In reply to the question as to whether or not the bogs were well budded for a crop, the great majority reported an excellent prospect. Only 2 correspondents gave a negative answer, and several made such statements as, "finest bud in years," and "as much as I ever saw." One or two reports called attention to the fact that it was somewhat early to estimate the bloom, but the preponderance of the evidence points to the best crop for several years, barring serious loss from frost, worms or fungous diseases. The season has but just begun, however, and it is difficult to tell what is in store.

NEW GROWTH.

From the returns received it is difficult to draw a definite conclusion as to the development in new growth of the vines at the time of reporting. This phase is largely dependent upon the time the flowage was drawn off, and the variation in this date in different sections caused a corresponding variation in the replies received. Replies range from "fully normal" to "two weeks late," but the season as a whole seems to have been fairly favorable for new growth up to the time of reporting.

FROST DAMAGE. LOWEST TEMPERATURES.

The frost damage this spring has been exceedingly slight, owing not so much to lack of cool weather as to accompanying weather conditions which prevented frosts. On the majority of nights when the thermometer has dropped to or below the freezing point it has either been cloudy or foggy, or there has been sufficient wind to prevent a frost. To these causes may be attributed the slight losses, which would otherwise have been much more severe. The following is a list of the lowest bog temperatures in the various towns since water was drawn off, and the dates it occurred, and also other low temperatures which have occurred since that time: Middleborough, 22°, date not known; Plymouth, 28° May 8 and 20, also 29°; Rochester, 26° May 20, also 28°, 30° and 32°; Carver, 12° April 21, 15° April 18, and 18° May 1, also 20°, 21° and 24°; Marion, 22° May 11 and 13; Freetown, 30° May 15; Wareham, 21° April 30 and May 17, also 22°, 25°, 26° and 28°; Bourne, a peculiar circumstance was reported: on the night of May 22 the temperature dropped to 21° by 11 o'clock, but at midnight it was up to 30°; Falmouth, 19° April 18, also 20°, 22°, 24° and 32°; Barnstable, 28° May 10 to 15; Dennis, no low temperature reported; Harwich, 26° April 9, also 28°; Nantucket, 29° May 12. At the time of making the report the danger of frost damage was nearly past, and it is very gratifying that the crop has fared so well in this regard.

INSECT PESTS.

It is evident that very little damage is being done by insects so far this spring. The reports on this question, however, indicate that it is a trifle early to state definitely in this regard, and future reports may show different conditions. Indications are for an "insect year," but the cool weather of May has been instrumental in checking their activity. What damage was reported was done to a large extent by the black-headed cranberry worm. The damage was but slight, as the worms had been hatching but a few days before the re-

ports were made and were just beginning to feed. It was reported that the "Jersey worm millers" were beginning to appear.

SPRAYING.

The replies to the question in regard to spraying indicate that the value of this practice is not yet realized by the majority of growers. While a few report that more than usual will be done in their locality, the larger number either reply in the negative or that it is too early. Most of the spraying which is done evidently is for the cranberry worm, although a few growers report that Bordeaux will be applied for fungous diseases. Experience is the best teacher, and it is hoped, as the results of spraying are seen, that other growers may adopt the practice.

FERTILIZATION.

From some towns come reports that the use of fertilizer on cranberry bogs is increasing, but in the majority of instances the reports show that not much fertilizing is done. Some state that "sand is the only fertilizer used," while others state that fertilizer is used "on new bogs only." Others use it only where the vines are poor. Those who are using fertilizers in a general way, however, have found that their profits were thereby increased, and it would seem that a more widespread use of fertilizers would be to the benefit of the cranberry growers. Growers in many sections are experimenting, however, and the result will doubtless be a more general use of fertilizers.

NEW BOG.

There does not seem to be as much activity in the putting in of new bog as there was a few years ago. This is probably partially due to the fact that much of the available swamp land has already been taken up, and to the more or less violent reaction which always follows a boom in any industry. A rough estimate of the acreage of new bog being built this year is as follows: Hanson, 25 acres; Middleborough, practically none; Plymouth, 20 to 25 acres; Rochester, 30 acres; Carver, not over 50 acres; Marion, 20 acres; Freetown, 75 to 100 acres; Wareham, 20 to 50 acres; Bourne, 2 acres being re-

built; Falmouth, 2 acres; Barnstable, 4 acres; Dennis, not enough to estimate; Harwich, 10 acres; Nantucket, 20 acres. This makes a total in the towns from which reports were received of about 336 acres, roughly estimated. This by no means represents an estimate for the State, as no reports were received from many towns in which cranberries are quite extensively grown.

NOTES OF CRANBERRY CROP CORRESPONDENTS.

R. A. EVERSON, *South Hanson (Plymouth County)*.—Water drawn off April 1 to May 1. Bogs came through finely, with very little winterkilling. Average amount of water for reflowing bogs; bogs are well budded for a crop, and the new growth appears to be well advanced for this time of year. Thus far there has been no frost injury to bogs. Insect pests have not yet done any serious injury. It is a little early for spraying for insects or fungous diseases, and not much is being done. Fertilizing is not being done by the growers in this section. About 25 acres of new bog built this spring. Bogs are looking fine for a large crop at present date.

HENRY J. THAYER, *Plymouth (Plymouth County)*.—Water drawn off April 10 to 15, with few exceptions, when it was taken off as late as May 15. Bogs wintered best in several years; winterkilling generally very slight. More water than last spring; ground water level 12 inches higher than in 1912. New growth about normal. Frost injury to bogs has been very slight. Lowest bog temperatures since drawing off of water: sharp frosts, ice made, May 8, 28°; May 9, 29°; May 20, 28°. No serious damage has yet been done by insect pests. Black-head fireworms first showed May 25; damage cannot be estimated for week or more. Some spraying is done for black and yellow head fireworms. I am about the only one, in my section, spraying for fungus. Few growers use fertilizers, and these believe them to be a success. Possibly about 20 acres new bog built this spring. Although season has only begun, present indications are best in several years.

HENRY S. GRIFFITH, *South Carver (Plymouth County)*.—Most growers drew off water April 1; few held to middle of May. Bogs came through winter in good shape; very little winterkilling. Usual amount of water for re-flowing bogs. Bogs well budded for crop; new growth rather backward. Probably very little injury to bogs by frost. Lowest bog temperatures: May 12, 20°; May 15, 21°. Many bogs were flooded, but the absence of dew and the prevailing northerly winds prevented damage. Too early yet for serious injury by insect pests, but Jersey worm millers are appearing. More

spraying than usual is being done for fungous diseases. Growers are not using fertilizers. About 25 acres of new bog built. Rather early to estimate insect prospects, but indications point to an insect year. Tent caterpillars never were more numerous, and cutworms are said to be unusually prevalent.

T. T. VAUGHAN, *Carver (Plymouth County)*.—Water drawn off all the way from April 1 to present time; some being held yet. No winterkilling. With rains of last week there is about an average amount of water for re-flowing. Bogs are well budded for a crop; new growth not well advanced, most bogs being late. No injury by frost to amount to anything. It is too early to notice injury by insect pests, and is also early for spraying. Growers are not using fertilizers except in new bogs. Not as much new bog built this spring as usual; 40 to 50 acres in the town.

FRANK N. CHURCHILL, *Middleborough (Plymouth County)*.—Growers held winter flowage later than usual, drawing water off from May 15 to 25. Bogs came through the winter well, and there was no winterkilling. Good supply of water for re-flowing. Bogs are well budded for crop; new growth late. No noticeable injury from frost. Bog temperatures have been as low as 22°; some bogs had not been drawn off, others were covered. Insect pests are not yet doing damage and spraying is not being practiced. Growers are not using fertilizers. No new bogs have been built this spring.

GEORGE B. ALLEN, *Rochester (Plymouth County)*.—Water drawn off about April 1. No winterkilling. The supply of water for re-flowing is about normal. Bogs are well budded, and the new growth appears to be well advanced. No injury by frost. Lowest bog temperatures: May 8, 28°; May 12, 28°; May 19, 30°; May 20, 26°; May 27, 32°. Black-head fireworms are in evidence. Spraying will be done with Bordeaux and lead. Some fertilizing will be done where vines appear to need it. To my knowledge about 30 acres of new bog have been built.

B. F. VOSE & SON, *Marion (Plymouth County)*.—Most growers drew off water about middle of April. No winterkilling. Less water for re-flowing this spring than usual. Bogs are not generally well budded for crop. New growth appears to be well advanced. No frost damage. As yet there has been no injury by insect pests, and spraying is not being practiced. Lowest bog temperatures: May 11, 13°–22°. Growers are not using fertilizers to any great extent. About 20 acres of new bog have been built this spring. Expect to have considerable trouble with fruit worms later.

NATHANIEL P. SOWLE, *Freetown (Bristol County)*.—Growers held water late, about May 15; several bogs still under water. Have not heard of any winterkilling, but a few dry bogs may have been slightly damaged. More than usual amount of water for re-flowing. Bogs are well budded for crop. New growth not far advanced. No

known damage by frosts. Lowest temperatures: about 30° above zero, middle of May, and 35° to 45° above zero during May. Insect pests are doing no injury yet, nor is spraying being practiced. Do not hear of any growers using fertilizers. Considerable new bog built, — 75 to 100 acres.

L. C. HALL, *Wareham (Plymouth County)*. — Where water was plenty it was drawn off about the 10th of April, and bogs were re-flowed if there were signs of frosts or worms. Very little, if any, winterkilling. About a normal supply of water for re-flowing. There has undoubtedly been some frost damage. Lowest temperatures: 21° in coldest places, May 12; ranged from 22° to 32° another night same week. The black-head worms are just beginning to eat the crops. Considerable spraying is done, principally for black-heads. Some growers use fertilizers, lime, etc., according to needs. Probably about 50 acres new bog built.

JAMES H. HENNESSY, *Wareham (Plymouth County)*. — Growers were late drawing off water, most of them doing so between the 1st and 15th of May. Little or no winterkilling. Water supply for re-flowing below average. Bogs are well budded; new growth not well advanced. Have heard of but one bog where there was frost damage. Lowest bog temperatures: May 12, 25°; May 13, 28°; May 15, 22°; May 21, 28°. Too early yet to notice injury by insect pests. It being early, very little spraying is being done. Growers are using sand as a fertilizer almost wholly. Not more than 20 acres of new bog have been built.

J. C. MAKEPEACE, *Wareham (Plymouth County)*. — Water was generally drawn off by middle of April. Very little winterkilling. Usual amount of water for re-flowing. Bogs are generally well budded for crop. New growth appears to be a little backward. Frost injury has been very slight, if any. Lowest bog temperatures: May 14, 24°. Fire worms and army worms are hatching, but there is very little damage yet. Spraying for worms is just being commenced. Growers are fertilizing as usual. About 25 acres of new bog have been built.

W. E. R. NYE, *Sagamore, Bourne (Barnstable County)*. — About 70 per cent of growers drew off water April 1, 30 per cent June 1. Bogs came through the winter well, and there was very little winterkilling. Seems to be usual amount of water for re-flowing. Bogs are well budded. New growth appears to be backward. No apparent frost injury to bogs. Lowest bog temperatures: May 22, 11.30 P.M., 21°; midnight, 30°. At present insect pests are doing no damage. Growers are using nothing but sand as fertilizers. No new bogs have been built this spring.

H. R. MASON, *Falmouth (Barnstable County)*. — Most growers held their winter flowage until May 15–20. Bogs wintered well; winterkilling negligible. More water than usual for re-flowing.

Bogs are budded well, and new growth appears to be well advanced. There has been no damage by frost, nor has there been any insect injury to the bogs. As yet not much spraying is being done; when commenced it will be for first brood of black-head worms. Not much preparation being done for fertilizing. No new bog has been built this spring. The season appears to be a week earlier than normal.

WILLIAM F. MAKEPEACE, *West Barnstable (Barnstable County)*. — About three-fourths of the growers drew off water between April 1 and 10, and the balance mostly from May 20 to June 1. About average amount of winterkilling. Usual amount of water for re-flowing. Bogs are apparently well budded. New growth appears to be rather backward. There probably was a slight injury to some bogs by frost. Lowest bog temperatures: May 10 to 15, 28°. Insect pests are not yet doing serious injury. Some spraying for fireworms will be started at once. Fertilizers are being used to no great extent. Only about $\frac{1}{4}$ acres of new bog have been built. Frosts may be expected up to mid-June. Weather has averaged too cool for the usual insects to develop thus far.

DAVID SHIVERICK, *Dennis (Barnstable County)*. — Most growers drew off the water about the 20th of May or later. Some will hold until June. The bogs that were not flooded were badly winterkilled, those along the shore being most seriously damaged. There is not the usual amount of water for re-flowing. Bogs are budded well for a crop, and the new growth appears to be well advanced. No apparent frost injury. Insect pests have, up to this time, done no serious damage, and fireworms are not so numerous as usual. Some spraying is being practiced for the fireworm. There will be an increased use of fertilizers. Not enough new bogs have been built to estimate the area.

GERARD CHAPMAN, *Dennis (Barnstable County)*. — The majority of growers will hold the winter flowage until June 1. On bogs that had no winter flowage there was more winterkilling than for four years past. There appears to be less water than usual for re-flowing. Bogs are fairly well budded, and new growth appears to be advanced about as usual. There has been no damage by frost. As yet insect pests have done no serious injury, although the black-head vine worm is in evidence, for which some spraying is being done. Quite a few growers are using nitrate of soda as a fertilizer.

R. H. CAHOON, *Pleasant Lake (Barnstable County)*. — Most of the growers held the water until May 15. The damage by winterkilling was greater than usual. The late rains helped to make the supply of water for re-flowing about average. The bogs are well budded for a crop, and the new growth appears to be very well advanced. There has been no apparent damage by frost. Lowest bog temperatures: May 11, 40°; May 8, 36°. The common vine worms are doing some damage. No spraying is being practiced. As yet growers are

not using fertilizers, but later small amounts will be used. Not more than 10 acres of new bog have been planted. The outlook is very good for a fair crop if no frosts or droughts occur. However, growers fear late frosts, but are prepared to cover their bogs.

EMULOUS SMALL, *Harwichport (Barnstable County)*.— One-half of the growers let the water off from the 1st to the 10th of April, and the balance about May 25. Winterkilling was very slight. Seems to be about the usual amount of water for re-flowing. The bogs which were out of water early are well budded. New growth appears to be very backward. No apparent damage by frost. Lowest bog temperatures: April 8, 28°; April 9, 26°; April 10, 28°. To my knowledge no spraying is being done, and thus far there has been no insect pest damage. Very little new bog is being built.

N. A. ELDRIDGE, *Chatham (Barnstable County)*.— Most growers held water until about May 20. Bogs came through the winter in good shape, with very little winterkill. There is about the average amount of water for re-flowing. Bogs are budded as much as ever; new growth well advanced. There was no apparent injury by frost, and the lowest bog temperature was about 42. As yet insect pests have done no injury. Some spraying with arsenate of lead and Bordeaux mixture has been done. Growers are not preparing to fertilize to any extent. Very little new bog being built.

ELNATHAN P. ELDRIDGE, *South Orleans (Barnstable County)*.— Water drawn off April 15 by most growers. Bogs came through winter well. Less than usual amount of water for re-flowing. Bogs are not well budded, and new growth is not far advanced. Insect pests are doing some damage, but it is too early to estimate the extent. Some spraying is being done for fireworms.

JOHN E. HOWLAND, *Tisbury (Dukes County)*.— First off-take of water April 20; last water drawn off May 20. No winterkilling. Less than average amount of water for re-flowing because of lack of rain for past month. Prospects for full crop are good. New growth appears to have advanced as well as usual. No injury by frost. No noticeable injury by insect pests. Spraying on new set vines is being practiced to a small extent. The cranberry girdler is somewhat in evidence.

FRED B. MAGLATHLIN, *Nantucket (Nantucket County)*.— Most growers drew off water between April 5 and 15. Bogs came out very nicely through the winter. Because of lack of rain, water supplies are low compared to last year. Bogs are well budded and new growth well advanced. Very little damage by frost. Lowest bog temperature: about May 12, 29°. It is early yet to have noticed any damage by insect pests. A little spraying is being done for fireworms. Growers are not using fertilizers. About 20 acres of new bog have been built.

THE CROP REPORT AND ITS CORRESPONDENTS.

The first issue of the Crop Report was that for the month of June, 1888, twenty-five years ago. It was a small pamphlet of 14 pages, and has since been increased so that the last issue, that for October, 1912, consisted of 60 pages and an edition of 8,000 copies. In 1889 it was decided to issue a report for the month of May, and this has been continued up to date. The publication of the report for the past quarter-century has been made possible only by the faithful service of the corps of correspondents who have voluntarily given of their time, knowledge and observation during all these years.

There are nineteen persons, who, with the October, 1912, issue of the Crop Report, finished twenty-five years' service of correspondence for the Board. The especial appreciation and gratitude of the Board is here extended to those who have thus rendered continuous and efficient service for the past quarter-century.

It is greatly to be regretted that during the past winter four of these correspondents have passed away. Our sympathy is herewith extended to the families of each, and to the communities which suffer this loss.

Among those who have served for the full period are the following: —

DANIEL BALLARD, New Salem (Millington), Franklin County. — Mr. Ballard, who is now seventy-three years of age, has acted as crop correspondent since the report was started. He was president of the New Salem Farmers' Club several years ago, and also is a member and chaplain of the local grange. His activities have been dairying and fruit growing, and poultry growing in a small way. He calls especial attention to the improvement in knowledge and practice in the care and management of poultry, the dairy and the orchard.

ALVAN BARRUS, Goshen, Hampshire County. — Not heard from.

WESLEY B. BARTON, Dalton, Berkshire County. — H. A. Barton,

Jr., took up the work of crop correspondent for this town in 1888. Upon his death in 1890, his son, Wesley B. Barton, took up the work and has carried it on up to the present time. He is now a man forty-seven years of age. He has held several prominent offices in connection with agricultural organizations, among which are the following: president, Berkshire Agricultural Society three years; president, Highland Agricultural Society two years; master, Berkshire County Pomona Grange two years; steward, State grange four years, and deputy six years; master, Dalton Grange three years. His larger interests are fruit growing and poultry. In 1880 he helped to build a silo on his farm and has used it for the past thirty-two years.

HENRY M. BLISS, Wilbraham, Hampden County. — Mr. Bliss is now eighty years of age. For over thirty years he has been the secretary of the Wilbraham Farmers' Club, during which time nearly all of his associates of earlier years have passed away. For many years he has been statistical correspondent for the United States government. His farming interests were largely fruit growing and poultry.

ENOS W. BOISE, Blandford, Hampden County. — Mr. Boise, now seventy-two years of age, was a member of the Board of Agriculture in 1868. So far as we are aware there is no one now living who was a member of the Board previous to that time. He is now secretary of the Union Agricultural and Horticultural Society, and a member of the New England Agricultural Society and the Ayrshire Breeders' Association. His interests are along general farming lines.

WILLIS W. BURNETT, Savoy, Berkshire County. — Died Feb. 13, 1913.

JOSHUA CROWELL, East Dennis, Barnstable County. — Mr. Crowell took up the duties of crop correspondent at the age of forty-four years, having now reached the age of sixty-nine. For several years he was a member of the executive committee of the Barnstable County Agricultural Society. He is also a member of the grange, and is interested in general farming and cranberry growing.

LUCIEN GOVE, Templeton, Worcester County. — Mr. Gove, now a man seventy-five years of age, has been an active member of the grange for twenty-seven years. During that time he has held the offices of master, lecturer, secretary and treasurer in the local granges of Templeton and Phillipston, and in the Worcester West Pomona Grange. He has been remarkably faithful in his service as correspondent, not missing a single report in twenty-five years. He is interested in market-gardening, fruit growing and poultry raising.

H. F. HAYNES, Bolton, Worcester County. — Died Nov. 26, 1912.

CARRIE A. HAYWARD, Halifax, Plymouth County. — Mr. George W. Hayward was one of the pioneer reporters, and during his term of service was a very faithful correspondent. Upon his death in 1907

his wife, Carrie A. Hayward, took up the duties, and she has the unique distinction of being the only woman crop correspondent of the Board. She is a member of the Halifax Grange and of Mayflower Pomona Grange, and has been secretary of the Halifax Farmers' Club for sixteen years. She is actively engaged in fruit growing, dairying and poultry raising.

S. A. HICKOX, Williamstown, Berkshire County. — Mr. Hickox is another former member of the Board, having served three years as a representative of the Hoosac Valley Society. He has been president and first and second vice-president, and a member of the executive committee of that society, and held office in the Old Berkshire Agricultural Society of Pittsfield and Great Barrington. He represented his district in the lower branch of the Legislature, and while in the Senate in 1892-93 was chairman of the committee on agriculture. He was also a member and was master of Green River Grange for ten years. He has been very active in institute work and has addressed many audiences in the several New England States. Dairying and poultry keeping were his chief interests in active agriculture.

JOHN N. ISHAM, Ludlow, Hampden County. — Died Dec. 14, 1912.

WILLIS E. KNIGHT, Gardner, Worcester County. — Mr. Knight, who has been a member of Gardner Grange for twenty-seven years, has been one of our correspondents for the whole period since the Crop Report was first issued. He is now fifty-six years of age. Dairying, fruit growing and market-gardening are his chief interests.

C. B. LYMAN, Southampton, Hampshire County. — Died during the past winter.

H. C. RUSSELL, North Hadley, Hampshire County. — Mr. Russell, a man sixty-eight years old, has been a correspondent since the report was first issued, in 1888. He is a member of the Hampshire, Franklin and Hampden Agricultural College and has done general farming with tobacco as the predominating crop.

ARTHUR B. SAVARY, Wareham, Plymouth County. — While this town cannot strictly be considered as an agricultural section, still there is more or less general farming done. Adolphus Savary was one of the original contributors to the report. He passed away in 1894, however, and his son, Mr. Arthur B. Savary, took up the work the following year. Although Mr. Savary is a general farmer, the principal crop in that locality is the cranberry crop. Mr. Savary is a man forty-one years of age.

HENRY S. SAWYER, Sterling, Worcester County. — For twenty-five years Mr. Sawyer has served Massachusetts agriculture in the capacity of crop correspondent. A man now sixty-nine years of age, he has been secretary of the Sterling Farmers' Club, secretary of Sterling Grange seventeen years, master of that organization, a member of the Worcester East Agricultural Society and of Lancaster Lodge, I. O. O. F. Fruit growing, market-gardening and poultry

raising are the phases of agriculture to which he has devoted his energies.

WILLIAM H. SNOW, Becket, Berkshire County. — Mr. Snow, now seventy-two years old, was formerly a member of the Board of Agriculture for three years, representing the Highland Agricultural Society of which he has been president for two years, and also has held office as vice-president and as one of the directors. He was elected master of Becket Grange about 1874 and is treasurer at the present time; he was also made a master Mason in 1874. His interests are dairying, fruit growing and poultry raising.

RUFUS A. THAYER, Randolph, Plymouth County. — Not heard from.

The remaining correspondents who have served the agriculture of the Commonwealth in the capacity of crop reporters are classified in the following groups according to the number of years' service, the numbers in the center of the page indicating the length of service of the different groups.

Only those who served up to October, 1912, are included in this list. Had time and space permitted the names of all those who have rendered such service, if only for a short time, would have been printed.

Had space permitted, the names of all those who have signified their willingness to act as correspondents in the future, either general or special, would have been added to this list.

24.

CYRUS M. ALLEN, Franklin, Norfolk County. — Age, eighty-two years. Offices held: president and secretary, Franklin Farmers' Club; member for six years of Massachusetts Cattle Owners' Association, also director of that association; lecturer, Franklin Grange for several years. Farming interests, fruit-growing, dairying and poultry raising.

F. G. ARNOLD, Touisset, Bristol County. — Age, fifty-four years. Secretary, Swansea Mill Producers' Association. Interested in general farming, with dairying as a specialty.

HORATIO BISBEE, Bisbees (Chesterfield), Hampshire County. — Age, seventy-nine years. Helped locate the grounds of the Hillside Agricultural Society in Cummington in 1884; member of the building committee of that society, and its vice-president for many years; also a member of the Hampshire, Franklin and Hampden Agricultural Society. Interested in general farming, with dairying as a specialty.

DAVIS COPELAND, Campello, Plymouth County.— Age, seventy-eight years. President, West Bridgewater Farmers' Club; trustee of Plymouth County Agricultural Society; master and overseer of West Bridgewater Grange; member of Plymouth Agricultural Society, Brockton Agricultural Society, West Bridgewater Grange (charter member), Old Colony Pomona and Bay State Agricultural society. Interested in general farming, with fruit growing, dairying and market-gardening as his chief interests.

R. H. CUSHMAN, Bernardston, Franklin County.— No information received for publication.

H. A. FORD, Dalton, Berkshire County.— Age, forty-eight years. President, Highland Agricultural Society in 1913; president, Hillside Agricultural Society for two years, also vice-president of Hillside Agricultural Society for many years; and master, Windsor Grange for one year. Interested in general farming, with dairying and poultry raising as specialties.

PETER HOLT, North Andover, Essex County.— Not heard from.

HENRY H. KINGSBURY, Leicester, Worcester County.— Age, seventy-six years. Member, Spencer Grange twenty-five years; master, overseer and lecturer of said grange ten years in all; member, board of assessors, town of Leicester, for several years, and at present a member of the park commission of that town.

L. J. NORTHUP, Cheshire, Berkshire County.— Age, seventy-three years. Member, State Board of Agriculture for three years; member of crop-viewing committee and committee on division at Hoosac Valley Fair for a number of years. Notes a marked improvement in general farming in the vicinity of Cheshire.

DANIEL R. WICKS, West Falmouth, Barnstable County.— Age, seventy-seven years. Has acted as judge of fruit and vegetables on several occasions for the Barnstable County Fair Association. Interested in fruit growing and market-gardening.

23.

GEORGE WM. ADAMS, Rowley, Essex County.— Age, fifty-eight years. Secretary, Byfield Farmers' Club for eight or ten years; member, Massachusetts Society of Beekeepers and Essex County Agricultural Society. Bee culture a specialty.

CHARLES B. BENNETT, Ludlow, Hampden County.— Age, fifty-nine years. President and secretary of Harvest Club; master, lecturer and overseer of subordinate and Pomona granges; member, Brigham Lodge of Masons and Hampden County Agricultural Betterment Society. Interested in fruit growing, market-gardening and poultry raising.

D. O. CHICKERING, Enfield, Hampshire County.— Age, sixty years. Graduate of Massachusetts Agricultural College and Boston University. Has acted as correspondent for the New England Home-

stead for many years. Interested in general farming, with fruit growing as a specialty.

Dr. JABEZ FISHER, Fitchburg, Worcester County. — Age, eighty-nine years. Member of Board of Agriculture for six years; secretary and president, Worcester North Agricultural Society. Interested in fruit growing. Has been referred to as "the Tolstoi of New England."

WILLIAM H. HUNT, Concord, Middlesex County. — Age, seventy-three years. Secretary of Middlesex Agricultural Society for many years; member of Massachusetts Horticultural Society. Interested in general farming, with fruit growing as a specialty.

HERBERT R. KINNEY, Worcester, Worcester County. — Age, fifty-three years. President, Tatnuck Farmers' Club; vice-president, Worcester County Horticultural Society; secretary and treasurer, Worcester County Market Gardeners' Association; member of Massachusetts Horticultural Society, Bay State Agricultural Society, Worcester County Horticultural Society, Worcester Agricultural Society and Tatnuck Farmers' Club. Interested in fruit growing, market-gardening and poultry raising.

BAXTER P. PIKE, Topsfield, Essex County. — Age, sixty-eight years. Trustee, Essex Agricultural Society and master of Topsfield Grange. Interested in general farming, specializing in dairying, and being the first farmer to sell milk in Topsfield.

T. A. ROGERS, West Springfield, Hampden County. — Age, seventy-six years. Director, Old Hampden Agricultural Society; member, Hampden Harvest Club for thirty-eight years. Interested in general farming, specializing in fruit growing and dairying.

CHARLES D. SAGE, New Braintree, Worcester County. — Age, sixty-four years. Past master, New Braintree Grange; lecturer, Quaboag Pomona Grange; secretary, New Braintree Farmers' Club; vice-president, Spencer Farmers' and Mechanics' Association; vice-president, Boston Co-operative Milk Producers' Association; president at present time of Producers' and Consumers' Milk Company. Member of Holstein-Friesian Association of America; also Ayrshire Breeders' Association; New Braintree Grange; General Farmers' Club; Harvest Club; Spencer Agricultural Society; Holstein Club; Massachusetts Fruit Growers' Association and Cattle Owners' Association. Interested in general farming, with fruit growing and dairying as specialties.

GEORGE W. SANDERSON, Littleton, Middlesex County. — Died Nov. 24, 1912.

JOHN L. SMITH, Barre, Worcester County. — Age, fifty-three years. President, treasurer and trustee of Worcester West Agricultural Society; delegate to State Board of Agriculture for two terms; and master of Barre Grange for seven years, having held nearly all

offices in the grange. Member, Barre Grange and Worcester West Agricultural Society. Interested in fruit growing, dairying and pure-bred Holsteins.

NORMAN T. SMITH, West Springfield, Hampden County. — Age, eighty years. Vice-president, Hampden Agricultural Society, and for five years master of West Springfield Grange, No. 147. Member of New England and Bay State Agricultural societies, and milk inspector for West Springfield. Interested in general farming, with fruit growing, dairying, poultry raising and market-gardening as specialties.

L. W. WEST, Hadley, Hampshire County. — Age, seventy-eight years. President of Hampshire, Franklin and Hampden Agricultural Society; also president of Hampshire Agricultural Society and delegate to State Board of Agriculture. Member of Hope of Hadley Grange since its organization. Interested in general farming, with fruit growing, dairying, poultry raising and market-gardening as specialties.

22.

JESSE ALLEN, Oakham, Worcester County. — Age, sixty-five years. President, Worcester West Agricultural Society for two years. At present president, Oakham Farmers' Club. Interested in general farming, with fruit growing and dairying as specialties.

E. F. COLLINS, Southborough, Worcester County. — Not heard from.

THADDEUS GRAVES, Hatfield, Hampshire County. — Not heard from.

WATSON F. HAMMOND, Mashpee, Barnstable County. — Age, seventy-six years. Interested in general farming, with cranberry culture as a specialty.

ELMER D. HOWE, Marlborough, Middlesex County. — Age, fifty-two years. Secretary, lecturer, overseer and master of subordinate grange; secretary, master and member of executive committee, State grange; trustee of Massachusetts Agricultural College for twenty years; also trustee of Middlesex South Agricultural Society. Member of First Church of Marlborough, Marlborough Grange, Massachusetts Fruit Growers' Association, Massachusetts Dairymen's Association, Middlesex South Agricultural Society and Phi Sigma Kappa. Interested in fruit growing and dairying.

S. FRANK OLIVER, Avon, Norfolk County. — Age, seventy years. Past Commander, C. M. Packard Post, G. A. R., of Avon, and Past Grand Commander of Rising Star Lodge, I. O. O. F., of Randolph. Interested in general farming, with dairying as a specialty.

EVAN F. RICHARDSON, Millis, Norfolk County. — Age, forty-six

years. Lecturer, Massachusetts State grange; president, Massachusetts Agricultural College Alumni Club of Massachusetts, 1912-13. Interested in fruit growing and dairying.

WILLIAM E. PATRICK, Warren, Worcester County. — Not heard from.

ALBERT S. SHERMAN, North Westport, Bristol County. — Age, sixty-nine years. Secretary of the North Westport Farmers' Club from 1874 to 1896. Interested in general farming, with fruit growing and dairying as specialties.

21.

ISAAC ALGER, Attleborough, Bristol County. — Age, eighty-two years. Member of State Board of Agriculture. Interested in general farming, with fruit growing, dairying, market-gardening and cranberry culture as specialties.

JOHN BURSLEY, West Barnstable, Barnstable County. — Age, fifty-four years. Member of executive committee of the Barnstable County Agricultural Society; past master of East Sandwich Grange, and for eight years a deputy of Massachusetts State Grange. Interested in general farming, with dairying as a specialty.

WILLIAM P. BROOKS, PH.D., Amherst, Hampshire County. — Age, sixty-one years. President, Hampshire County Agricultural Society; second vice-president, American Association of Agricultural Colleges and Experiment Stations; agriculturist, experiment station since 1889; director, experiment station since 1905; member, Society for Promoting Agriculture; National Health League; Forestry Association; honorary member, Educational Society of Hokkaid, Japan; contributor to second, third and fourth, and editor of fifth and sixth, annual reports, Imperial College of Agriculture of Japan; contributor to Transactions, Massachusetts Horticultural Society, and to agricultural reports of United States and Massachusetts. Author of "Agriculture" (3 volumes), 1901. and "General Agriculture, Dairying and Poultry Farming." Interested in all branches of farming.

W. V. THOMPSON, Westborough, Worcester County. — Age, sixty years. Served in all the offices of the subordinate and Pomona Granges. Interested in general farming, with dairying and poultry raising as specialties.

20.

JOHN H. LANE, North Brookfield, Worcester County. — Served the grange as purchasing agent for many years; member of local grange twenty years; member, Pomona Grange ten years. Interested in general farming, with fruit growing, dairying, poultry raising and cranberry culture.

19.

GEORGE HUNT LUCE, West Tisbury, Dukes County. — Age, fifty-six years. Treasurer of Martha's Vineyard Agricultural Society. Interested in general farming.

F. A. PALMER, Stockbridge, Berkshire County. — Not heard from.

18.

TIMOTHY B. SALMON, Richmond, Berkshire County. — Age, fifty-two years. Member of Richmond Grange, No. 32. Interested in general farming.

E. M. MOORE, Tolland, Hampden County. — Not heard from.

T. R. CALLENDER, Northfield, Franklin County. — Not heard from.

17.

E. H. EAMES, Washington, Berkshire County. — Age, seventy-six years. Interested in fruit growing, dairying, poultry raising, market-gardening and cranberry culture.

A. J. GILSON, Dunstable, Middlesex County. — Age, eighty years. Member of cemetery commission. Interested in general farming.

EVERETT S. JACOBS, Wellfleet, Barnstable County. — Age, sixty-eight years. Interested in general farming.

EUGENE D. PARKS, Russell, Hampden County. — Age, fifty-one years. Vice-president, Union Agricultural Society of Blandford. Member of Russell Grange and chairman of board of selectmen of Russell for fourteen years. Interested in general farming, with poultry raising as a specialty.

WESLEY PETTENGILL, Salisbury, Essex County. — Age, seventy-seven years. Member of Essex Agricultural Society. Interested in fruit growing, dairying and poultry raising.

F. F. STOUGHTON, Gill, Franklin County. — Interested in dairying and poultry raising.

J. A. VAUGHAN, Carver, Plymouth County. — Age, sixty-three years. Member, Massachusetts Forestry Association and of Cape Cod Cranberry Growers' Association. Interested in general farming, with cranberry culture as a specialty.

W. F. WENDEMUTH, Prescott, Hampshire County. — Age, fifty-three years. Member of the school committee of the town of Prescott. Interested in general farming, with fruit growing, dairying and poultry raising as specialties.

16.

ORRIN PEER ALLEN, Palmer, Hampden County. — Age, seventy-nine years. Secretary and treasurer of the Eastern Hampden Agricultural Society for nineteen years. Member of State Board of Agriculture from 1897 to 1900; member of Eastern Hampden Agricultural Society since 1867, and member of the first State grange organized in Palmer. Interested in general farming.

JOHN T. BRYAN, Chester, Hampden County. — Age, fifty-four years. Secretary, Highland Agricultural Society and master, Middlefield Grange. Member of State Board of Agriculture. Interested in general farming, with fruit growing, dairying and poultry raising as specialties.

ROWLAND CASS, Bridgewater, Plymouth County. — Age, fifty-one years. Interested in general farming.

CHARLES C. COLBY, Hubbardston, Worcester County. — Age, fifty-one years. Member of Hubbardston Grange. Interested in general farming.

CHARLES F. CURTIS, Stoughton, Norfolk County. — Age, forty-nine years. Master of Stoughton Grange, No. 199, during 1908 and 1909. Member of Stoughton Grange, No. 199, and of Stoughton Board of Trade. Interested in dairying and poultry raising.

MOSES S. DOUGLAS, Acushnet, Bristol County. — Age, seventy-six years. Member of South Bristol Farmers' Club. Interested in market-gardening.

F. A. FALES, Norwood, Norfolk County. — Not heard from.

J. H. FLETCHER, Ware, Hampshire County. — Age, fifty-eight years. Member of Ware Grange, No. 164. Interested in dairying and poultry raising.

L. A. FOWLER, Westfield, Hampden County. — Age, sixty-four years. Interested in general farming, with dairying and tobacco growing as specialties.

EDGAR W. GOODNOW, South Sudbury, Middlesex County. — Age, fifty years. Master of Sudbury Grange. Interested in fruit growing.

HARRISON L. HOUSE, West Hanover, Plymouth County. — Age, forty-seven years. Was member and master for one year of what was formerly Hanover Grange, No. 206, which is now disbanded.

L. H. MAYNARD, Maynard, Middlesex County. — Age, forty-seven years. Interested in general farming.

JOHN K. MILLS, Northborough, Worcester County. — Age forty-nine years. Past master, Northborough Grange, also past master, Borough Pomona Grange; vice-president and director, Boston Co-operative Milk Producers' Company, also vice-president, Milk Producers' Association. Member of Northborough Grange. Milk Producers' Association and Massachusetts Fruit Growers' Association.

Interested in fruit growing, dairying, market-gardening and poultry raising.

JAMES J. NUTTER, Mendon, Worcester County. — Age, sixty-nine years. Master and lecturer, Mendon Grange; also member of executive committee of Mendon Grange. Interested in general farming, with fruit growing and poultry raising as specialties.

LESTER T. OSBORNE, Alford, Berkshire County. — Not heard from.

JOHN J. O'SULLIVAN, South Milford, Worcester County. — Age, forty-four years. Secretary, Bellingham Grange. Interested in poultry raising.

N. P. PERKINS, Danvers, Essex County. — Age, seventy years. Trustee of Essex Agricultural Society. Member of board of selectmen, overseers of poor and board of assessors of Wenham. Vice-president and trustee of Danvers Savings Bank. Interested in market-gardening and dairying.

NELSON D. PLUMB, Wendell, Franklin County. — Age, sixty years. Member of Bay State Lodge of Masons and Wendell Grange. Interested in general farming, with poultry raising as a specialty.

JOHN S. PRESTON, Harvard, Worcester County. — Age, sixty-eight years. Interested in general farming.

FRANK E. PROUTY, Brookfield, Worcester County. — Died Nov. 22, 1912.

F. W. SARGENT, Amesbury, Essex County. — Not heard from.

C. A. STIMSON, Athol, Worcester County. — Age, fifty-six years. Served as deputy of Massachusetts State Grange for ten years. President, Franklin and Worcester Pomona Grange, No. 4. Member of Royalston Grange, No. 195, and of Star Lodge, A. F. and A. M., Athol. Interested in general farming.

GEORGE A. WILDER, Townsend, Middlesex County. — Age, fifty-four years. Secretary of Townsend Grange for fourteen years. Secretary and past grand of North Star Lodge, No. 144, I. O. O. F., and past master of St. Paul Lodge, A. F. and A. M.

JOSEPH E. WILEY, Stoneham, Middlesex County. — Age, seventy-five years. Interested in fruit growing and poultry raising.

15.

GEORGE W. BRADLEY, Stow, Middlesex County. — Age, fifty-five years. Treasurer of Stow Grange at present time, having previously served as overseer, chaplain and assistant steward. Was member of Stow Farmers' Club while in existence. Interested in general farming, with poultry raising as a specialty.

FREEMAN H. SNOW, East Orleans, Barnstable County. — Not heard from.

ALFRED O. TYLER, East Princeton, Worcester County. — Age, fifty-three years. Member of East Princeton Grange. Interested in general farming, with poultry raising as a specialty.

14.

GEORGE L. CHURCHILL, Kingston, Plymouth County. — Not heard from.

JOHN L. DAVIS, East Longmeadow, Hampden County. — Age, forty-five years. Master and lecturer of East Longmeadow Grange; director, Springfield Co-operative Milk Association; also director, Hampden County Improvement League. Selectman and overseer of poor for eighteen years; school committeeman for four years. Interested in general farming, with fruit growing, dairying, poultry raising and market-gardening as specialties.

CLINTON P. HOWARD, West Bridgewater, Plymouth County. — Age, fifty-nine years. Trustee of Plymouth County Agricultural Society. Interested in general farming.

EDWIN V. KINGSLEY, Ponkapoag (Canton), Norfolk County. — Age, sixty-nine years. Master and overseer of Ponkapoag Grange, No. 231; gate keeper, overseer and master of Old Colony Pomona Grange, No. 13. Member of board of assessors and overseers of poor for six years; also auditor of Canton. Interested in general farming.

JOSEPH WELCH, Granville, Hampden County. — Not heard from.

13.

CHARLES F. CLARK, Erving, Franklin County. — Not heard from.

NATHANIEL G. STAPLES, Lakeville, Plymouth County. — Age, sixty-one years. Interested in general farming, with fruit growing, dairying and poultry raising as specialties.

EVERETT C. STETSON, Mattapoisett, Plymouth County. — Age, fifty-eight years. Master of Mattapoisett Grange. Interested in general farming.

12.

WILLIAM C. CLAPP, Easthampton, Hampshire County. — Age, thirty-nine years. Acted as the first secretary of Easthampton Grange, holding the office for two or three years; also as secretary of Easthampton Farmers' Club for several years. Easthampton correspondent for "New England Homestead;" at present time. Member of Hampshire County Pomona Grange, No. 8; Easthampton Grange, No. 27; Hampshire, Franklin and Hampden Agricultural Society; Ionic Lodge A. F. and A. M., and Sons of Veterans, No. 57. Interested in general farming, with market-gardening and poultry raising as specialties.

E. D. GIBSON, Ashburnham, Worcester County. — Age, sixty-two years. Interested in general farming.

J. H. FLETCHER, Ware, Hampshire County. — Not heard from.

WINTHROP FILLEBROWN, Plymouth, Plymouth County. — Age, forty years. Secretary of Mayflower Pomona Grange, 1910-13; lecturer of Plympton Grange, 1909, and Master of Plympton Grange, 1911-12. Member of I. O. O. F. Adams Lodge, Kingston. Professional dynamite blaster. Interested in general farming.

EDWARD H. SLATER, Tyringham, Berkshire County. — Age, fifty-six years. Has served as member of executive committee of Housatonic Agricultural Society, also as president, and for the past nine years as chief marshal, of the society. Member of Lee Grange, No. 88, for about twenty-four years. Interested in general farming, with fruit growing, dairying and poultry raising as specialties.

CHARLES S. WHEELER, Lincoln, Middlesex County. — Age, sixty-one years. Member of Lincoln Grange, No. 129. Interested in fruit growing and dairying.

11.

JOHN G. BURT, Agawam, Hampden County. — Reported for town of Agawam for above period of time, and has just taken up his residence in the town of Huntington.

A. D. CLIFFORD, Phillipston, Worcester County. — Not heard from.

F. G. CREAMER, Peru, Berkshire County. — Age, fifty-one years. Served on committee on agriculture in Legislature of 1902. Interested in general farming, together with fruit growing, dairying and poultry raising.

J. W. FLETCHER, Coldspring (Westford), Middlesex County. — Age, fifty-seven years. Member of Westford Grange. Interested in general farming, with fruit growing as a specialty.

WILLIAM GILBERT, Auburn, Worcester County. — Age, sixty-seven years. Past master of Auburn Grange, and a member of the grange at the present time. Interested in general farming, with dairying as a specialty.

SAMUEL HASTINGS, Warwick, Franklin County. — Not heard from.

C. Z. INZELL, Chester, Hampden County. — Not heard from.

JAMES S. MOORE, West Stockbridge, Berkshire County. — Age, seventy-one years. Member of West Stockbridge and Alford Grange. Interested in general farming, with fruit growing and poultry raising as specialties.

D. H. O'BRIEN, Rowley, Essex County. — Age, thirty-eight years. Master, Rowley Grange for four years; lecturer of said grange, two years. Interested in general farming, with fruit growing and dairying as specialties.

FREDERICK JEWETT REED, Shrewsbury, Worcester County. — Age, forty-eight years. Master of Worcester Central Pomona Grange, also master of Shrewsbury Grange. Secretary of Milk Association of Shrewsbury. Member, Shrewsbury Grange, Pomona Grange, Farmers' Club, Horticultural Society, Agricultural Society and Market

Gardeners' Association. Interested in general farming, with dairying, poultry raising and market-gardening as specialties.

E. W. RHOADES, New Marlborough, Berkshire County. — Age, fifty-four years. Interested in general farming, with fruit growing and dairying as specialties.

F. D. ROGERS, Monson, Hampden County. — Age, forty-six years. Director, Eastern Hampden Agricultural Society for seventeen years. Member, Palmer Grange, No. 241, and also of State grange. Interested in fruit growing, dairying and poultry raising.

THOMAS D. SEARS, North Brewster, Barnstable County. — Age, sixty-eight years. Interested in fruit growing and cranberry culture.

SAMUEL S. SYMMES, Winchester, Middlesex County. — Age, fifty-four years. Member, Massachusetts Horticultural Society, Massachusetts Fruit Growers' Association and Massachusetts Forestry Association. Interested in fruit growing, dairying and market-gardening.

H. W. WEATHERBEE, New Marlborough, Berkshire County. — Not heard from.

10.

ANDREW S. LONGFELLOW, Groveland, Essex County. — Age, forty years. Member of Groveland Grange and Essex Agricultural Society. Well known as the originator of the Longfellow strain of field corn. Interested in general farming, with fruit growing and dairying as specialties.

GEORGE H. RANDALL, Marion, Plymouth County. — Age, seventy years. Reporter for "New England Homestead" for the town of Rochester. Member of Post 190, G. A. R., and R. A. Pierce Post, New Bedford. Interested in general farming, with fruit growing, dairying, poultry raising and market-gardening as specialties.

HENRY A. TURNER, Norwell, Plymouth County. — Age, eighty-five years. Member of State Board of Agriculture nine years. Life member of Plymouth County, Marshfield and Hingham societies. Interested in general farming.

9.

HERBERT G. WORTH, Nantucket, Nantucket County. — Age, fifty-nine years. President of the Nantucket Agricultural Society. Member of Massachusetts State Board of Agriculture for three terms. Interested in general farming, with poultry raising as a specialty.

8.

GEORGE R. DODGE, South Hamilton, Essex County. Age, sixty years. Interested in fruit growing, poultry raising and market-gardening.

GEORGE L. MARCY, Newton Upper Falls, Middlesex County. — Age, forty years. Interested in general farming to a limited extent.

W. F. PERSON, South Hadley Falls, Hampshire County. — Age, fifty-eight years. Member of I. O. O. F. for twenty-nine years. Interested in general farming, with poultry raising and market-gardening as specialties.

MYRON A. RICHARDSON, West Brookfield, Worcester County. — Age, forty-nine years. Member of West Brookfield Farmers' Club for past thirty years. Interested in general farming, with poultry raising as a specialty. Engaged in raising young cattle and colts, and in making milk for the Boston market.

GEORGE P. SMITH, Sunderland, Franklin County. — Age, fifty-four years. President, Hampshire Agricultural Society; delegate to State Board of Agriculture, and lecturer of Sunderland Grange for three years. Member of board of selectmen of Sunderland eight years; trustee of town library, and Knight Templar of A. F. and A. M. Interested in the growing of onions and tobacco and in dairying.

7.

JOHN B. DYER, Truro, Barnstable County. — Age, fifty-nine years. Interested in general farming.

AURET M. LYMAN, Montague, Franklin County. — Age, seventy years. Acted as president, Hampshire County Agricultural Society from 1887 to 1890; manager, Montague Co-operative Creamery, and treasurer for seventeen years; secretary and treasurer, Massachusetts Creamery Association, 1895 to 1911; president, Franklin Harvest Club, 1895 to 1896, and correspondent for agricultural department many years. Member, Franklin Harvest Club twenty years; promoter, Granby Grange; promoter and vice-president, Bay State Fair; director, "Three County Fair" for many years; member of New England Rural Conference. Interested in general farming, with dairying and tobacco growing as specialties.

JOHN W. PECK, Seekonk, Bristol County. — Age, sixty-nine years. Interested in market-gardening.

E. L. SHAW, Chicopee, Hampden County. — Not heard from.

FREEMAN H. SNOW, East Orleans, Barnstable County. — Not heard from.

B. W. SPOONER, Petersham, Worcester County. — Age, seventy-five years. President of Worcester North Agricultural Society for two years; master of Petersham Grange two years, and of Worcester Pomona Grange two years. Charter member of Petersham Grange for thirty-eight years. Interested in general farming, with dairying as a specialty.

6.

ELLERY C. BATES, Beechwood, Norfolk County. — Age, thirty-eight years. Interested in poultry raising and market-gardening.

LEVI BURT, Westhampton, Hampshire County. — Age, forty-eight years. Master of Westhampton Grange for two years. Interested in general farming, with dairying and poultry raising as specialties.

FRANK R. FOSTER, Leyden, Franklin County. — Age, forty-six years. Interested in general farming, with fruit growing, dairying and poultry raising as specialties.

WALTER H. GLAZIER, Greenwich Village, Hampshire County. — Age, fifty-seven years. Interested in general farming.

ADIN B. HORTON, Rehoboth, Bristol County. — Not heard from.

ALBERT HOWES, South Ashfield, Franklin County. — Age, thirty-six years. Member of Ashfield Grange and Massachusetts Fruit Growers' Association.

5.

HOWARD C. BRIGGS, Segreganset, Bristol County. — Age, forty-five years. Secretary, "Dighton Rock" Grange of Dighton. Interested in fruit growing, poultry raising and market-gardening.

L. T. HOPKINS, Conway, Franklin County. — Age, fifty-four years. Has served as master, chaplain and secretary of local grange. Life member, Franklin County Agricultural Society, Hampshire, Franklin and Hampden Agricultural Society and Bay State Agricultural Society. Interested in fruit growing and poultry raising.

EDWIN T. RAWSON, Northridge Center, Worcester County. — Age, forty-one years. Master of Douglas Grange, No. 145. Interested in general farming, with fruit growing, poultry raising and market-gardening as specialties.

4.

E. F. DICKINSON, Billerica, Middlesex County. — Age, fifty-eight years. Member of Middlesex North Agricultural Society and Massachusetts Fruit Growers' Association, and correspondent for farm papers. Interested in general farming, with fruit growing, market-gardening, poultry raising and the growing of sweet corn as specialties.

3.

HENRY G. DANFORTH, East Norton, Bristol County. — Age, seventy years. Past master of Norton Grange, No. 218. Past master of Cohannet Lodge, No. 17, A. O. U. W., of Taunton; served the town of Norton as school committeeman fourteen years, 1880-93; moderator of town meetings for past seven years; selectman, as-

essor, overseer of poor and member of board of health, acting as secretary of the latter board from 1906 to 1911; representative in the General Court from First Bristol District, 1911. Interested in general farming, with fruit growing, dairying and poultry raising as specialties.

WILLIAM H. DAVENPORT, Griswoldville (Colrain), Franklin County. — Age, fifty years. Four years secretary and treasurer of National American Dominique Club, and at the present time president of said club. Life member of American Poultry Association. Interested in apple growing and poultry raising.

FRANK W. DERBY, Westminster, Worcester County. — Age, forty-five years. Master of Westminster Grange from 1907 to 1911. Interested in general farming.

E. JASPER FISHER, Mansfield, Bristol County. — Has acted as crop reporter for United States Department of Agriculture for many years, making two reports a month for the past two years. Interested in poultry raising and cranberry culture.

WILLIAM W. FOSTER, Lanesborough, Berkshire County. — Age, forty-five years. Served as master of Lanesborough Grange three years, treasurer two years and overseer one year. Member of Royal Arcanum. Interested in general farming, with fruit growing, dairying and poultry raising as specialties.

EUGENE D. GRISWOLD, Buckland, Franklin County. — Age, thirty-six years. Past master of Buckland Grange, and member of grange at present time.

WARD A. HARLOW, Cummington, Hampshire County. — Age, sixty-two years. Served as president of Hillside Agricultural Society; deputy of Massachusetts State Grange ten years; master of Cummington Grange five years; and master of Hillside Pomona Grange two years. Member of State Board of Agriculture three years. Interested in fruit growing, dairying and poultry raising.

WILLIAM N. HOWARD, North Easton, Bristol County. — Age, forty-one years. Ex-member, State Board of Agriculture; past master of Old Colony Pomona Grange and of Easton Grange. Served as clerk of committee on agriculture in Legislature of 1910-11. Interested in general farming, with fruit growing and market-gardening as specialties.

FRED N. LAURENCE, Brimfield, Hampden County. — Age, forty-six years. Vice-president, Worcester South Agricultural Society; past master, Brimfield Grange; lecturer of Brimfield Grange and overseer of Quaboag Pomona Grange. Assessor of town of Brimfield for five years. Interested in fruit growing and dairying.

L. E. LITTLEFIELD, Holliston, Middlesex County. — Not heard from.

HOWARD M. MUNROE, Lexington, Middlesex County. — Age, forty-four years. Past master, Lexington Grange; vice-president, Amer-

ican Columbian Plymouth Rock Club; United States reporter for Middlesex County. Member, Lexington Grange; Boston Market Gardeners' Association; Massachusetts Fruit Growers' Association; Lexington Field and Garden Club; Old Belfry Club; New England Fox Hunters' Club; and Middlesex Sportsmen's Association. Interested in general farming, with fruit growing, dairying, poultry raising and market-gardening as specialties.

ALMOND L. NICKERSON, Eastham, Barnstable County. — Age, forty-three years. Member of Eastham Grange; Fraternal Lodge, I. O. O. F.; Colfax Encampment, I. O. O. F., Middleborough; Friendship Council No. 19, O. U. A. M., and president of Village Improvement Society. Interested in market-gardening and poultry raising.

WILLIAM E. PERKINS, Foxborough, Norfolk County. — Age, thirty-one years. Served as master of Foxborough Grange for three years, and is at present a member of the grange. Interested in general farming.

ALMON L. PRATT, Belchertown, Hampshire County. — Age, forty-nine years. Member of Belchertown Farmers' and Mechanics' Association of "Union" Grange of Belchertown, and of A. F. and A. M. Interested in general farming.

W. J. PURINGTON, Shelburne, Franklin County. — Not heard from.

FREDERICK A. RUSSELL, Methuen, Essex County. — Age, sixty years. President, Essex Agricultural Society, and second vice-president, State Board of Agriculture. Interested in fruit growing, dairying and market-gardening.

S. BIXBY SARGENT, Merrimac, Essex County. — Not heard from.

LOREN E. STEVENS, Dodge (Charlton), Worcester County. — Age, forty-six years. Member of Charlton Grange, No. 92, having acted as master one year. Interested in general farming, with fruit growing and poultry raising as specialties.

W. T. TORREY, Southbridge, Worcester County. — Not heard from.

CHARLES A. WILLIAMS, Plainfield, Hampshire County. — Age, fifty-two years. Master and overseer of Hillside Pomona Grange and overseer of Plainfield subordinate grange. Interested in general farming, with fruit growing as a specialty.

HENRY D. WRIGHT, Rowe, Franklin County. — Age, forty-one years. Vice-president, Deerfield Valley Agricultural Society and member of Rowe Grange. Interested in general farming.

1.

MILTON A. CORLISS, Haverhill, Essex County. — Age, nineteen years. Overseer, Haverhill Grange, No. 54, and assistant steward, Essex County Pomona Grange, No. 2. Interested in general farm-

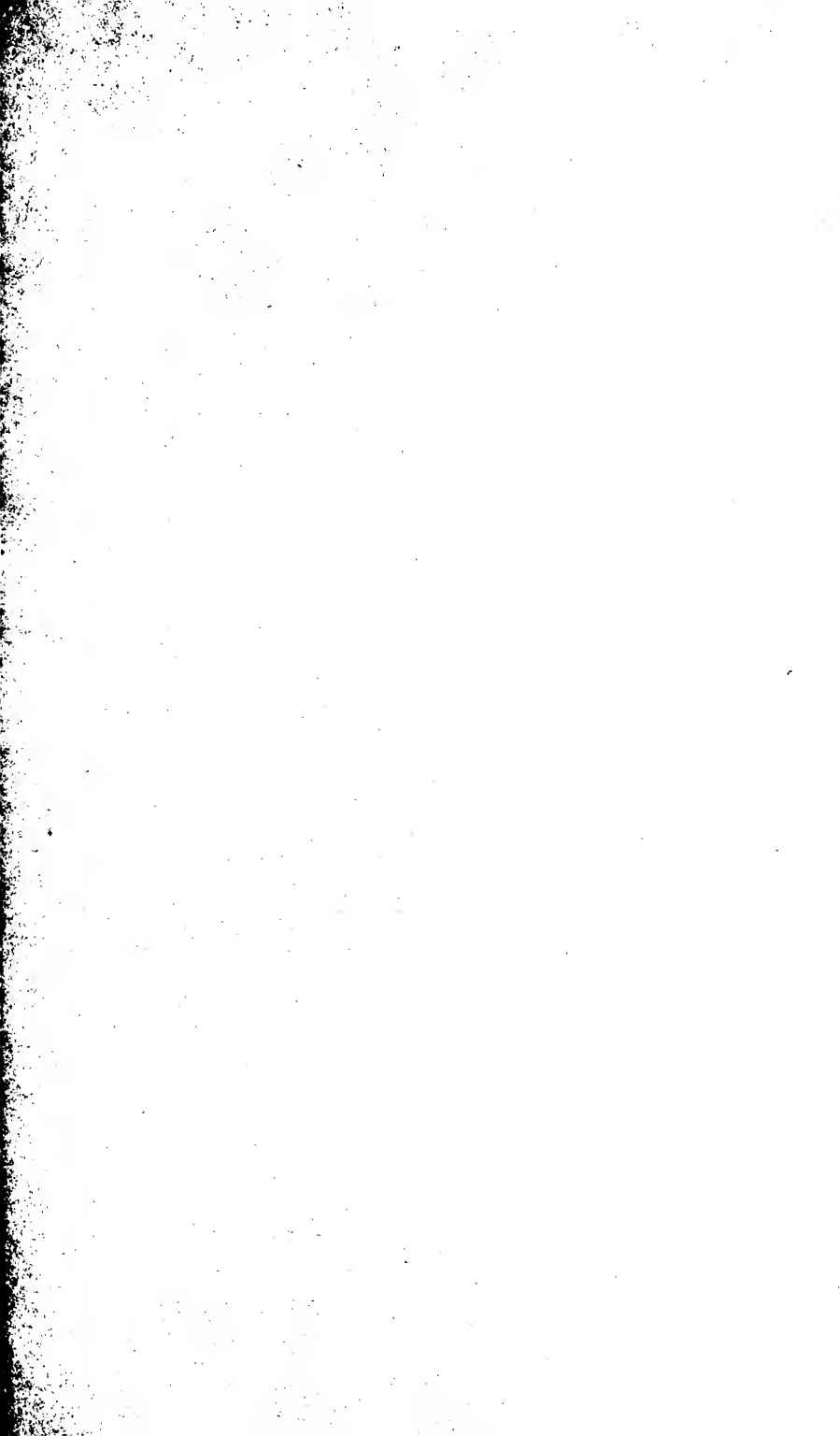
ing, with fruit growing, dairying, poultry raising and market-gardening as specialties.

HERBERT L. RAY, Sutton, Worcester County. — Age, forty-five years. Member of Sutton Grange. Interested in fruit growing and dairying.

EDWARD P. RIPLEY, Weston, Middlesex County. — Age, forty-one years. Past master, Weston Grange. Member of Massachusetts Fruit Growers' Association and American Association of Economic Entomologists. Interested in general farming, with fruit growing and dairying as specialties.

EVERETT D. ROBINSON, Uxbridge, Worcester County. — Age, twenty-four years. Member of Mendon Grange. Interested in fruit growing and dairying.

ANDREW A. SHAW, Watson (Ashfield), Franklin County. — Age, twenty years. Interested in general farming, with fruit growing as a specialty.



SERIES OF 1913.

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MASSACHUSETTS

CROP REPORT

FOR THE

MONTH OF JUNE, 1913.

PEACH GROWING IN WESTERN MASSACHUSETTS.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

WILFRID WHEELER, Secretary.

ENTERED JUNE 3, 1904, AT BOSTON, MASS., AS SECOND-CLASS MATTER,
UNDER ACT OF CONGRESS OF JUNE 6, 1900.

BOSTON:
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1913.

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CROP REPORT FOR THE MONTH OF JUNE, 1913.

OFFICE OF THE STATE BOARD OF AGRICULTURE,
BOSTON, MASS., July 1, 1913.

Owing to the unusually large size of the May crop report, and to the moving of the State printers, that issue was unavoidably delayed in publication. It is the purpose of those in charge to have a set date upon which the report shall be issued, and upon which it may be expected by its readers. To insure such publication it will be necessary for our correspondents to make their returns as nearly as possible upon the dates specified upon the blanks. The blanks will be sent out a day or so earlier, so as to give more opportunity for observation and inquiry.

The reports on different specialties have been continued in this, the crop report for June, the list of questions has been broadened where possible, and our staff of special correspondents has been increased as fast as desirable persons could be secured. Full reports of frost injury and insect damage are contained herein, and methods and practices in different sections are outlined. The information received through the market-gardeners' returns in regard to irrigation will be found of especial interest, as the practice is receiving more and more attention each year; a larger number of returns, however, would have been productive of still more valuable data. The special bulletin this month is entitled "Peach Growing in Western Massachusetts," and was prepared by Mr. L. W. Rice of Wilbraham, and delivered by him at the last annual meeting of the Massachusetts Fruit Growers' Association. Mr. Rice is actively engaged in the peach-growing industry, and is one of the most practical men whom we have in this State. This article, then, is especially interesting and valuable to those who are now engaged or are planning to engage in this industry.

CROP CONDITIONS JUNE 1, 1913.

The Crop Reporting Board of the Bureau of Statistics, United States Department of Agriculture, estimates, from the reports of the correspondents and agents of the bureau, as follows for the United States:—

| CROP. | ACREAGE, 1913. | | CONDITION JUNE 1 (PER CENT). | | | Condi- tion May 1, 1913 (Per Cent). |
|-------------------------|-------------------------|------------|---------------------------------|-------|-------------------------------|--|
| | Per Cent of 1912. | Acres. | 1913. | 1912. | Ten- Year Aver- age. | |
| Spring wheat, | 97.0 | 18,663,000 | 93.5 | 95.8 | 93.8 | - |
| Winter wheat, | 116.4 | 30,938,000 | 83.5 | 74.3 | 80.7 | 91.9 |
| All wheat, | 108.3 | 49,601,000 | 87.2 | 83.3 | 86.1 | - |
| Oats, | 101.1 | 38,341,000 | 87.0 | 91.1 | 88.4 | - |
| Barley, | 96.3 | 7,255,000 | 87.1 | 91.1 | 90.5 | - |
| Rye, | - | - | 90.9 | 87.7 | 89.7 | 91.0 |
| Hay, | - | - | 87.5 | 89.8 | - | 88.5 |
| Pastures, | - | - | 89.2 | 93.7 | 89.5 | 87.1 |

The estimated yields indicated by the condition of crops on June 1, 1913, and final yields in preceding years, for comparison, follow:—

| CROP. | YIELD PER ACRE (BUSHELS). | | | TOTAL PRODUCTION IN MILLIONS OF BUSHELS. | | | |
|-------------------------|------------------------------|----------------------------------|---------------------------|---|----------------------------------|----------------------------------|------------------|
| | 1913. ¹ | Final Esti- mate, 1912. | Aver- age, 1908-12. | 1913. ¹ | Final Esti- mate, 1912. | Final Esti- mate, 1911. | Census, 1909. |
| Winter wheat, | 15.9 | 15.1 | 15.2 | 492 | 400 | 430 | 418 |
| Spring wheat, | 13.5 | 17.2 | 13.3 | 252 | 330 | 191 | 265 |
| All wheat, | 15.0 | 15.9 | 14.5 | 744 | 730 | 621 | 683 |
| Oats, | 28.8 | 37.4 | 29.7 | 1,104 | 1,418 | 922 | 1,007 |
| Barley, | 24.4 | 29.7 | 24.5 | 177 | 224 | 160 | 173 |
| Rye, | 16.5 | 16.8 | 16.2 | - | 36 | 33 | 30 |

¹ Interpreted from condition reports.

WHOLESALE AND RETAIL PRICES COMPARED.

[FROM THE CROP REPORTER OF THE UNITED STATES DEPARTMENT OF AGRICULTURE FOR THE MONTH OF JUNE.]

The marked advance in prices during the last twenty years, and consequent discussion of the cost of living, prompts many persons to make inquiries concerning the difference between consumers' and producers' prices, and concerning whether such differences have widened owing to the recent increased prices.

Most agricultural products before reaching the ultimate consumer undergo some modification or manufacture. Wheat is manufactured into flour, hogs are slaughtered and converted into pork and lard, and many fruits and vegetables are preserved or canned. Probably three-fourths of all products undergo some such modification between the primary producer and the ultimate consumer. Eggs, milk, farm butter, live poultry, and green fruits and vegetables comprise practically all products which are purchased by the ultimate consumer in the same form as sold by the producers, and there are exceptions among these products; for instance, milk is frequently modified and bottled, and country butter is now a relatively small portion of all the butter sold.

In 1910 the Department of Agriculture made an investigation of the farm, wholesale and retail prices of butter, eggs, milk and poultry. From this investigation, which was made in the last week of January, 1910, it appeared that consumers in the 71 cities covered were paying an average of about 38.1 cents per dozen for fresh eggs, retail dealers were paying about 32 cents, and near-by producers reported receiving an average of 30.4 cents; the average price received by all producers of the United States, according to reports of county correspondents of the Bureau of Statistics, was 28.9 cents per dozen. Near-by producers frequently receive a premium over the prices of distantly shipped eggs; also, many farmers sell their eggs directly to the consumer, in which cases the consumer's price and the producer's price would be the same. The average price paid by the consumers, 38.1 cents, was about 19 per cent higher than the price

paid for eggs by retail dealers, 25 per cent higher than that received by near-by producers, and 32 per cent higher than the average price received by producers of the United States, 28.9 cents, as stated above. In this calculation no allowance is made for losses occasioned by breaking, spoiling or otherwise between the producer and consumer.

Chickens were purchased by consumers at 18.7 cents per pound and by retail dealers at 15 cents, while they were sold by near-by producers at 11.7 cents; the average of reports of all county correspondents at about the same time was 11.1 cents per pound. The price paid by consumers, 18.7 cents, was nearly 25 per cent higher than the price paid by retailers, nearly 60 per cent higher than the price reported received by near-by producers, and 68 per cent higher than the average price received by all producers, as reported by county correspondents of the Bureau of Statistics.

The average price paid by consumers for milk was 8.5 cents per quart; the average price paid by retail dealers was 4.7 cents, and the average price reported as received by producers was 4.5 cents. In some cities there are wholesale receivers and retail delivery dealers; the average price paid by delivery dealers to wholesale dealers was 6.4 cents. The price paid by consumers for milk was thus about 89 per cent higher than the price received by those producers who did not peddle their milk.

The average price of creamery butter in tubs to consumers was 36.5 cents per pound; the price paid for it by retail dealers was 31.8 cents; the retail price thus being nearly 15 per cent above the price paid by the retail dealer.

In order to ascertain whether the relative differences between producers' and consumers' prices have widened during the last twenty years, comparisons have been made of the relative retail prices of certain articles reported by the Bureau of Labor Statistics with the wholesale prices, together with the raw material from which manufactured, as reported by Bradstreet's. The articles selected are wheat and flour, steers and beef, hogs and ham and lard, sheep and mutton.

Comparing the average of prices for the last ten years.

1903-12, with the preceding ten years, 1893-1902, it appears that the price of wheat (No. 2 red, Chicago) advanced 32 per cent, the wholesale price of flour advanced 29 per cent, and the retail price of flour advanced only 28 per cent.

The price of hogs advanced about 33 per cent; the wholesale price of hams advanced 24 per cent, and retail price of smoked hams advanced about 32 per cent; retail smoked bacon advanced 55 per cent, and pork chops advanced 41 per cent; the wholesale price of lard advanced 31 per cent and the retail price advanced about 30 per cent. The price of steers (Chicago) advanced 24 per cent; the wholesale price of beef advanced 23 per cent; the retail price of sirloin steak advanced 19 per cent; round steak advanced 30 per cent; and rib roast advanced 23 per cent. The price of sheep advanced 19 per cent, and the wholesale price of mutton advanced 36 per cent; the retail price is not given.

The average farm price of potatoes on December 1 of the ten years, 1903-12, as estimated yearly by the Department of Agriculture, was about 26 per cent higher than for the preceding 10 years, whereas the retail price advanced in the same period about 29 per cent.

It would appear from the figures quoted that whatever be the margin between the producer's price and the consumer's price it has not widened much, if any, during the last twenty years of advancing prices.

WEATHER OF JUNE.

The weather of the month was of the average midsummer type, with temperature about the normal, and rainfall irregularly distributed, and, generally speaking, below the average for June. The daily temperatures were without marked extremes, the maxima ranging in the 80's on many days, but seldom above 90°, and the night temperatures in the 60's, excepting during the closing week, when the nights were warmer. In some sections there was a scarcity of rain, and drouthy conditions prevailed during the later half of the month, while in others heavy rains attending local storms gave precipitation near or above the seasonal average. There

was an abundance of sunshine, and, excepting in sections where the rainfall was deficient, the conditions were very favorable for planting, to growing crops, and to cultivation. At the close of the month it was generally considered, that the season was behind the average.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending June 2. — New England. Boston: Cool, cloudy, showery weather prevailed until the last few days, which were warm and favorable.

Week ending June 9. — New England. Boston: Fair and warm weather prevailed during the week, except at the close, which was cool, with light showers.

Week ending June 16. — New England. Boston: Clear weather prevailed. Temperatures were low the first part of the week, with frosts reported in some places. Temperatures were seasonable afterwards.

Week ending June 23. — New England. Boston: The weather was seasonable and favorable. Light to moderate showers occurred and were beneficial.

NOTICES OF MEETINGS AND PUBLIC GATHERINGS.

POULTRY.

Poultry Conference and Field Meeting of the State Poultry Association. — To be held at the Massachusetts Agricultural College, July 29, 30 and 31. Every live poultryman should attend.

Summer Field Meeting of the Board of Agriculture. — The date has been set for the summer field meeting of the Board. Friday, August 1, is the day, the Barnstable Fair grounds the place, the State Grange and the Barnstable County Agricultural Society are the co-operating organizations. Some of the best speakers of this State and other States will be on the program, and some excellent talks and demonstrations may be expected. Many years have elapsed since the Board has held a meeting in this particular part of the State, and this should be a rousing one. It will be

well worth the necessary time and effort to be present at this meeting. A program will be sent upon application to this office.

State Grange Field Days. — Arrangements have been completed for the annual series of summer field meetings of the Patrons of Husbandry of Massachusetts, and the complete schedule is given below, one of these big meetings having been arranged within easy reach of all the Patrons of the State. This is a very extensive series of State Grange field meetings, and great enthusiasm and interest mark their preparation in every case.

Each meeting will be held under the joint auspices of the State Grange and the local Pomona Grange.

The locations are all central, and many of them among the best farms in the State. Good speaking, music and other features at every field day. General basket dinner, sports and a good time for every one. A big vacation resting day in the midst of the summer's work. A good investment for everybody who attends. The meetings are: —

Wednesday, July 23, Danvers, at the Dudley P. Rogers farm.

Thursday, July 24, Winchendon, at Lake Dennison.

Friday, July 25, Waban, at the Boston Market Garden farm.

Saturday, July 26, Pembroke, at Mayflower Grove.

Monday, July 28, Cummington, on the Fair grounds.

Tuesday, July 29, Fitchburg, at Whalom Park.

Wednesday, July 30, Westborough, at Lake Chauncy.

Thursday, July 31, Colrain, at Hillside Park.

Friday, August 1, Barnstable, on the Fair grounds in conjunction with the summer field meeting of the State Board of Agriculture and field day of the Barnstable County Agricultural Society.

Saturday, August 2, Acton Center, on the Acton Common.

Monday, August 4, Springfield, at Forest Park.

Tuesday, August 5, Athol, at Brookside Park.

Wednesday, August 6, Billerica, at the farm of De Lacy Corkum.

Thursday, August 7, Greenwich, at the farm of George Loux.

Saturday, August 9, Lakeville, at Lakeside Park.

Tuesday, August 12, Leominster, at the farm of J. Henry Johnson.

Wednesday, August 13, at Canobie Lake, near the city of Lawrence.

Thursday, August 14, Berkshire, at the farm of George Ingalls.

Friday, August 15, Greenfield, at Shattuck Park.

Tuesday, August 19, Russell, at Riverside Grove.

Wednesday, August 20, West Brookfield, at the farm of John H. Webb.

Thursday, August 21, Sunderland, at the farm of Dr. M. H. Williams.

Friday, August 22, Foxborough, at Lakeview Park.

Wednesday, August 27, Monterey, at Turner's Landing, Lake Buell.

Among the speakers at the summer field meetings will be the following well-known people, and all will bring a live message for the Patrons of Massachusetts:—

Hon. Oliver Wilson of Illinois, master of the National Grange; Hon. N. P. Hull of Michigan, lecturer of the National Grange; Mrs. Eva S. McDowell of Wellesley, treasurer of the National Grange; Hon. C. S. Stetson, master of the Maine State Grange and chairman of the executive committee of the National Grange; Hon. John W. Weeks, United States Senator from Massachusetts; Hon. Gifford Pinchot of Washington, D. C.; Congressmen Augustus P. Gardner, Thomas C. Thacher and Allen T. Treadway; Elmer A. Stevens, treasurer of the Commonwealth; Dr. David Snedden, State Commissioner of Education; Prof. F. W. Rane, State Forester; Wilfrid Wheeler, Secretary of State Board of Agriculture; Frank D. Kemp, of the State Highway Commission; George H. Graham, of the State Fish and Game Commission; representatives of the State Agricultural College at Amherst; J. E. Warren, supervisor of rural schools; Rufus W. Stimson, director of agricultural education; State Master Charles M. Gardner, State Overseer Edward E. Chapman, State Lecturer Evan F. Richardson, State Chaplain Rev. Evan F. Wheelock and other well-known speakers.

SUMMARY OF GENERAL CROP CONDITIONS.

In the circular to general crop correspondents, returnable June 27, the following questions were asked: —

1. What insects are proving most injurious in your locality? (Name in order of greatest damage done.)

2. Give condition of Indian corn (100 representing normal). What is the acreage as compared with normal (give per cent)? Increase; decrease.

3. (a) Has haying begun? (b) What is the hay crop prospect (100 representing normal)?

4. (a) Compared with normal, what is the acreage of early potatoes (give per cent)? Increase; decrease. (b) What is the prospect for the crop (100 representing normal)?

5. (a) How do early market-garden crops compare with normal (give per cent)? In yield; in price. (b) What is the prospect for those not yet harvested (100 representing normal)?

6. How does the supply of dairy cows compare with one year ago (give per cent)? Increase; decrease.

7. (a) How does the production of the following dairy products compare with that of one year ago (give per cent)? Milk: increase; decrease. Cream: increase; decrease. Butter: increase; decrease. (b) What is the average net wholesale price, per can of 8½ quarts, received for milk? What is the average retail price per quart? How do these prices compare with those of one year ago?

8. What is the condition of pasturage in your locality (100 representing normal)?

9. What is the outlook for such of the following fruits as are grown for market (100 representing a normal crop)? Apples, pears, peaches, plums, strawberries, currants, gooseberries, raspberries, blackberries, cranberries.

10. Have you had damaging frosts since the last report (May 24)? If so, give date or dates, temperatures, crops damaged and extent of damage.

Returns were received from 121 correspondents, and from them the following summary was compiled:—

INSECTS.

The month of June has brought into prominence a greater number of insects, a total of 25 different kinds being reported. As might be expected, the tent caterpillar, reported so generally last month as doing the most damage, is again named this month by 69 correspondents. The caterpillars had practically ceased operations at time of making returns, but the leafless trees attested only too plainly to the havoc wrought. The worst injury is reported from Berkshire, Hampshire, Franklin and Plymouth counties, in order named. The potato beetle is reported by 55 correspondents, chiefly in the four western counties. Bristol, Norfolk and Barnstable, with their sandy soils, and crops more susceptible to its attacks, are suffering most from the ravages of the cut-worm, this insect being mentioned by 52 correspondents. The brown-tail moth is working principally in Middlesex, Essex, Norfolk, Worcester and Plymouth, with 26 reports; while the gypsy moth, with 18 reports, is most prevalent in Essex, Middlesex, Norfolk and Worcester counties. The squash bug and striped cucumber beetles are feeding on the gourds of Hampden, Bristol, Middlesex, Essex and Worcester, with 14 returns. Cabbage worms in Norfolk and Plymouth, cranberry fire worms in Barnstable, rose chafers in Essex and Plymouth, green apple aphids in Bristol and Hampden, onion maggots in Hampshire and Essex, forest tent caterpillars in Barnstable, Hampshire and Hampden, canker worms in Franklin, elm-leaf beetles in Berkshire, Norfolk and Worcester, and others, are mentioned.

INDIAN CORN.

Corn is late from one to two weeks, owing to cool dry weather, which not only restrained farmers from planting early but retarded germination. At time of making returns

the crop was small but growing well. The condition is: Nantucket, 100; Barnstable, 95.8; Plymouth, 90.7; Dukes, 90; Hampden, 89.7; Bristol, 86.8; Hampshire, 86.5; Essex, 86; Franklin, 85.7; Worcester, 83.8; Middlesex, 82.5; Berkshire, 76.2; Norfolk, 75; the State, 85.6. The acreage is: Franklin, 101.5; Essex, 101.2; Dukes and Nantucket, 100; Worcester and Hampshire, 99.5; Hampden, 99; Middlesex, 98; Barnstable, 97.5; Berkshire, 96.1; Bristol, 94.5; Norfolk, 94; Plymouth, 81; the State, 98.6.

THE HAY CROP.

Haying has begun in every county, although very little had been done in Berkshire. Of the 121 replies to this question, 82, or 67.8 per cent, were in the affirmative, and 39, or 32.2 per cent, in the negative. This is a larger percentage of affirmative returns than in any of the past ten years. Of those reporting "yes," 23, or 28 per cent, stated that "very little" or "hardly any" had been done. A rough estimate of the extent to which farmers had begun cutting may be derived from the percentage of returns to this effect, by counties, in order, as follows: Norfolk, Dukes and Nantucket, 100; Bristol, 91; Plymouth, 88.8; Middlesex, 84.7; Barnstable, 83.3; Franklin, 77; Hampden, 70; Worcester, 60; Essex, 50; Hampshire, 40; Berkshire, 10. Grasslands did not get enough rain in June to offset, in spite of the warm sunshine, the effects of the cool cloudy weather of May. Old mowings in particular have not sufficiently recovered from the droughts of the last few years to bring the average condition of all grasslands up to anywhere near normal. The hay crop prospect is: Bristol, 88; Middlesex, 85.3; Essex, 84.7; Plymouth, 83.1; Worcester, 82.9; Hampshire, 82; Hampden, 80.8; Norfolk, 80; Dukes, 75; Barnstable, 74.1; Franklin, 72.5; Berkshire, 70; Nantucket, 60; the State, 79.8.

EARLY POTATOES.

The acreage of early potatoes is: Worcester, 100.6; Middlesex, Plymouth, Dukes and Nantucket, 100; Berkshire, 98.6; Hampshire, 95; Barnstable, 94; Essex, 93; Franklin, 92.8; Norfolk, 90; Bristol, 89.3; Hampden, 71; the State,

96.9. The crop is later than normal, and some pieces are reported as just showing above the ground. The vines are growing well, however, and from the returns of those correspondents who do not consider the crop too little advanced for purposes of estimate the following summary is derived: Berkshire and Nantucket, 100; Plymouth, 98.2; Norfolk, 93.8; Essex, 93; Middlesex, 92.2; Hampshire, 91.6; Hampden, 90.8; Franklin, 89.2; Bristol, 86; Worcester, 84.2; Barnstable, 76.7; Dukes, 75; the State, 89.3.

EARLY MARKET-GARDEN CROPS.

Comparatively little market gardening is done in the western counties, and kitchen gardens had not yielded enough for many correspondents to form an estimate as to either quantity or price. Very full returns from the truck sections are at hand, and the summary of the eastern counties is consequently the more reliable. The yield has been: Nantucket, 100; Hampshire, 98.7; Bristol, 96.7; Essex, 95; Plymouth, 93.6; Barnstable, 91.9; Berkshire, 90; Hampden, 86.7; Worcester, 86.1; Middlesex, 84.2; Franklin, 82.5; Norfolk, 78.8; Dukes, no return; the State, 90.1.

While the yield was below normal, prices have ruled high, and there prevails a sentiment of fair crops and good prices. The average prices, as compared with normal, are: Middlesex, 105; Worcester, 104.3; Hampshire, 103.8; Essex, 102.5; Barnstable, 102; Franklin, 101.6; Nantucket, Plymouth, Norfolk, Hampden and Berkshire, 100; Bristol, 93.1; Dukes, no report; the State, 101.1. The early market-garden crops not yet harvested promise even better yields than those already marketed, the returns reflecting the influence of better growing conditions. Crop prospect estimates are: Hampshire, 102.5; Dukes and Nantucket, 100; Barnstable, 98; Plymouth, 95.8; Franklin, 95; Norfolk and Berkshire, 93.7; Essex, 93.3; Hampden, 93; Bristol, 90; Middlesex, 89.5; Worcester, 85.5; the State, 92.5.

DAIRY COWS.

During the past year the supply of dairy cows has decreased 6.8 per cent for the State, as a whole, with the most marked falling off in Nantucket, Hampden and Middlesex. The supply most nearly approaches that of last year in the county of Plymouth. From that of one year ago the supply has decreased as follows: Dukes, 25; Hampden, 14.1; Middlesex, 12.2; Franklin, 10.4; Nantucket, 10; Norfolk, 8.3; Berkshire, 7.5; Worcester and Barnstable, 4.2; Essex, 3.8; Bristol, 3.6; Hampshire, 2.5; Plymouth, 1.2; the State, 6.8. So long as dairymen continue to dispose of their herds the supply will follow the decline in the demand.

DAIRY PRODUCTS.

The production of milk, cream and butter has not decreased in proportion to the cow supply decline; in fact, cream production has increased in a few counties. With 100 representing the quantity of milk produced one year ago, the production on June 27 was: Dukes, 110; Berkshire, 107.2; Plymouth, 100; Hampshire and Barnstable, 98.8; Bristol, 98.5; Worcester, 97.8; Essex, 95; Hampden, 94.2; Nantucket, Norfolk and Franklin, 90; Middlesex, 84.4; the State, 96.2. For the State, as represented by the five western — the chief producing — counties, cream production has increased .3 per cent, and is: Hampden, 113.3; Franklin, 100.8; Berkshire, 100; Worcester, 97.7; Hampshire, 91.7; the State, 100.3. The butter-making figures as compared with one year ago are: Hampshire, 98.8; Franklin, 97; Hampden, 96.7; Berkshire, 95.8; Worcester, 93.8; the State, 96. The conclusion, from a study of all the returns, may run something as follows: dairy cows are in less supply because the demand has decreased, as a result of farmers discontinuing, for other pursuits, the production of milk. The amount of milk made has fallen off because dairymen have sold their herds, and because more milk is skimmed for the butter and ice-cream factories, as shown by the increase in cream production. The butter decrease may be due to a decline in the farm-made product, without consideration of the factory,

or it may mean absolute aggregate decrease. The dairy business as necessarily conducted by the majority of Massachusetts farmers is the least profitable branch of their operations, and many within the past six years have discovered the fact and sold out. Many others, nevertheless, realizing that animal husbandry is fundamental to the maintenance of soil fertility, continue to face a small profit, or even a deficit, in order that their money crops may not suffer. For the sake of the business of farming let us not forsake the dairy cow!

MILK PRICES.

Milk is wholesaled at different rates to city and town distributors, bakeries, stores and individuals, so that returns vary between such wide limits as 20 cents and 51 cents per can of 8½ quarts. Prices also depend upon the distance from market, the relative supply and the retail price as fixed according to the wealth and particular requirements of the consumer. Note that the following wholesale price averages reflect all these conditions separately, or in combination, as do the retail price averages given later: Plymouth, 48.3 cents; Bristol, 43.5; Barnstable, 43.3; Norfolk, 40.8; Essex, 40.2; Middlesex, 39.5; Hampden, 38.1; Hampshire, 36; Worcester, 34.9; Berkshire, 31.6; Franklin, 28.6; Dukes and Nantucket, no report; the State, 37.8.

Retail prices have advanced 1 or 2 cents per quart in some places within the past year. Outside of Suffolk County, which, if reported, would probably lead the list, average retail prices are: Nantucket, 9 cents; Norfolk, 8.75; Plymouth, 8.5; Essex, 8.25; Barnstable, 8.2; Bristol, 8.04; Dukes, 8; Middlesex, 7.9; Worcester and Hampden, 7; Berkshire, 6.9; Hampshire, 6.8; Franklin, 6; the State, 8.4.

PASTURAGE.

As compared with the last three or four years pasturage is in much better condition, although still far from normal. The condition is: Dukes, 100; Hampshire, 97; Worcester, 92.7; Bristol, 91.5; Essex, 90.6; Middlesex, 90.4; Plymouth and Nantucket, 90; Franklin, 88.5; Barnstable, 88.3;

Hampden, 85.8; Norfolk, 83.6; Berkshire, 78.8; the State, 89.6. Rain is badly needed for such upland pastures as are not supplied with springs, and many of our pastures are so scantily sodded that frequent rainfall is necessary to keep them in grazeable shape.

FRUITS AND BERRIES.

The berry crop prospect rather exceeds that for tree fruits. Blackberries, in particular, bloomed full and offer promise of a 91.5 per cent crop. Pears far exceed the other large fruits, while plums are rated lowest, owing to light bloom and frost. At present the outlook for apples is discouraging, and doubtless reflects the depressing effect of the sight of countless trees stripped by tent caterpillars. The damage has in reality been done to wild trees and trees not cared for, while those sprayed suffered only from frost damage to the bloom.

The fruit crop prospect table is printed in the special summary of fruit crop conditions.

FROSTS.

Frosts occurred June 7 to 10 in all counties save Essex, Norfolk, Dukes and Nantucket. Temperatures ranged from 22° F. to 38° F. The most severe damage was done in Berkshire and Franklin counties, where grass, corn and nearly all vegetables were damaged. Worcester County correspondents report slight damage. Middlesex crops suffered more, with "great damage to early market-garden crops" in one locality, while frost "killed the strawberry crop" in another, and cut beans, tomatoes, potatoes and vines in other sections. Reports of damage in other counties are few and slight injury done.

NOTES OF GENERAL CROP CORRESPONDENTS.

[Returned to us June 27.]

BERKSHIRE COUNTY.

Williamstown (S. A. HICKOX). — Tent caterpillars are proving most injurious at the present time. Condition of Indian corn is 90 per cent of normal; acreage, 80. It is hard to tell whether the grass crop will recover from the dry weather; it will depend upon

conditions during the next ten days: old meadows are now doomed. Haying has not begun, and the prospect is 75. The acreage of early potatoes is 90 per cent of normal. It is too early to give definite information about market-garden crops. The supply of dairy cows has decreased 10 per cent over one year ago, with a corresponding decrease in the supply of milk, cream and butter. Average net wholesale price of milk is 34 cents per can; at retail, 7 cents per quart. These prices are normal. The outlook for the following fruits compared with normal is: apples, 20; pears, 20; strawberries, 20; currants, 30; raspberries, 30; blackberries, 60. Frosts have injured beans, corn, potatoes and all market-garden crops badly; apples and all small fruits were nearly ruined.

North Adams (C. M. OTTMAN).—The tent caterpillar, potato beetle and cutworm are doing the most damage. Indian corn, condition, 75; acreage, 90. Haying has begun and the prospect is for 70 per cent of a normal crop. Acreage of early potatoes is 75 per cent of normal; the crop will be about normal. Early market-garden crops about 80 per cent of the normal in yield; 100 per cent in price; those not yet harvested promise a 100 per cent crop. The supply of dairy cows has increased 10 per cent over one year ago. There has been a corresponding increase in the production of milk and cream. Average net wholesale price for milk is 34 cents per can; retail price, 7 cents per quart. These prices are identical with those of a year ago. Condition of pasturage is 90. The outlook for the following fruits is: apples, 25; pears, 15; plums, 10; strawberries, 15; currants, 40; gooseberries, 40; raspberries, 90; blackberries, 100. On June 10 the temperature dropped to 30°. The hay crop is very light and there is very little fruit except raspberries.

Hancock (D. L. WHITMAN).—Potato beetles are doing the most damage. Indian corn, condition, 95; acreage, 100. The hay crop prospect is 65 per cent and operations have not commenced. The acreage of early potatoes has increased 15 per cent; the crop prospect is 110. Very few market-garden crops grown here; prospect for these is 100. The supply of dairy cows has decreased 10 per cent over last year; there has been a corresponding decrease in the production of milk and butter. Milk prices, 30 cents per can at wholesale; 5 cents per quart at retail. The prices are about the same as usual. Condition of pasturage, 80. Fruit outlook is: apples, 65; pears, 70; plums, 60; currants, 60. On June 8 and 9 the temperature dropped to 30°, and beans and tomatoes were killed. So far it has been a cold, dry season.

Cheshire (L. J. NORTHUP).—The Colorado potato beetle is doing the most damage. Indian corn, condition, 70; acreage, 100. Haying has not commenced, and the prospect is for about a 40 per cent crop. The acreage of early potatoes remains about the same. It

is rather early to make an estimate of the crop. Early market-garden crops are about 100 per cent in yield and in price; the prospect for those not harvested is 100. The supply of dairy cows has decreased 20 per cent over last year. The production of milk has decreased 15 per cent and butter the same amount. The average net wholesale price of milk is 30 cents per can; the retail price per quart is 8 cents. These prices are the same as usual. Condition of pasturage is 60. Strawberry outlook is 75. Do not remember any damaging frosts of late.

Windsor (HARRY A. FORD).—The tent caterpillar is doing the most damage. Indian corn is 80 per cent of normal in condition and the acreage is 100. Haying has not begun; if we do not get rain soon the crop will not be over 75. The acreage of early potatoes is 90 per cent as compared with normal. Very few market-garden crops raised. The number of dairy cows is growing smaller each year, the number this year being about 90 per cent of the number in 1912. The supply of milk has decreased proportionately. Milk retails at from 5 to 8 cents per quart. Condition of pasturage, 100. The apple crop will be about 25 per cent of normal, owing to the frosts; blackberries, 100. On June 8 and 9 the temperature dropped to 32° in some places, and potatoes and nearly everything else were cut down.

Peru (F. G. CREAMER).—Haying has not begun yet, and the prospect is for about a 75 per cent crop. The supply of dairy cows has decreased 25 per cent over last year. Condition of pasturage is good. The early frosts injured the hay crop. Apples look well.

Washington (E. H. EAMES).—Very little insect damage as yet. Indian corn, 50 per cent of normal in condition, and the acreage is 75 per cent of normal. It is too early to estimate the potato crop. The supply of dairy cows is about the same as last year, and dairy products are about the same. The net wholesale price of milk is 34 cents per can; retail, 7 cents per quart. These prices are about the same as a year ago. Pasturage is about 50 per cent of normal. Apples promise only a 50 per cent crop. There have been no frosts since the last report.

Lee (E. J. NORMAN).—The tent caterpillar, the pine-tree rust, the elm-leaf beetle and the cutworm are doing a good deal of damage. Indian corn is very late, condition, 50. The acreage is about 115. Haying has not begun; the prospect is for a light crop on account of dry weather; compared with last year, 75. The acreage of early potatoes has been increased 25 per cent. It is too early to estimate the potato crop. Early market-garden crops, 90 per cent of normal in yield, 100 per cent in price. The prospect for those not yet harvested is 75; possibly better if we get rain. The supply of dairy cows is about the same as one year ago. Milk

retails at 8 cents per quart, which is a raise of 1 cent over a year ago. Condition of pastures, 80. The fruit outlook is: apples, 45; pears, 45; plums, 5; strawberries, 25; currants, 90; gooseberries, 80; raspberries, 90; blackberries, 90. On June 8 and 9 the temperature dropped to 32° and 33°. Tomatoes, potatoes, beans, cucumbers and squashes were damaged from 25 to 75 per cent. The month has not been very satisfactory. During the early part it was cold, and at present it is hot and dry with a good deal of wind.

Becket (W. H. SNOW).—The potato beetle and caterpillars are doing the most damage. Indian corn, condition, 100; acreage, 105. Haying has not begun as yet; prospect is 75. The acreage of early potatoes is 95. Early market-garden crops are about 90 per cent in yield, and are very late. The supply of dairy cows has decreased 10 per cent during the last year. The supply of milk and cream is about the same as usual. The average retail price of milk is 7 cents per quart, which is an increase of 1 cent over a year ago. The fruit outlook is: apples, 90; pears, 90; strawberries, 100; currants, 100. Corn, potatoes, tomatoes, squashes and cucumbers, as well as most other crops, were damaged by frosts. We had a very dry May.

FRANKLIN COUNTY.

Rowe (HENRY D. WRIGHT).—Indian corn, condition, 50. The acreage is 75 per cent of normal. Haying has not begun; the prospect is 60 per cent. I think the frost has injured the hay crop. The acreage of early potatoes is about normal. The supply of dairy cows has decreased 25 per cent over one year ago; there has been a corresponding decrease in milk production. The condition of pasturage is 100. Apples promise a 50 per cent crop, while the strawberry crop was practically ruined by frosts.

Colrain (W. H. DAVENPORT).—The tent caterpillar has been very bad, but damage is about past; canker worm has done some damage. Indian corn, condition, 90; acreage, 110. Haying has not begun; the crop will not be over 75. The acreage of early potatoes is 75 per cent of normal; the prospect is not over 50. Early market-garden crops, about 50 per cent of normal in yield; the prospect for those not harvested is poor. The supply of dairy cows is about the same as one year ago. Milk retails for 6 cents per quart. Condition of pastures, 75. The fruit outlook is: apples, 60; pears, few; peaches, few; plums, few; strawberries, 50; currants, gooseberries, raspberries and blackberries, few. There was a frost on June 7, but not a very heavy one. The weather nearly all of the month has been cold, dry and backward.

Leyden (FRANK R. FOSTER).—The acreage of Indian corn is about normal. Haying has just begun; the crop promises about 55 per cent of normal. The acreage of early potatoes is 100 and

the prospect is also 100. Early market-garden crops are about normal in yield and price, and the prospect for those not harvested is 100. The supply of dairy cows has decreased 25 per cent during the last year. The production of milk and cream is about the same as one year ago, but the production of butter has increased 10 per cent. Condition of pastures, 80. The fruit outlook is: apples, 60; pears, 100; peaches, 100; strawberries, 40; raspberries, 100; blackberries, 100. On June 9 and 10 the temperature fell from 32° to 34°, and frosts cut early potatoes, beans and corn and greatly damaged the hay crop.

Hawley (C. F. SEARS).—Indian corn, condition, 75; acreage, about normal. Prospect for the hay crop, 60. Haying has not begun. The acreage of early potatoes is about normal and the prospect for the crop is 100. The supply of dairy cows and the amount of milk produced has decreased 5 per cent since one year ago. Milk prices are the same as usual. Pasturage condition, 80. The fruit outlook is: apples, 50; currants, 75; raspberries, 75; blackberries, 100. Frost on June 8 did considerable damage to the hay crop.

Buckland (EUGENE D. GRISWOLD).—The tent caterpillar is doing the most injury. Indian corn is about 100 per cent in condition, although a trifle late; acreage, compared with normal, is 100. There has been very little haying done; grass is now growing well, but the crop will be about 80 per cent of normal. Acreage of early potatoes is normal; it is difficult to tell what the prospect is, as they were set back by frosts. Pastures, condition, 85. The fruit outlook is: apples, 75; pears, 80; peaches, 90. June 10 was very cold; frost damaged potatoes and corn in some parts of the town and spoiled nearly all of the gardens.

Montague (A. M. LYMAN).—Tent caterpillars, cutworms and potato bugs seem to be doing most damage. Indian corn, condition, 90; acreage, 100. Haying has begun; the crop prospect is about 80. Compared with normal the acreage of early potatoes is 110; the prospect for the crop is about 90. Early market-garden crops are about 90 per cent of normal in yield, 100 in price; those not yet harvested promise 90. The supply of dairy cows has decreased 10 per cent over one year ago. There has been a corresponding decrease in the production of milk, cream and butter. The average net wholesale price of milk is 25 cents per can; at retail, 5 cents per quart. These prices are about the same as one year ago. Condition of pasturage, 80. The fruit outlook is: apples, 50; pears, 50; peaches, 40; plums, 40; strawberries, 60; raspberries, 25; currants, 80; blackberries, 40. The hard frost of June 10 did much damage to asparagus. The above shrinkage on fruit and berries is due to frost. There has been but little rain since May 1, which has shortened the hay crop 40 per cent. Pastures are very short.

Sunderland (GEORGE P. SMITH).—Larvæ of potato beetles are numerous. Indian corn, condition, 88. The acreage is about normal. Haying has begun, but not much has been cut; prospect is 85; good on rich, new seeding, old fields short. The acreage of early potatoes is about normal; the prospect for the crop is 90. Early market-garden crops are about 90 per cent in yield and 105 per cent in price, and the prospect for those not harvested is 95. The supply of dairy cows has decreased 5 per cent during the last year. The supply of milk is about the same, but the cream supply has decreased about 5 per cent. The average wholesale price of milk is 30 cents per can; retail price per quart, between 5 and 6 cents, which is a slight increase over a year ago. Pasturage condition, 95. The fruit outlook is: apples, 70; pears, 85; plums, 50; strawberries, 75; currants, 85; raspberries, 60; blackberries, 90. Tobacco is all set and stand is good, with growth normal. Onions are late but growing rapidly; some fields are thin.

New Salem (DANIEL BALLARD).—Most injurious insects are tent caterpillars and potato bugs. The condition of Indian corn is 75; acreage is normal. Haying has begun and the crop will be about 70 per cent of normal. The supply of dairy cows is as usual. The wholesale price paid for milk per can is 34 cents, and it retails for 6 cents per quart. These prices are a trifle higher than one year ago. Condition of pastures is 90. The fruit outlook is: apples, 100; pears, 90; strawberries, 85. Frosts did a little damage to gardens in low places in early June.

HAMPSHIRE COUNTY.

Plainfield (C. A. WILLIAMS).—Tent caterpillars are doing the most damage, and the potato bug next. Condition of corn is 90; its acreage is 110. Farmers have not begun haying; the prospect is for 80 per cent of a normal crop. The acreage of early potatoes is normal, and the prospect is for a 90 per cent crop. Early market-garden crops show 95 per cent of a normal yield; prices are 110; the prospect for those not harvested is 110. There is a decrease of about 10 per cent in the supply of dairy cows, and the supply of milk, cream and butter has decreased accordingly; 6 cents per quart is the price paid for milk at retail, which is about the same as last year. Pastures are about normal. The fruit outlook is: apples and pears, 75; peaches, 50; plums, 85; raspberries and blackberries, 100. No frosts since May 28. The cold month of May and late frosts have put most crops back, and the dry weather has also hurt them.

Goshen (GEORGE L. BARRUS).—Tent caterpillars have been the most injurious insects, but the potato beetle is now coming. The condition of corn is 90; the acreage is 85. Haying has not been

commenced. The frosts hurt grass on low lands, and the crop looks rather light. There is a 5 per cent increase in the acreage of all potatoes, and there is a prospect for a 100 per cent crop. Dairy cows continue in the same supply as a year ago. No wholesaling of milk done; retail price is 6 cents per quart, which is the same as a year ago. Pastures are in normal condition. The fruit outlook is: apples, 75; pears, plums, strawberries and blackberries, 100. No serious frosts.

Chesterfield (HORATIO BISBEE).—Tent caterpillars have been very plentiful and have set back the leaves on apple trees. Indian corn is in 90 per cent of a normal condition; its acreage is 100. No haying has been done yet; frosts in May and the cold, dry weather have put it back, and have reduced the prospects to a 70 per cent crop. Early potatoes will yield a normal crop. The supply of dairy cows shows a decrease of 10 per cent, and there are corresponding decreases in the production of milk and cream. Pasturage is in normal condition. The fruit outlook is: apples, 60; wild blackberries, 120. There have been frosts which killed tomatoes, beans, etc. Corn was planted late; came up well, and is looking good, but is small. Potatoes and other crops are backward, with a prospect of a very light crop of hay. Frosts hurt apples on low grounds. The wild blackberry bloom was very full.

Westhampton (LEVI BURT).—No serious damage has been done by insects in this vicinity. The condition of corn is 75, with acreage normal. Haying has not been started; prospect is for 80 per cent of a normal crop. Milk is selling for the same prices as last year. Pasturage is in normal condition. The fruit outlook is: apples and pears, 50; peaches, 25; strawberries, 50; currants, 100.

South Hadley (W. F. PERSON).—No insect damage is noticed except that done by potato bugs. The condition of Indian corn is about 75; its acreage is normal. No one is haying to any extent. The hay crop will be about 90 per cent of normal. The early potato acreage is about 75. The crop is very late. All market-garden crops are late, but are good—100 per cent—in yield, and are selling at normal prices. Those not yet harvested promise a 100 per cent yield. The supply of cows is about the same as last year; production of milk is 90 per cent of that of a year ago; wholesale price of milk is 6 cents per quart, and this commodity retails for 8 cents, which is 1 cent higher than a year ago. Pasturage is 90 to 100 per cent of a normal in condition. The fruit outlook is: apples, 50; pears, 75; strawberries, 90; raspberries, 75; blackberries, 90.

Hadley (H. C. RUSSELL).—The most troublesome insects are tent caterpillars, currant worms, cutworms and potato bugs. The condition of Indian corn is 90, and the usual acreage has been planted.

Haying has been started and there is promise for 80 per cent of a normal crop. A 10 per cent greater acreage of early potatoes has been planted, and the crop promises to be as usual. In yield, market-garden crops are 100; in price, 105. The prospect for those not yet harvested is 100. The number of dairy cows is 5 per cent less than a year ago, with a corresponding decrease in dairy products. The average net wholesale price paid for milk is 30 cents per can; the average retail price per quart is 6 cents. These prices show a 5 per cent increase over those of one year ago. Pasturage is in 90 per cent condition. The fruit outlook is: apples and pears, 110; peaches and strawberries, 50; currants, 75; blackberries, 50.

Amherst (WILLIAM P. BROOKS). — Onion maggots and cutworms are proving most injurious. Corn is backward; its condition is 90; the acreage is normal. Haying has begun and the crop will show a 100 per cent yield. A normal acreage of early potatoes has been planted, and the prospect is for a 90 per cent crop. Yields and prices of early market-garden crops are about normal, and the prospect for those not yet harvested is the same. There is no marked difference in the supply of dairy cows between now and a year ago, and the same may be said of dairy products. Milk retails for 8 cents per quart, which is the same price received a year ago. Condition of pastures is 100. The fruit outlook is: apples and pears, 75; peaches, 100; plums, 50; strawberries, 75; currants, raspberries and blackberries, 100.

Greenwich (WALTER H. GLAZIER). — The most injurious insects are cutworms. The condition of corn is 95; the acreage has been increased 10 per cent above normal. No haying has been done as yet; there is a prospect of a 95 per cent crop. The supply of dairy cows is about the same; the price of milk per can is 32 cents; per quart at retail, 6 cents. These prices are about the same as those one year ago. In the early part of June a hard frost cut crops badly. Planting has been late, but everything is looking quite well. There will be no fruit in this town to speak of, as the May frosts destroyed the bloom.

HAMPDEN COUNTY.

Blandford (EXOS W. BOISE). — The most injurious insect has been the tent caterpillar, with potato beetles most troublesome at present. The corn crop is in 90 per cent condition, and a normal amount has been planted. Very little haying has been begun; the prospect is for 85 per cent of a normal crop. A normal acreage of early potatoes has been put in. Early market-garden crops show a yield of 80, but are selling for normal prices: those not yet harvested will be 90 per cent crops. The number of dairy cows has been decreased 20 per cent over a year ago. Milk and cream production

has fallen off 10 per cent, while butter production has decreased 20 per cent. Milk sells for 45 cents per can at wholesale and 7 cents per quart at retail, which prices prevailed a year ago. Pasturage is in 90 per cent condition. The fruit outlook is: apples, 50; pears, 40; peaches, 50; plums, 10; strawberries, 50; currants, raspberries and blackberries, 90.

Russell (E. D. PARKS). — The most troublesome insects are the tent caterpillars and currant worms, while the potato beetles are just coming on in very great numbers. Corn is in 90 per cent condition; the acreage is 85 per cent of normal. Haying has commenced; the prospect is for an 80 per cent crop. The number of early potatoes planted has been increased 5 per cent, and there is prospect for an 80 per cent crop. In both yield and price early market-garden crops are 90 per cent of a normal, and those not yet harvested will yield 95. The supply of dairy cows has increased 20 per cent; the production of milk shows a 10 per cent increase, while cream and butter show 5 per cent increases. Milk is selling for 34 cents per can at wholesale and for 6 cents per quart at retail, the same prices having been received a year ago. Pasturage has been in very good condition, but is now drying up very fast. The fruit prospect is: apples, 85; pears, 90; peaches and plums, 85; strawberries, 60; currants, 90; raspberries and blackberries, 90, if we have rain.

Southwick (L. A. FOWLER). — The elm-leaf beetles and potato bugs are proving most injurious. In both condition and acreage, Indian corn is normal. Hardly any haying has been begun; there will be a 90 per cent crop. Early potatoes show a 10 per cent increase in acreage. No noticeable change is evident in the supply of cows, but there is an increase of 10 per cent in the production of cream. The average net wholesale price paid for milk per can is 47 cents; that paid per quart is 7 cents, which prices prevailed one year ago. Pastures are in 100 per cent condition. The fruit outlook is: apples, 100; pears, 60; strawberries, 25; raspberries, 80.

West Springfield (N. T. SMITH). — Indian corn is in 80 per cent condition; its acreage is 90 per cent of a normal. Very little has as yet been done. There is indication of a 75 per cent crop, but this prospect may improve if rains are abundant. The acreage of early potatoes has decreased 10 per cent; the prospect is favorable if the crop is carefully cared for. Early market-garden crops have yielded 85 per cent of normal, but are bringing normal prices. With favorable weather the prospect for those not yet harvested might be called 100. By the report of the cattle inspector, dairy cows have decreased 14 per cent; milk production has decreased 12 per cent; this product is sold for 4½ cents per quart wholesale, and 8 cents per quart retail, just the same as one year ago. Pastures are in 75 per cent condition. The fruit outlook is: apples, good; pears,

set heavily; peaches, very few; strawberries, very short crop; raspberries and blackberries, promising. The apple trees in this town are mostly dead.

East Longmeadow (JOHN L. DAVIS).—The codling moth, potato beetle, tent caterpillar, cutworm, wire worm and squash bug are the most injurious insects. The condition of Indian corn is 80; its acreage is 90. Haying has begun and there is prospect for a 60 per cent crop. The early potato acreage is about normal; prospect for the early crop is 75; that for the late potato crop, 100. In yield, early market-garden crops are 80; in price, 10 per cent higher than normal; the prospect for those not harvested is 100. The dairy cow supply shows an increase of 10 per cent, and milk production has been increased in the same degree. The wholesale price paid for milk per 10-quart can is $4\frac{1}{4}$ cents per quart, which is the same as last year. Pastures are in 80 per cent condition. The fruit outlook is: apples and pears, 50; peaches, 20; plums, 40; strawberries, 60. Frosts on about June 10, for two nights in succession, damaged beans, peas, tomato plants, some corn and potatoes and also strawberries.

Wilbraham (H. M. BLISS).—The condition of Indian corn is 75 to 80. The acreage is 90. Farmers have not begun haying; the hay crop prospect is 85 to 90. Compared with normal the acreage of early potatoes is 80 per cent, being an increase of 5 per cent over last year; crop prospect is 90. Early market-garden crops, in comparison with normal, are about 85. The supply of dairy cows has decreased 25 per cent over one year ago, with a corresponding decrease in the production of milk, cream and butter. The wholesale price of milk is 35 cents per can, 8 cents per quart at retail. These prices are about the same as a year ago. The fruit outlook is: apples, 85; pears, 90; peaches, 70; strawberries, 80; currants, 75. The temperature has several times dropped to freezing, and once dropped to between 25° and 30° , doing great damage to peaches. The season is very backward; some planted corn and potatoes only last week.

Monson (F. D. ROGERS).—Potato bugs, striped cucumber beetle, squash bugs, tent caterpillars and cutworm have been very plentiful. Indian corn, condition, 100; acreage, compared with normal, 110. The hay-crop prospect is 80, but no harvesting has been done as yet. The production of dairy products is practically the same as that of one year ago, although the number of cows is on the decrease. The retail price received for milk is 7 cents per quart. Condition of pasturage, 90. The fruit outlook is: apples, 25; pears, 75; peaches, 25; strawberries, 50; gooseberries, 75; raspberries, 100; blackberries, 100. Frosts have done considerable damage since date of last report.

Hampden (E. NORTON DAVIS). — Cutworms, apple aphid, potato beetle, flea beetle, striped squash bug and the rose chafer are doing much damage. Indian corn, condition, 80; acreage, about normal. Haying has barely begun; the crop prospect is 75. The prospect for garden vegetables is 80. Dairy cows remain about the same in numbers, although there has been a decrease of about 10 per cent in the amount of milk produced and an increase of 20 per cent in butter. Average net wholesale price of milk, 34 cents per can; average retail price, 5 cents per quart. These prices are about the same as usual. Condition of pasturage is 85 to 90 per cent of normal. The prospect for the apple crop is 40; peaches, 10. No damage from frosts to speak of.

WORCESTER COUNTY.

Athol (CLIFFORD H. SMITH). — All kinds of insects are plentiful this year. Condition of Indian corn, 75. The acreage has been increased about 20 per cent above normal. Haying has just begun; crop prospect is 80. The acreage of early potatoes is about 110 per cent of normal; the crop prospect is 65. Market-garden crops 55 per cent of normal in yield, 100 in price; those not yet harvested, prospect, 90. Supply of dairy cows is about the same as one year ago. There has been about a 10 per cent decrease in milk production, 10 per cent increase in cream production and 25 per cent decrease in the amount of butter made. The average wholesale net price of milk is 50 cents per can; the average retail price per quart is 8 cents. These prices are the same as a year ago. Condition of pasturage in this locality, 40. The fruit outlook is: apples, 40; plums, 20; strawberries, 60; raspberries, 75; blackberries, 75.

Gardner (W. E. KNIGHT). — Cutworms are the most injurious. Condition of Indian corn, 90; acreage, about normal. Haying has begun and the prospect is 85 per cent for the crop. The acreage of early potatoes is about normal; the crop prospect, 85. Dairy products are about the same in amount as one year ago; wholesale price received for milk, 35 cents per can; retail price, 7 cents per quart, which is about the same as a year ago. Condition of pasturage, 75. Fruit prospect: apples, 65; pears, 90; raspberries, 85. There have been no damaging frosts since the last report.

Fitchburg (Dr. JABEZ FISHER). — Haying has not yet been begun; crop prospect is 75. Condition of pasturage is 80 per cent of normal. Fruit outlook is: apples, 70; pears, 100; strawberries, 60; grapes, 80. Cold, dry winds have not favored vegetation, even with good sunshine.

Hubbardston (CHARLES C. COLBY). — Tent caterpillars and brown-tails are most in evidence. Indian corn, condition, 90; acreage, about normal. Haying has begun and the prospect for the

crop is 75 to 80. Acreage of early potatoes is about normal; the prospect for the crop is 90. Dairy cows have decreased 10 per cent in the last year. The production of milk has decreased from 8 to 10 per cent. The average wholesale price per can is 31 to 33 cents; the average retail price per quart is 6 cents. These prices are about the same as last year. Pasturage, condition, 100. The apple prospect is about normal.

Dana (LYMAN RANDALL). — Cutworms, tent caterpillars and potato bugs are most injurious. Indian corn, condition, 60; acreage, 100. Haying has not begun; the prospect for the crop is 80. Early potato acreage is about the same as last year; prospect for the crop is hard to tell as yet; although somewhat backward they are looking well. Market-garden crops are late and probably about 75 per cent of normal in yield; about normal in price; those not yet harvested promise about 75. The supply of dairy cows is about the same as one year ago, and the production of dairy products has not changed. Milk retails at 8 cents per quart, which is about the same as one year ago. Pasturage, 75. Fruit prospect: apples, 25; pears, 50; peaches, 10; strawberries, 10; raspberries, 75; blackberries, 40; cranberries, 80. About the 1st of June we had severe frosts; nearly all crops were damaged more or less.

New Braintree (CHARLES D. SAGE). — Very little damage is being done by insects just now; elm-leaf beetles causing some trouble. Indian corn, condition, 80. Haying has begun, and the prospect is for an 80 per cent crop. The acreage of early potatoes is about 90 per cent of normal; prospect for the crop is about 90. There is no increase in the number of dairy cows. It is almost impossible to get reliable help on the farm, and with the low price of milk farmers are discouraged and want to get out of the dairy business. There has been a decrease of 10 per cent in the production of milk during the past year, cream, 20 per cent, butter, 20 per cent. Although it is hard to average the price of milk, I should say at wholesale it is 32 cents per can; at retail, 7 cents per quart. The condition of pasturage is about 85, the severe droughts for the past two years having injured the sward. The fruit prospect is: apples, 75; pears, 50; plums, 50.

West Brookfield (MYRON A. RICHARDSON). — The elm-leaf beetle, tent caterpillar, cutworm and potato bug are proving most injurious. Acreage of Indian corn is about normal, although there is a slight increase. No haying has been done; the crop prospect is 75. The acreage of early potatoes is about the same as usual; it is too early to give figures in regard to the crop. Dairy cows are scarce and high. The milk production is smaller than a year ago; average price per can, 30 cents, which is somewhat lower than a year ago. Pasturage condition, 60. The outlook for fruits is: apples, 60;

pears, 90; strawberries, 100; currants, 90; blackberries, 100. No frost damage during June.

North Brookfield (JOHN H. LANE).—Tent caterpillar, Colorado potato beetle and striped squash bug are doing the most damage. Indian corn, condition, 90; acreage, about normal. Hay crop prospect is 60, and haying has commenced. The acreage of early potatoes is 100 and the prospect for the crop, 75. Prospect for market-garden crops is 75, although they are somewhat late; in price, 120; prospect for those not yet harvested, 75. The number of dairy cows is about 90 per cent as compared with one year ago. The production of milk has decreased about 5 per cent during the last year; price per can, 34 cents wholesale; 7 cents per quart at retail. Condition of pasturage, 60. The fruit crop prospect is: apples, 10; pears, 10; plums, 10. The May frosts proved very injurious to fruits, and the caterpillars destroyed much of what the frosts left.

Southbridge (E. T. TORREY).—Tent caterpillar and cutworm lead the insect destroyers. Condition of Indian corn is 100, and the acreage is about normal. Very little haying has been done as yet; hay crop prospect, 120. Prices for market-garden crops are about normal; prospect for those not harvested, 110. The supply of dairy cows is about equal to that of one year ago; the production of milk is about 125 per cent as compared to that of a year ago; average wholesale net price, 40 cents per can; retail price, 7 and 8 cents per quart, this being nearly 1 cent higher than last year. Condition of pastures, 150. Fruit crop prospect: apples, 80; strawberries, 100; blackberries, 110.

Leicester (H. H. KINGSBURY).—Most damage is being done by potato beetles and squash bugs; the tent caterpillar has been very destructive, but now is in the inactive stage. Condition of Indian corn, 90; acreage, about normal. No haying has been done as yet; crop prospect, 85. Acreage of early potatoes 140 per cent compared with normal; the prospect for the crop is indefinite at the present time. Average net wholesale price of milk is 40 cents per can; average retail price, 8 cents per quart. Dairy products are about the same as one year ago; the number of cows is also about the same. Apples and pears promise a 90 per cent crop. No frost injury has been noticed during the past month.

Sutton (H. L. RAY).—The tent caterpillar has been doing the most damage. Indian corn, condition, 75; compared with normal the acreage is 65. Very little haying has been done; prospect for the crop, 90. Very few early potatoes grown in this section. Prospect for market-garden crops, 75. Dairy cows and their products are about the same as one year ago; milk prices, wholesale, 34 cents per can; retail, 6 cents per quart. These prices are about the same

as last year. Condition of pasturage is 90. The outlook for fruits is: apples, 50; pears, 90; peaches, 25; strawberries, 75.

Southborough (EDWARD F. COLLINS). — The most injurious insects at present are potato bugs and cucumber bugs. Condition of corn is 95; acreage, about 90 per cent of normal. Haying has begun and there will be a 100 per cent crop. The acreage of early potatoes is about 90 per cent of normal; prospect for the crop, 100. Market-garden crops about normal in yield; in price, 105. The supply of dairy cows has decreased about 10 per cent during the past year, with a corresponding decrease in the milk production; wholesale price for milk, 38 cents per can; retail price, 8 cents per quart; these are 10 per cent less than one year ago. Condition of pasturage in this locality, 100. The fruit crop prospect is: apples, 10; pears, 100; peaches, 10; plums, 100; strawberries, 100; currants, 100; raspberries, 100.

Sterling (HENRY S. SAWYER). — The brown-tail and gypsy moths are doing most damage in this locality. Condition of Indian corn, 75. Hay crop prospect, 90; haying is under way. The acreage of early potatoes is 90 per cent of normal; prospect for the crop is 90. Early market-garden crops not harvested, and the prospect for the crop is rather doubtful. The supply of dairy cows is about the same as last year, as also is the supply of dairy products. The price of butter has increased 2 cents per pound; the net wholesale price of milk is 32 cents per can; retail price, 7 cents per quart. These prices are about the same as usual. Pasturage condition, 100. The fruit outlook is: apples, 50; pears, 50; peaches, 25; plums, 25; strawberries, 25; currants, 50; raspberries, 25.

Lancaster (J. F. BROWN). — Cutworms are the most injurious insects. Indian corn, condition, 80; acreage, 100. Haying has begun, and the prospect for the crop is 85; old fields seem very light. Prospect for the potato crop is good. Early market-garden crops are about 90 in yield; 100 in price; the prospect for those not yet harvested is 85. The supply of dairy cows has decreased 10 per cent since last year. Pasturage condition, 100. The fruit outlook is: apples, 80; pears, 100; peaches, 75; gooseberries, 100; raspberries, 100; blackberries, 100. On June 6 the temperature was 30° in low sections, and 36° in the uplands.

MIDDLESEX COUNTY.

Townsend (G. A. WILDER). — The most injurious insects are the tent caterpillar, brown-tail and gypsy moth and elm-leaf beetle. Indian corn is in 85 per cent condition and the acreage is normal. Haying has begun; the prospect is for a 75 per cent crop. The acreage of early potatoes is about the same as usual, and there will be an 80 per cent crop. Compared with normal, early market-

garden crops show a 75 per cent yield and are from 15 to 25 per cent higher in price. The prospect for those not yet harvested is 75. Compared with one year ago, the supply of dairy cows shows a decrease of 10 per cent. There has been a decrease of 10 per cent in the production of both milk and cream and a decrease of 15 per cent in that of butter. The retail price of milk averages 7 cents. Pasturage is in 85 per cent condition. The fruit outlook is: apples, pears, peaches and plums, 25; strawberries, 50; currants, 40; gooseberries, raspberries and blackberries, 25; cranberries, 45. There have been damaging frosts.

Westford (J. W. FLETCHER). — Gypsy moths are doing the most damage. The condition of Indian corn is 85; acreage has been increased 10 per cent. Haying has not begun; the prospect is for 90 per cent of a normal crop. The acreage of early potatoes is 75 per cent of normal. Dairy cows are in about the same supply. Milk is selling wholesale at 32 cents per can and retail at 6 cents per quart, the same as one year ago. Pasturage is in 90 per cent condition. The fruit outlook is: apples, 50; pears, 75; strawberries, 80; raspberries, 100; blackberries, 25.

Billerica (E. F. DICKINSON). — Caterpillars, brown-tail moths and gypsy moths are proving most injurious. The condition of Indian corn is 90; the acreage is 110. Haying has begun and there will be 85 per cent of a normal crop. There is a normal acreage of early potatoes and the crop is looking well but is late. Early market-garden crops show 75 per cent of a normal yield; prices are normal. The prospect for those not yet harvested is 80. Milk sells for 36 cents per can of $8\frac{1}{2}$ quarts and retails at 7 cents per quart, which prices prevailed one year ago. Pastures are in 100 per cent condition. The fruit outlook is: apples, 55; pears, 75; peaches, 40; plums, 35; strawberries, 80; currants, 75. The frost on June 10 did slight damage to corn, beans and tomatoes; the temperature was 38° F. For all outdoor vegetables this is a late season. Tree fruits, however, are rather earlier than usual, and apples are large for this date.

Stow (GEO. W. BRADLEY). — The most injurious insects are the tent caterpillar and the brown-tail and gypsy moths. The condition of corn is 50; its acreage is 75. Haying has commenced, with a prospect for an 80 per cent crop. Early potatoes have increased 25 per cent in acreage. The prospect is for a yield of 75 per cent. Dairy cows have decreased 25 per cent in supply. Milk production has decreased 50 per cent; butter production, 25 per cent. Forty cents per can is the price paid for milk sold at wholesale, while the retail price received is 6 cents per quart, which are about the same as a year ago. Pasturage is in 80 per cent condition and needs rain. The fruit outlook is: apples and pears, 50; peaches, 10; strawberries, 50; currants, 25; raspberries, 50; blackberries, 75.

Maynard (L. H. MAYNARD).—Tent caterpillars have done the most damage in this section; cutworms and potato beetles are very numerous. Corn is backward, but its condition is 90; its acreage is 100. Farmers have started haying with an outlook for a 100 per cent crop. A normal acreage of early potatoes has been put in, and there will be a normal crop. In both yield and price early market-garden crops are normal, and the prospect for those not yet harvested is the same. Pasturage is in 100 per cent condition. The fruit outlook is: apples, 75; pears, 50; plums, 100; strawberries, 25; other small fruits, 100. We had a heavy frost the first of the month which practically killed the strawberry crop and was of great damage to early market-garden crops.

Marlborough (E. D. HOWE).—Tent caterpillars, brown-tail and gypsy moths, cutworms and potato beetles are doing the greatest amount of injury. The condition of Indian corn is 95. The amount planted is normal. Farmers have started in haying, with a prospect for a 99 per cent crop. The acreage of early potatoes is 100, and there is prospect for a 100 per cent crop. Early market-garden crops not yet harvested promise a 95 per cent yield. The dairy cow supply has fallen off 2 per cent. Milk is selling at 38 cents per can at wholesale and at 8 cents per quart retail. These prices prevailed a year ago. The condition of pastures is 100. The fruit outlook is: apples, 50; pears, 95; peaches, 50; plums, 100; strawberries, 90; gooseberries, 100; blackberries, 100. This is a better season for grass than last year.

Hopkinton (W. V. THOMPSON).—The insects that are working the most havoc are tent caterpillars, brown-tail moth and squash bugs. Indian corn is in 80 per cent condition, and the acreage is about 100. Haying has begun; the prospect is for a 90 per cent yield. Dairy cows continue in about the same supply, with about the same amount of milk produced. Milk is sold for 28 cents per can at the car, while the average retail price per quart is 7 cents. These prices are just the same as a year ago. Pastures are in fair condition, 80. The fruit outlook is: pears, strawberries, raspberries and blackberries, 100. The season started early, but crops are all of ten days late.

Newton (G. L. MARCY).—Potato beetles are proving the most injurious. Not much haying has been done; there is promise of an 80 per cent crop. The prospect is for a normal crop of early potatoes. Early market-garden crops germinated poorly; prices rule good. Those not yet harvested will yield 90. There is a falling off of 10 per cent of the supply of dairy cows, with a similar decrease in the production of milk, which sells from 40 to 50 cents per can wholesale and 9 cents per quart retail. These prices are the same as those realized a year ago. Pastures are in 100 per cent condition.

The fruit outlook is: pears, plums and strawberries, 100; blackberries and cranberries, limited.

Lincoln (C. S. WHEELER).—Tent caterpillars and brown-tail moths have done the most injury but are now gone. Both kinds of squash bugs are now busy. The condition of corn is 90; the acreage is 95. Very little haying has been done. The hay crop prospect is 95. With no change in the acreage of early potatoes, the promise is for a normal crop. In yield, market-garden crops are 80; in price, 100; those not yet harvested will give a 100 per cent yield. The supply of dairy cows has decreased 10 per cent, while the production of milk has fallen off in the same degree. The average net wholesale price per can received for milk is 39 cents, while this commodity brings 10 cents per quart at retail. These prices show no great change over those of a year ago. Pastures are in 100 per cent condition. The fruit outlook is: apples, 55; peaches, 50; strawberries, 75; currants, 70; gooseberries, 60; blackberries, 60.

Winchester (S. S. SYMMES).—The most troublesome insects are tent caterpillars, brown-tail moths and leopard moths. Grass is being cut, but there will not be over a 75 per cent crop. Grass roots have been winterkilled in many places. In yield, early market-garden crops are 75; in price, 100. Those not yet harvested promise only a 75 per cent crop. The ground is rather dry. There has been a decrease of 25 per cent in the supply of dairy cows, and the same decrease pertains to milk. The average net wholesale price of 50 cents per can is realized for milk, while 10 cents per quart is the average retail price. These prices are the same as a year ago. All milk raised is sold locally. Pasturage is in 50 per cent condition. The fruit outlook is: apples, 75; pears and peaches, 100; plums, 25; strawberries and currants, 50. On June 9 frost cut beans and tomato plants in places; the temperature was 38° F.

ESSEX COUNTY.

Methuen (FREDERICK A. RUSSELL).—Those insects proving most injurious are brown-tail moths, tent caterpillars, gypsy moths, asparagus beetles, forest bugs and potato beetles. Very little Indian corn is raised. The condition of sweet and ensilage corn is 100. Haying has not begun; the prospect offered is for a 75 per cent crop. A falling off of 20 per cent in the acreage of early potatoes is noticeable. The yield promised is 75 per cent of a normal. Early market-garden crops show a 100 per cent yield, and are getting a 110 per cent price. Those not yet harvested promise to be 100 per cent crops. Cows are in normal supply, as is milk. This product brings 38 cents per can wholesale and 8 cents per quart retail. The same prices prevailed a year ago. Pastures are in normal condition. The fruit outlook is: apples, 50; pears and peaches, 150; straw-

berries, 75. Market-garden crops, requiring hot weather, are not looking as well as usual, and late-sown cabbage is not germinating well on account of dry weather.

Merrimac (S. BIXBY SARGENT). — Gypsy moths are proving the most troublesome insects. The condition of Indian corn is 80; as compared with normal, there is a slight increase in acreage. Haying has begun and the prospect for the crop is 90. There is not much change in the acreage of early potatoes; the prospect for the crop is 100. The supply of dairy cows has decreased. The average net wholesale price for milk is 40 to 45 cents per can, and the retail price is 8 cents per quart. The condition of pastures is about the same as usual, not especially good, anyway. Pheasants have done considerable damage by pulling corn.

Groveland (A. S. LONGFELLOW). — Gypsy moths, potato bugs, onion maggots and cutworms are the most troublesome insects. Indian corn is in 95 per cent condition, while the acreage is normal. No haying has been done; there is a promise of an 80 per cent crop. The acreage of early potatoes has been decreased 25 per cent; the crop prospect is 90. As compared with one year ago, milk supply has decreased 10 per cent. Cans are selling for 37 cents wholesale, and the retail price is 8 cents per quart. The wholesale price is slightly lower than last year. The condition of pasturage is 75. The fruit outlook is: apples, 25; pears, 80; peaches and strawberries, 75; raspberries, 90.

Newbury (GEO. W. ADAMS). — The most injurious insects are the brown-tail moth, tent caterpillar and gypsy moth. The condition of corn is 80; the acreage is 105. Farmers have commenced haying, with a promise of an 85 to 90 per cent crop. The acreage of early potatoes has increased 10 per cent. There is a prospect for a normal crop. Early market-garden crops have yielded 90 and have brought 100 per cent prices. There is a good prospect for those not yet harvested. There are apparently more dairy cows, but in reality there is a 5 per cent decrease. Milk production has fallen off 10 per cent; the supply of cream is about the same, with a slight decrease in the production of butter. Milk prices average higher than a year ago. Pastures are in 90 to 100 per cent condition. The fruit outlook is: apples, 100; pears, 80; peaches, 100; plums, 90; strawberries, 90; other small fruits, 100. It is impossible to get at the prices on milk, as hardly any two producers sell under the same conditions. Local prices vary from 6 to 8 cents per quart. A little wholesaled at Boston contractors' prices.

Topsfield (B. P. PIKE). — Gypsy and brown-tail moths and potato beetles appear to be producing the greatest havoc. In both condition and acreage Indian corn is 100. Haying has begun, with an 80 per cent crop prospect. There is an average acreage of early

potatoes; the prospect is for a 100 per cent crop. Market-garden crops have yielded normally and sold at normal prices; those not yet harvested promise 100 per cent yield. The supply of dairy cows has decreased 10 per cent, as has milk production. This commodity wholesales for 38 cents per can, which is the price received one year ago. Pastures are in 90 per cent condition. The fruit outlook is: apples and pears, 80; peaches, 100; strawberries, 80; blackberries, 100.

Hamilton (GEO. R. DODGE). — Cutworms, potato beetles and rose chafers are proving to be the most injurious insects. The condition of corn is 75; its acreage is 100. No haying has been done; the prospect is for an 85 per cent crop. Late potatoes show an acreage of about 85 per cent. In yield, early market-garden crops are 90; in price, 100. Those not yet harvested promise 80. The supply of dairy cows is the same as one year ago, and milk production has remained the same. The price per can received for milk is 45 cents; the retail price is 9 cents, which prices prevailed last year. Pastures are in about 85 per cent condition. The fruit outlook is: apples, 25; pears, 75; peaches, 50; plums, 10; strawberries, 50; currants and gooseberries, 75; raspberries, 80; blackberries, 95.

NORFOLK COUNTY.

Dover (LEWIS B. PAINE). — The worst insect pest is the cutworm. The condition of corn is 75; the acreage is 100. Haying has begun, with a prospect of 50 per cent on old land and 80 per cent on new seeded fields. Early potatoes offer a 100 per cent prospect. Early market-garden crops have yielded 80, with prices ruling about as usual. All market-garden crops not harvested are growing well and promise a 90 per cent yield. Dairy cows have decreased 10 per cent in the last year and there has been a similar reduction in the production of milk. This product wholesales for 34 cents per can and retails at 9 cents per quart. The wholesale price is 1 to 2 cents higher than last year. Pasturage is in 60 per cent condition. The fruit outlook is: apples, pears and peaches, 50; strawberries, 75; currants, 60; raspberries and blackberries, 80.

Norwood (FRANK A. FALES). — The most troublesome insect pests are the brown-tail moths, cutworms and potato beetles. Indian corn is looking well, with an acreage of 90. Haying has begun with promise for an 80 per cent crop. The early potato acreage is 20 per cent below normal; the promise is for a 75 per cent yield. Early market-garden crops have produced 60 per cent and sold at 90. Those not harvested will be 85 per cent crops. As compared with a year ago, dairy cows are 15 per cent less in supply. A corresponding decrease is noted in milk. The wholesale price received for milk is 42 cents per can, while the average retail price is 9 cents

per quart. These prices show increases of 2 cents per can and 1 cent per quart. Pasturage is in 75 per cent condition. The fruit outlook is: apples, 75; pears, 50; strawberries, 80; currants, 90. The hay crop on old land was injured by the dry spell in 1912. The season is two to three weeks late on account of the cold, wet spring.

Wrentham (JEREMIAH A. COBB). — On trees the elm-leaf beetle is doing the most damage, while crops are suffering principally from the cutworms and Colorado beetle. Indian corn is late, just coming up; the acreage is normal. Haying was begun from a week to ten days earlier than usual; the prospect offered is for a 100 per cent crop. In family gardens potatoes are looking well. Dairy cows continue in the same supply, and milk and cream have not changed within the past year. Milk wholesales for 38 to 40 cents per can, while the retailers get 8 cents per quart. These prices are the same as last year. Condition of pastures is 100. The fruit outlook is: apples, 75 to 80; pears, 100 to 125; peaches, 300 to 400, — best in years: plums, 25 to 35; strawberries, 75; currants, 100; gooseberries were frozen and there are none; raspberries and blackberries, 100. The season is two weeks late for cultivated crops, but the hay crop is early.

Foxborough (WM. E. PERKINS). — The condition of corn is 75. The acreage is 80. Haying has commenced, with an 80 per cent prospect. The original number of cows is kept. Milk wholesales for 45 cents per can and retails for 8 cents per quart, which prices are the same as last year. Pastures are in normal condition. The fruit outlook is: apples, pears and peaches, 100; plums, 50; strawberries, 75; other small fruits, 100. The spring has been rather cold and backward and crops are not up to the normal. An unusual number of cutworms have damaged garden crops in most places.

Cohasset (ELLERY C. BATES). — The worst insect pest this season has been the tent caterpillar. Haying has begun, and that cut indicates a 75 to 85 per cent crop. The acreage of and prospect for early potatoes are 100. In both yield and price early market-garden crops are 100, while a normal prospect is offered for those not harvested. Dairy cows, milk and cream are in normal supply. Milk brings 45 cents per can at wholesale and 8 to 10 cents per quart retail, which are the normal prices. Pastures are in 100 per cent condition. The fruit outlook is: apples, pears and strawberries, 50.

BRISTOL COUNTY.

Mansfield (E. JASPER FISHER). — Cutworms and potato beetles seem to be doing the greatest amount of damage. The Indian corn acreage has been decreased 25 per cent, while the crop is in only 70 per cent condition. Very little haying has been done as yet;

there is promise for a 75 per cent crop. The prospect for the very few early potatoes raised is 90. Early market-garden crops have yielded 85 per cent, and the prices are good. Those not yet harvested promise 90 per cent crops. Cows are in about the same supply as last year. Milk brings 45 cents per can wholesale, and 8 cents per quart retail, which are about the same, practically, as a year ago. Pastures are in 75 per cent condition. The fruit outlook is: apples, 70; pears, 80; plums, a failure; strawberries, 75; raspberries, 90; blackberries, 100; cranberries, 90. Some frost was reported but no damage.

Attleborough (ISAAC ALGER). — The most troublesome insects are the potato beetles. The condition of corn is 90; the acreage is 100. Haying has not begun; prospect is for 95 per cent of a normal crop. The early potato crop prospect is 85. Early market-garden crops have yielded 100, while those not harvested promise a normal yield. The supply of cows and the production of milk continue normal. The wholesale price per can for milk is 50 cents per 10 quarts; the retail price ranges from 7 to 9 cents. The fruit outlook is: apples, 85; pears, 100; strawberries, 110; cranberries, 100. At the farm we get 60 cents per 10-quart can of milk.

Rehoboth (HAROLD A. GOFF). — Cutworms and potato bugs are doing the most insect injury at present. Indian corn condition is 100; acreage shows a 5 per cent increase. Haying has begun, with a promise of a 70 per cent crop. The early potato acreage has been increased 10 per cent. The crop offers a 95 per cent promise. Early market-garden crops have yielded 100, and good prices have prevailed; those still growing promise 95 per cent yields. The dairy cow supply has decreased 5 per cent, and milk production has fallen off 10 per cent. The wholesale price received for milk per can of 8 quarts is 50 cents, while the retail price is 8 and 9 cents. These are about the same prices as ruled a year ago. The condition of pastures is 80. We have had many hard winds which blew a lot of fruit from the trees.

Swansea (F. G. ARNOLD). — Tent caterpillars have raised the most havoc. In both condition and acreage Indian corn is normal. Farmers have commenced haying, with the prospect of taking off a 75 per cent crop. The acreage of early potatoes has decreased 25 per cent; the crop prospect is 90. In yield, early market-garden crops have been 100 and in price, 90; those not yet harvested promise 80 per cent crops. The supply of cows has fallen off 10 per cent, but milk production continues the same as one year ago. This commodity wholesales for 44 cents per can and retails for 9 cents per quart. These prices show advances of 4 cents per can and 1 cent per quart over those of one year ago. Pastures are in normal condition. The fruit outlook is: apples, 50; pears, 75; peaches and strawberries, 80.

Acushnet (M. S. DOUGLAS). — The most troublesome insects are the potato beetles and cutworms. Indian corn is in 50 per cent condition, with a normal acreage planted. Haying has begun, and the promise is for a 75 per cent crop. Early potatoes show an acreage increase of 25 per cent, and offer a crop prospect of 80. Early market-garden crops have furnished a normal yield and brought 90 per cent prices; those not harvested promise an 80 per cent yield. Dairy cows are in the same supply as last year and milk and cream production have increased 5 per cent. Milk is wholesaled for 51 cents per can and retails for 8 cents per quart, which prices are the same as last year. Pasturage is in 100 per cent condition. Fruit outlook is: apples and pears, 75; peaches, strawberries, raspberries and blackberries, 100. There was frost on June 10.

Fairhaven (D. W. DEANE). — The most troublesome insects are the cutworms and striped beetles. Indian corn is in 90 per cent condition; its acreage is 85. Haying has begun with the prospect of a 60 per cent crop. The early potato acreage is 80 and the prospect is the same. Early market-garden crops show an 85 per cent yield, with prices 10 per cent off; those still growing promise to yield 95 per cent. The dairy cow supply and milk production have increased 10 per cent over one year ago. Cream and butter are in normal supply. Milk at wholesale brings 50 cents per can, while the retail price is 8 cents per quart. These prices are the same as last year. Pasturage is in 90 per cent condition. The plum outlook is 90. In fact, the outlook for all fruits is good, but they are so late in blooming that the prospect for the set cannot be estimated.

PLYMOUTH COUNTY.

Brockton (DAVIS COPELAND). — Green cabbage worms, cutworms, cucumber beetles and rose bugs are the insects which are proving most injurious. The condition of corn is 80; the acreage is 100. Little haying has been done as yet; the prospect is 75. The acreage of early potatoes is 100, and the prospect is for a normal crop. Early market-garden crops have yielded 75, and there is promise that those not harvested will give the same yield. The dairy cow supply shows a falling off of 10 per cent. Milk wholesales for 45 cents per can. The condition of pasturage is 75. The outlook for apples, pears, peaches, strawberries and blackberries is 100.

Norwell (HENRY A. TURNER). — The most troublesome insects are tent caterpillars, cutworms and brown-tail moths. Haying has begun; hardly enough has been cut for one to form an estimate. Early potatoes are late, but are coming up at last. Strawberries are bringing more than the usual price. Dairy cows are in about the same supply as last year. Milk brings 8 cents per quart retail, which is a slight rise over last year. The condition of pasturage

is 90. The fruit outlook is: apples, 50; pears and peaches, 75; plums, 50; strawberries, 100. Crops have suffered from frost, but very little.

Hanover (HARRISON L. HOUSE). — Tent caterpillars, cutworms and potato beetles seem to be the most injurious insect pests. The condition and acreage of corn is 100. Haying has hardly begun; there is promise of an 85 per cent crop. The early potato acreage is normal, with the prospect of a 90 per cent yield. Compared with normal, early market-garden crops are 100 in both yield and price, and those not harvested offer the same prospect. Dairy cows remain in the same supply, and production of milk, cream and butter has not changed from last year. The average retail price per quart for milk is 8 cents, which is the same as one year ago. No dairy farms in this town wholesale milk. The condition of pasturage is 90. The fruit outlook is: apples, 50; pears, 100; peaches, strawberries and currants, 75; cranberries, 100.

Marshfield (L. C. BARTLETT). — The most injurious insects are the cutworms and tent caterpillars. The condition and acreage of corn is 100. Haying has begun, with the prospect for a normal crop. There is a normal acreage of early potatoes, and a prospect for a 100 per cent crop. Early market-garden crops have yielded 100 per cent, and it is expected that those not harvested will yield likewise. The dairy cow supply and milk production continue normal. Milk sells at retail for 8 cents per quart, the same as last year. The condition of pasturage is 100. The fruit outlook is: apples, 100; pears, 50; peaches, 100; plums, 50; strawberries, 100.

Plympton (WINTHROP FILLEBROWN). — The most damage by insect pests is being done by tent caterpillars, potato bugs and gypsy and brown-tail moths. The condition of Indian corn is 90; the acreage is 110. Farmers have begun cutting hay; the crop will be about 80 per cent. There is a normal acreage of early potatoes. Early market-garden crops have yielded 105 and have sold for 100. Those still in the ground will furnish normal crops. The dairy cow supply and milk production are normal. Milk wholesales for 45 cents per can and retails at 9 cents per quart, which is 1 cent higher than one year ago. The condition of pastures is 105. The fruit outlook is: apples, 95; pears, peaches, plums, strawberries, currants, blackberries, raspberries and cranberries, 100; gooseberries, 90. Frosts on June 9 and 10 did some damage.

Carver (J. A. VAUGHAN). — Most insect damage is being done by the tent caterpillars and currant worms. The condition of corn is 100; the acreage is 75. No haying has been done as yet; the prospect is for a normal crop. Early market-garden crops yielded 75 and realized normal prices. The condition of pasturage is 75. The fruit outlook is: apples and pears, 75; plums, 50; strawberries, 75; currants, 50; gooseberries, 75; cranberries, 100.

Wareham (A. B. SAVARY).—Tent caterpillars are about the only ones that are doing much harm. Indian corn is in 90 per cent condition with a normal acreage planted. Haying has begun, with the prospect for a 75 per cent crop. The early potato crop prospect is 100. Normal crops and prices prevail in the case of early market-garden truck, and that not harvested promises a normal yield. Milk retails at 10 cents per quart, there being no change from last year. Pastures are in 100 per cent condition. The fruit outlook is: apples, 60; pears, 100; peaches, 90; plums, 80; strawberries and currants, 100; gooseberries, 90; raspberries, blackberries and cranberries, 100.

BARNSTABLE COUNTY.

Bourne (ROBERT S. HANDY).—The forest tent caterpillar, the common tent caterpillar, cranberry fireworm, cutworm and maggot prove to be doing the most injury. In both condition and acreage Indian corn is 100. Haying has begun, with the prospect for a 60 per cent crop. The acreage of early potatoes is 150, with a 75 per cent prospect. Early market-garden crops have yielded normally and have brought normal prices, while those not harvested promise 100 per cent crops. Dairy cows are in normal supply. Milk sells at retail for 10 cents per quart, which is the same price as last year. Condition of pasture is 60. The fruit outlook is: strawberries, 90; cranberries, 75. On June 9 frost with a bog temperature of 26° damaged cranberries 50 per cent.

Sandwich (HENRY F. HOXIE).—The most injurious insects are the potato beetle, cutworm and the cranberry fireworm. The condition and acreage of corn is 100. Farmers have begun haying with an 80 per cent prospect. A normal acreage of early potatoes has been planted, and a normal crop is promised. In yield, early market-garden crops have been 110, with prices, 100; those still growing promise normal yields. The supply of dairy cows has increased 10 per cent, and milk production in the same degree. The wholesale price realized for milk is 45 cents per can. The retail price is 7 cents per quart, just the same as last year. Pasturage is in 90 per cent condition. The fruit outlook is: apples and pears, 100; peaches, 75; plums, strawberries, currants, gooseberries and raspberries, 100; cranberries, 110. The hay crop was evidently damaged by a dry spell here when the grass was getting started. Pasturage is light for want of rain.

Dennis (JOSHUA CROWELL).—The most troublesome insects seem to be the common and forest tent caterpillars. Condition of corn is 90; acreage is 95. Farmers have begun haying, with the prospect for a 75 per cent crop. The early potato acreage has been slightly increased. There is a prospect for an 85 per cent crop. Early market-garden crops have yielded 80 and sold for 100. The pros-

pect for those still growing is 90. The dairy cow supply has fallen off 20 per cent, while milk and cream production has decreased 10 per cent. Milk brings 7 cents per quart retail, just the same as last year. Condition of pastures is 90. Fruit outlook is: apples, 60; strawberries, 75; cranberries, looking well. Some frosts occurred in early June, but did not do much damage.

Truro (JOHN B. DYER). — The most damage by insect pests is being done by tent caterpillars, brown-tail moths and cutworms. In both condition and acreage Indian corn is 100. No haying has been done so far; the prospect is for a 100 per cent crop. The early potato acreage is 100, and the crop will be normal. Compared with normal, early market-garden crops are 100 in both yield and price, and the same may be said of those not harvested. The dairy cow and dairy product supply continues normal. Milk brings 40 cents per can wholesale and 6 cents per quart retail, about the same as last year. The condition of pastures is 125. The fruit outlook is: apples and pears, 100; peaches, 125; small fruits, 100. Some slight frosts have occurred with no particular damage.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — The insects proving most injurious are potato beetle and tent caterpillar. Condition of corn is 90; the acreage, 100. Haying has begun, with the crop prospect of 75. A normal acreage of early potatoes has been planted; the crop prospect is 75. Early market-garden crops not harvested promise 100. The dairy cow supply is 75 as compared with one year ago. Milk production has increased 10 per cent; 8 cents per quart is the retail price paid for milk, about the same as last year. Condition of pasturage is 100. The fruit outlook is: apples and pears, 50; peaches, 10; strawberries and blackberries, 100; cranberries, 75. The season started very early with us, then came cold and dry weather, injuring the fruit bloom and setting back the growth of all vegetation, so that we have old meadow hay that is ripe, while timothy is backward.

NANTUCKET COUNTY.

Nantucket (H. G. WORTH). — The most injurious insect pests are potato bugs and cutworms. The condition and acreage of Indian corn are 100. Farmers have started cutting hay, with the crop prospect of 60. The early potato acreage and crop prospect are 100. Early market-garden crops have yielded normal and have brought 100 per cent prices. The same may be said of those not harvested. The dairy cow supply and milk have fallen off 10 per cent. This product retails for 9 cents per quart. This is the same price as paid a year ago. Pasturage is in 90 per cent condition. The fruit outlook is: strawberries, 90; cranberries, 100.

SUMMARY OF FRUIT CROP CONDITIONS.

In the circular to fruit crop correspondents, returnable June 27, the following questions were asked:—

1. Have frosts done noticeable damage to the following fruit crops (give dates and per cent of damage)? Apples, pears, peaches, plums, cherries, small fruits.

2. Have tree fruits set well (give per cent of blossoms set, if possible)? Has there been much drop?

3. What are the prospects for the following crops? Apple, pear, peach, plum, cherry, currant, raspberry, blackberry, blueberry.

4. What methods of cultivation are practiced in orchards in your vicinity? (*a*) Sod mulch (state whether grass is cut and removed or left on ground)? (*b*) Clean culture? (*c*) Are legumes, such as clover, cow peas, vetch or alfalfa, planted in orchards as cover crops? If not, what cover crops are used?

5. What insects are doing most damage in orchards?

6. Has fire blight appeared in any orchards?

7. To what extent was the strawberry crop injured by frost?

8. Have prices of strawberries been satisfactory? Compare with average. Compare with 1912.

9. Is summer spraying for sooty fungus or other fruit diseases practiced at all in your vicinity?

Returns were received from 67 correspondents, and from them the following summary was compiled:—

FROST DAMAGE.

A larger number of reports upon the frost damage to fruit crops would have been productive of more accurate deductions; the following table will, however, give a reasonably correct idea of this damage. It will be noticed that plums,

pears and apples were the heaviest sufferers for the State as a whole. The counties of the State, ranking them in order of greatest damage done to all fruits, were as follows: Berkshire, Hampden, Franklin, Bristol, Norfolk, Middlesex, Hampshire, Worcester and Essex equal, Barnstable and Plymouth. There were no reports on fruits from Dukes and Nantucket counties.

Damage of Fruits by Counties (Per Cent).

| COUNTY. | Apples. | Pears. | Peaches. | Plums. | Cherries. | Small Fruits. |
|---------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Berkshire, | 60.0 ¹ | 55.0 ¹ | - ² | 63.5 ¹ | 10.0 ³ | 5.0 ¹ |
| Franklin, | 27.8 | 30.7 | 41.6 | 27.1 | 45.7 | 32.8 |
| Hampshire, | 31.2 | 12.5 | 61.0 ¹ | 38.0 | - ¹ | 50.0 ¹ |
| Hampden, | 27.0 | 26.2 | 60.0 | 50.0 ¹ | 37.5 ¹ | 11.6 |
| Worcester, | 10.0 | 4.0 | 11.0 | 11.0 | 3.8 | 17.0 |
| Middlesex, | 21.9 | 16.5 | 21.8 | 39.5 | 19.5 | 21.2 |
| Essex, | 8.7 | 7.1 | 14.2 | 25.0 | - | 1.4 |
| Norfolk, | 25.0 ³ | 25.0 ³ | - ² | 25.0 ³ | 25.0 ³ | - ² |
| Bristol, | - ³ | - ³ | 50.0 ³ | 85.0 ³ | - ³ | 25.0 ³ |
| Plymouth, | 8.2 | - | 3.3 ¹ | 16.6 | - | - |
| Barnstable, | - ³ | - ³ | - ³ | 50.0 ¹ | - ³ | - ³ |
| STATE, | 20.2 | 15.6 | 24.9 | 32.7 | 16.0 | 16.0 |

¹ Two reports.

² No report.

³ One report.

TREE FRUITS, SET AND DROP.

For the State as a whole the returns indicate that the set of tree fruits was 57.7 per cent of the bloom. Frosts in Berkshire County were evidently very injurious, although the small number of reports from this county detract somewhat from the value of the deductions. The figures at hand give the per cent of blossoms which formed fruit in comparison with total bloom as follows: Barnstable, 75; Hampshire, 75; Plymouth, 71.6; Hampden, 62.5; Essex, 60; Middlesex, 57.6; Franklin, 56.2; Bristol, 50; Worcester, 47.5; Norfolk, 25; Berkshire, 5. In general, the drop has been fully an average, although many reported it as just beginning. This is doubtless due to the drought, which is now becoming felt, although frost injury caused considerable

drop. It is worthy of note that several correspondents mentioned the fact that where orchards were sprayed the drop was much lighter. In Hampden, Worcester, Norfolk and Plymouth counties the drop was rather heavy; in Berkshire, Franklin, Hampshire and Essex about average; in Middlesex, Bristol and Barnstable it was lighter than usual.

FRUIT PROSPECT.

The following table, compiled from the returns of special fruit correspondents and general correspondents combined, gives a fairly complete and accurate idea of the prospect for the different crops at the present time (100 per cent represents a normal crop):—

| | Berkshire. | Franklin. | Hampshire. | Hampden. | Worcester. | Middlesex. | Essex. | Norfolk. | Bristol. | Plymouth. | Barnstable. | Dukes. | Nantucket. | STATE. |
|-------------------------|-------------------|-------------------|-------------------|--------------------|------------|------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|
| Apples, | 40.5 | 62.9 | 68.0 | 63.8 | 62.2 | 61.5 | 58.3 | 69.7 | 74.5 | 72.7 | 80.0 | 50.0 ¹ | - ² | 64.01 |
| Pears, | 40.0 | 78.5 | 78.5 | 68.6 | 85.5 | 78.4 | 84.4 | 69.7 | 69.7 | 84.0 | 100.0 ³ | 50.0 ¹ | - ² | 77.03 |
| Peaches, | 30.0 ¹ | 67.2 | 67.5 | 43.5 | 45.6 | 55.7 | 87.2 | 140.0 | 86.8 | 89.0 | 66.7 ³ | 10.0 | - ² | 70.06 |
| Plums, | 25.0 | 69.1 | 76.3 | 46.3 | 38.2 | 66.1 | 79.0 | 52.6 | 55.0 ³ | 75.7 | 100.0 ³ | - ² | - ² | 60.40 |
| Cherries, | 35.0 | 85.0 | 100.0 | 37.5 | 68.1 | 87.5 | 91.6 | 75.0 | 75.0 ¹ | 95.0 ³ | - ² | - ² | - ² | - |
| Strawberries, | 33.8 | 58.1 | 73.0 | 57.1 | 68.0 | 69.6 | 75.0 | 75.8 | 88.8 | 88.7 | 90.0 | 100.0 ¹ | 90.0 ¹ | 81.40 |
| Currants, | 67.1 | 90.0 | 87.6 | 93.3 | 85.0 | 72.5 | 81.3 | 87.5 | 85.0 | 82.5 | 100.0 ³ | - ² | - ² | 72.70 |
| Gooseberries, | 60.0 | - | - | 75.0 | 100.0 | 80.8 | 75.0 | 100.0 | 100.0 | 85.0 | 100.0 ³ | - ² | - ² | 84.70 |
| Raspberries, | 75.5 | 72.7 ^b | 86.7 | 91.9 | 86.6 | 81.8 | 94.0 | 91.3 | 90.0 | 95.0 | 100.0 ³ | - ² | - ² | 85.80 |
| Blackberries, | 90.0 | 91.0 | 85.0 | 98.3 | 93.6 | 84.2 | 95.8 | 91.3 | 98.3 | 100.0 | 100.0 ¹ | 100.0 ¹ | - ² | 91.50 |
| Cranberries, | - | - | - | 100.0 | 80.0 | 77.5 | - | - | 88.3 | 100.0 | 89.0 | 75.0 ¹ | 100.0 ¹ | 89.40 |
| Blueberries, | - ² | 80.0 ¹ | 57.0 ³ | 100.0 ¹ | 86.0 | 71.6 | 87.5 ³ | 100.0 ¹ | 100.0 ¹ | 100.0 ³ | - ² | - ² | - ² | 84.10 |

¹ One report.² No report.³ Two reports.

ORCHARD PRACTICE.

The replies to this question are quite interesting, denoting as they do the spreading interest in and application of modern methods of orchard practice. There is still much to be done, however, in educating the growers along this line, for by far the larger number of correspondents reported that nearly all orchards in their vicinity were kept in grass and hay removed. It is high time that every fruit grower realized that both a satisfactory crop of fruit and a good hay crop cannot be taken from the same piece of ground, especially when the amount of plant food supplied is in many cases insufficient even for one. A few reported that the grass was cut and used as mulch. Some reported this practice for old orchards and clean culture for new ones. Some reported clean culture in young orchards only, in most instances, and quite a number gave this method as the prevailing one in all orchards in their vicinity, calling attention to the fact that this was the method employed by the growers who produced the best fruit. Some report the growing of strawberries or market-garden crops in orchards as the prevailing practice. The use of legumes, especially crimson clover and vetch, is quite widespread, although a number report that they are not used at all. Non-leguminous cover crops in more or less general use are rye, buckwheat and oats, used in connection with crimson clover to some extent, while many growers the latter part of the summer simply let the grass and weeds grow in the orchard.

INSECTS.

Several correspondents, replying to this question, called attention to the fact that the damage by insects was very small where proper spraying was practiced. The study and application of this preventive measure would mean many dollars in the pockets of those of our fruit growers who now pay little attention to insect pests until it is too late to prevent their ravages. In Berkshire County the tent caterpillar, codling moth and San José scale were reported as injurious; in Franklin, the codling moth, curculio, tent caterpillar and railroad worm were reported in the order named; Hamp-

shire, the railroad worm, tent caterpillar, codling moth, scale and canker worm; Hampden, codling moth, curculio, scale, tent caterpillar, borers and aphids; Worcester, tent caterpillar, brown-tail, codling moth, gypsy, curculio and scale, while borers and aphids were referred to; Middlesex, gypsy, brown-tail and tent; Bristol, Plymouth and Barnstable reported the tent and the brown-tail, with one report of aphids in the latter. The work of the tent caterpillar has been appalling this year but is now about over; farmers and fruit growers will do well to heed the warning, and before another season clean out all wild cherry trees and then spray their orchards at the proper time.

FIRE BLIGHT.

Many correspondents stated that they were not familiar with this disease. The reports indicate that it is not especially prevalent. One report in Franklin County stated that it had appeared to some extent; Hampshire, 2; Hampden, 1; Worcester, 5; Middlesex, 3; Essex, 3; Plymouth, 2. All others either reported that it had not appeared or that they were not familiar with it.

STRAWBERRIES, FROST INJURY.

At the time of the last report it was difficult to estimate just what the frost damage to the strawberry crop had been. The replies this month indicate that this damage was as follows: Franklin, 66; Norfolk (one report), 50; Berkshire (two reports), 47.5; Hampden, 45; Hampshire, 41.6; Worcester, 40.5; Bristol (one report), 25; Middlesex, 24.2; Essex, 12.1; Plymouth, 3.3; Barnstable (two reports), none; the State, 31.6.

STRAWBERRY PRICES.

Prices for strawberries have been very satisfactory this year, nearly every report stating that they were higher, and a number that they were way above the average run of prices. The reports from Berkshire County stated that at time of reporting it was too early to give prices as the crop had not yet been harvested. Figures received indicate that prices as

a whole have been about 20 per cent higher this season than in 1912, berries which sold for from 15 to 20 cents last year bringing from 17 to 25 cents this year.

SUMMER SPRAYING.

The replies to the question as to the extent of summer spraying for sooty fungus and other fruit diseases revealed practically the same facts as were brought out in relation to orchard cultivation, namely, that the majority of fruit growers do not as yet realize the value of the results secured by this practice. Some reported that there was "no time and labor was high;" others reported "to a limited extent." The indications are, however, that although comparatively few growers now spray for these diseases during the summer, the practice is growing in favor as its results are demonstrated by the few, and it will eventually receive the attention it deserves.

NOTES OF FRUIT CROP CORRESPONDENTS.

[Returned to us June 26.]

BERKSHIRE COUNTY.

Richmond (HENRY J. LAMKE).—Frost has damaged fruits as follows: apples, 80; pears, 90; plums, 50; small fruits, normal, except strawberries, which were damaged 75 per cent. Five per cent of the blossoms on tree fruits have set: there has been very little drop as there was not much to drop. Fruit crop prospect: apple, 25; pear, 10; plum, 25; currant, 100; raspberry, 100; blackberry, 100. Grass is removed from the orchard whenever there is enough to pay for cutting. Fire blight is doing some damage. The strawberry crop was damaged 75 per cent by frosts; there are very few strawberries raised for market. There is very little spraying done, as nobody has the time and labor is high.

North Egremont (R. HENRY RACE).—Frost has damaged the different crops as follows: apples, 90; pears, 50; peaches, 100; plums, 100; cherries, 100; strawberries, 50. Tree fruits did not set well; there has been no fruit to drop. Crop prospect: apple, total loss; pear, 50; peach, plum and cherry, practically a total loss; currant, 100; raspberry, 100; blackberry, 100; blueberry, very serious damage. The best orchards are cultivated; some are in sod; clean culture is practiced in a few orchards, but most of the orchards are neglected; legumes are used more or less as cover crops. San José

scale is doing most damage; some fire blight has appeared. Strawberry prices have been very satisfactory, 20 per cent higher than in 1912. No summer spraying practiced.

FRANKLIN COUNTY.

Conway (ALVAH J. NORMAN).—Frost has damaged fruits as follows: peaches, 25; cherries, 70. Fifty per cent of the blossoms on tree fruits have set, and the drop has not been very heavy. Fruit crop prospect: apple, good; pear, good; peach, fair; plum, good; cherry, slight; currant, good; raspberry, good; blackberry, good. Hay is removed from orchards; very little clean culture practiced; legumes are not planted to any extent. The curculio is doing the most damage; no noticeable fire blight has appeared. Strawberry crop was injured very slightly by frosts. Spraying for sooty fungus and other fruit diseases is practiced very little. This is a splendid fruit section and considerable is grown, but the Lord raises it.

Leyden (C. F. SEVERANCE).—There has been no noticeable damage by frosts. Fruit tree blossoms set well, and there was not much drop. Fruit crop prospect: apple, 80; pear, 100; peach, 90; plum, 75; blackberry, 100; cherry, 100; currant, 100; raspberry, 75. Grass is removed from the orchards; some clean culture is practiced, and legumes are planted to some extent. The codling moth is doing the most damage; fire blight, to some extent, appeared in orchards. About 50 per cent of the strawberry crop was damaged by frosts; prices have been very satisfactory. Some spraying for fruit diseases is being practiced.

Orange (A. C. WAKEFIELD).—Frost has damaged fruits as follows: apples, 50; pears, 40; peaches, 50; plums, 90 per cent on hills, none on low lands; cherries, 50; raspberries and blackberries, 100; there are a few strawberries left. Fruit trees set well on high lands; none set in valleys; there was a 40 per cent drop. Fruit crop prospect: apple, 35; pear, 45; peach, 40; plum, 100 on high lands; cherry, 40; not many currants raised here; raspberries and blackberries promise a full crop. Am sorry to say mostly sod is used for cultivation; grass is removed from most orchards; clean culture is practiced in a few orchards; legumes are not much planted, but buckwheat, some weeds and a little clover are used as cover crops. The codling moth, curculio and maggot are the most troublesome insects. The frost damage to strawberries was severe; in fact, there are but few strawberries left; prices quite satisfactory—12½ cents average; prices in 1912, 15 to 17 cents per box; 1913, 20 to 25 cents per box. Very little spraying is being practiced for sooty fungus or other diseases. Peaches are all set here on high ground, so percentage of set is better than some other fruits.

HAMPSHIRE COUNTY.

Prescott (E. T. WHEELER). — Frost damaged fruits as follows: apples and pears, 25; plums, 75; small fruits, 50. One hundred per cent of the blossoms on tree fruits have set, and there has been a 25 per cent drop. Fruit crop prospect: apple, 75; pear, 75; plum, 25; currant, 100; blackberry, 100; blueberry, 25. Grass is removed from orchards; legumes are not planted, grass sod being used for cover crops. The codling moth is doing the most damage; fire blight has not appeared in orchards. Strawberries not raised in this vicinity. Summer spraying is not being practiced.

South Amherst (W. H. ATKINS). — Pears and peaches on high grounds were not damaged by frosts; apples suffered a 50 per cent damage; strawberries, 25. Fruit crop prospect: apple, 25; pear, 100; peach, 100. Orchards are cultivated either entirely or in strips. Fifty per cent of the cover crops planted are legumes; weeds and grasses are also used. San José scale is doing the most damage; no fire blight has appeared. Twenty-five per cent of the strawberry crop was damaged by frost; prices have been satisfactory. Spraying is not being practiced.

Cummington (C. M. CUDWORTH). — Frost damaged fruits as follows: apples, more than 50; peaches, 75; strawberries were very badly damaged, and a few plums suffered. Very few apple blossoms set, and there was not more than the usual drop. Fruit crop prospect: apple, 50; raspberry, 100; blackberry, 100; blueberry, 100; pears and currants promise an average crop; peaches a light crop. In most cases grass is cut and removed from orchards; very few legumes are planted, and in most cases crops stand in sod. Caterpillars and canker worms are doing the most damage; some fire blight has appeared in most all orchards. The crop of wild berries was ruined by frosts. Strawberries are selling a little higher than in 1912. There have been so many hard frosts this spring that it is difficult to give dates of most destructive.

HAMPDEN COUNTY.

West Springfield (ETHAN BROOKS). — No noticeable damage by frosts. Fifty per cent of tree fruit blossoms have set, and there has been no more than the usual drop. Fruit crop prospect: apple, 50; peach, 80; cherry, 50; currant, 80; raspberry, 100. In old orchards grass is left on the ground; clean culture is practiced in young orchards; legumes and rye are used as cover crops, being turned under when green. San José scale is causing the most serious injury; fire blight has not appeared. Early strawberry blossoms were cut by frosts, and in near-by districts the loss was serious on general crops; prices have been satisfactory. Spraying

for sooty fungus and other fruit diseases is practiced. On my own farm our small patch of strawberries was unusually fine; apples will be light.

Three Rivers (J. T. GEER). — Peaches and plums were wholly destroyed by frosts; apples, 50; cherries, 75; strawberries, 25; pears suffered no damage. Fruit crop prospect: apple, 50; pear, 100; cherry, 25; currant, 25; raspberry, 100; blackberry, 100. Usually grass is cut and removed from orchards; very little planting of legumes as cover crops is done. Tent caterpillars, codling moths and curculios are doing the most damage; fire blight has appeared in orchards. About 25 per cent of the strawberry crop was damaged by frost; prices from 15 to 20 cents per quart. Summer spraying for sooty fungus and other diseases is practiced. More orchards are being cultivated this year than ever before; people are finding out that it is impossible to raise good fruit without cultivating and thoroughly spraying their orchards. In some orchards the freeze was a great blessing, as it thinned the fruit just right.

Brimfield (E. S. BUTTERFIELD). — Frost damage to fruits is as follows: apples, slight, — 10 per cent; pears, 80; peaches, 80; plums, cherries and small fruits, some. Apples set well; peaches, pears and plums less than 10 per cent, except early peaches: there has been very little drop. Crop prospect: apple, 90; pear, 10; early peach, 25; late peach, 10; currant, 100; raspberry, 75; blackberry, 110; blueberry, 100. The common orchard practice is to keep them in sod, cutting and removing the grass; the best orchards are cultivated; legumes are used, but not very largely, rye and buckwheat being most in use. The codling moth and curculio are doing most damage; fire blight has not appeared, to my knowledge. The strawberry crop was injured by frost 50 per cent on low lands, 10 per cent on hills; there are very few raised commercially. The damage to fruit by the May frosts was uneven; on low ground in some places all blossoms were killed, while on hillsides, with good air drainage, scarcely any damage resulted.

WORCESTER COUNTY.

Lunenburg (H. O. MEAD). — Frost damage to fruits was as follows: apples, 20; pears, 10; peaches, 30; plums, 40; cherries, 10; small fruits, 20 to 40. In favorable locations tree fruits set well; there has not been much drop as yet. Crop prospect: apple, 50; pear, 85; peach, 40; plum, 40; cherry, 75; currant, 90; raspberry, 75; blackberry, 85. In a few orchards grass is cut and left on the ground; clean culture is practiced to a small extent; legumes are planted very little, rye to some extent, and buckwheat still more. The gypsy moth is doing most damage at present; I have seen no fire blight. The strawberry crop was injured 25 per cent by frost;

prices have been satisfactory, and a little higher than last year. Frost damage was confined largely to low lands, and very favorable locations suffered no loss from that cause.

North Dana (HORATIO B. EDDY).—Apples and pears set well, and there was some drop on apples. Fruit crop prospect: apple, 50; pear, 75; cherry, 10; currant and raspberry, 100. Cultivation has not been practiced; sod grass mowed and removed; legumes are not planted. The codling moth is doing the most damage; fire blight has appeared to some extent on pears. The frost injury to strawberries was 90 per cent; prices have been satisfactory. Spraying for sooty fungus is not being practiced.

Warren (A. N. TUTTLE).—Frosts injured peaches, plums and small fruits, but did not damage apples, pears or cherries. Tree fruits have set well; a large drop is now going on. Fruit crop prospects are: apple, 90 to 100; pear, 100; peach, 50; plum, 25 or less; cherry, 75; currant, raspberry and blueberry, very little damage. Where sod mulch is practiced the grass is left, but in most orchards the grass is taken off. Clean culture is practiced by the best growers; legumes are used to some extent, but in many instances the orchard is allowed to grow up to weeds. The curculio and codling moth are doing the most damage; we think that fire blight has appeared. The strawberry crop was injured badly by frosts, but prices have been very satisfactory, ranging about 18 cents per quart at wholesale, as against 15 cents in 1912. Summer spraying for sooty fungus and other diseases is practiced. It is difficult to estimate the crop prospect from the bloom, or what the fall may be, but it looks large on apples, especially, as there are enough left for a good crop; it is evidently a good year for fungus growths.

South Berlin (C. B. MAYNARD).—Peaches and strawberries suffered from frost in some localities. Tree fruits set fairly well and there has been very little drop. Fruit crop prospect: apple, light; pear, fair; peach, fair; cherry, fair; currant, raspberry and blackberry, good. The orchard practice usually is sod mulch, and the grass is usually cut and removed. Colonies of gypsy moths are most injurious. The strawberry crop was damaged 35 per cent by frost; prices have been satisfactory, better than last year. No summer spraying for sooty fungus is practiced.

Shrewsbury (CHAS. R. WEBB).—Fruits were damaged by frosts as follows: apples, 15; peaches, 20 to 25; small fruits, 10. Tree fruits set as follows: 40 to 60 per cent; there has been a 35 per cent drop. Fruit crop prospect: apple, fair; pear, good; peach, poor; plum, fair; cherry, currant, raspberry, blackberry and blueberry, good. Sod mulch is practiced in orchards, the grass being cut and removed in most cases; cover crops have not been used in this

town; they are just coming to it. Tent caterpillars are doing the most damage; no fire blight has come to my notice. Strawberries were not injured greatly, as a heavy crop is being picked; prices have been satisfactory, about the same as last year. No summer spraying is done.

Hopedale (HENRY L. PATRICK).—Peaches suffered from frost, but other fruits were not damaged. Tree fruits did not set well, and there has been considerable drop. Fruit prospect: apple, poor; pear, average; peach, poor; cherry, currant and raspberry, good; blackberry, extra good. Orchards are usually neglected; legumes are used very little as cover crops. Tent caterpillar has done the most damage. The strawberry crop was injured very little by frost; prices higher than average. No summer spraying for fruit diseases. In this immediate vicinity the apple crop will be very light.

MIDDLESEX COUNTY.

Townsend (A. A. SEAVER).—Frost has damaged fruits as follows: apples, 50; pears, 90; peaches, 60; plums, 30; cherries, 95; small fruits, 25. Eighty per cent of tree fruits set well, and there has not been much drop. Crop prospect: apple, pear, cherry, currant and raspberry, good; blackberry, fine; peach, fair; plum and blueberry, poor. Most grass is cut and taken away; no legumes are used as cover crops. The gypsy moth is the most troublesome insect; no fire blight has appeared. The strawberry crop was injured to some extent by frost, but the prices have been satisfactory; as compared with 1912, they were good. No spraying is practiced for sooty fungus.

Littleton (JOHN H. HARDY, JR.).—Frost damaged fruits as follows: plums and cherries, 90; small fruits, 50; apples and pears suffered no injury. Fifty per cent of tree fruits set well, and there has been considerable drop. Fruit crop prospect: apple, 60; pear, 75; peach, 70; raspberry, 60; blackberry and blueberry, 90. Grass is usually cut and removed from orchards; clean culture is generally practiced; a little clover is planted as cover crop, but usually grass and weeds are permitted to come up. The gypsy moth is doing most damage; blight, to a small extent, has appeared on Baldwin trees. Strawberry crop was injured 50 per cent by frost: the prices were better than the average, being 20 per cent higher than in 1912. Spraying for sooty fungus is being practiced to a small extent. One quite serious case of fire blight occurred in a small orchard of Clapp pears, here in town.

South Lincoln (JAMES E. BAKER).—Small fruits suffered from frosts, but other fruits were not damaged. About 75 per cent of tree fruits have set well. Fruit crop prospect: apple, 50; pear, cherry, blackberry and blueberry, 75; currant, 25. Clean culture

is practiced in about 50 per cent of the orchards, and legumes are planted in about the same amount, rye and vetch being used to some extent. San José scale and gypsy and brown-tail moths are doing the most damage. Frost injured about 50 per cent of the strawberry crop, but prices are about the same as one year ago. On May 10 the temperature was 23°; May 11, 32°; May 12, 29°; May 13, 35°; May 15, 31°.

Belmont (RICHARD HITTINGER).— Small fruits suffered from frosts, but other fruits were not damaged. Tree fruits set well, and there has been much drop. Crop prospect: apple, light; pear and peach, heavy; plum and currant, light; cherry, fair. Clean culture is the method practiced. The currant borer is the most troublesome insect now, others having been killed by spraying; fire blight has not appeared. Ten per cent of the strawberry crop was injured by frost; prices have been satisfactory, and were a little lower than a year ago. Spraying for sooty fungus is being practiced.

Marlborough (F. HOWARD BROWN).— No frost damage since last report. Tree fruits set well usually, and the drop was normal. Prospect good for all fruits except plums. In some cases grass is left as cut; in a few, it is hauled off; clean culture is being practiced more extensively than formerly; crimson clover, vetch, buckwheat and rye are being used as cover crops. The curculio is the most troublesome insect, and the gypsy moths are spreading; there has been no fire blight, but the seab and cedar rust are in evidence. The strawberry crop in this locality was not injured much by frost; prices have been above the average and were higher than last year. Personally, have finished fourth spraying, although summer spraying is not practiced much in this vicinity. If the dry weather continues, the yield is bound to be affected. In spite of dry season there seems to be an unusual amount of fungus about; no green aphid, but woolly aphid is in evidence.

Ashland (CLARK W. BROWN).— There has not been much drop. Fruit crop prospect: apple, small; pear, 75; cherry, 80; currant, 90; raspberry and blackberry, 100. The usual orchard practice is sod mulch, and the grass is generally removed. The ordinary apple worm is doing the most damage. Ten per cent of the strawberry crop was injured by frost; prices have been above the average,— 15 per cent above last year.

Hopkinton Springs (W. F. WHEELER).— Seventy-five per cent of small fruits suffered from frost, but other fruits were not damaged. A good average of tree fruits set well, and there was very little drop where spraying had been practiced. Fruit crop prospect: apple, 60; pear, 95; cherry, 95; raspberry, blackberry and blueberry, good. Grass is both removed and left on ground to some extent; in young orchards clean culture is practiced some; legumes

are not much planted; rye and buckwheat are used as cover crops to some extent, and crimson clover is gaining favor. The tent caterpillars, where not destroyed, are most troublesome. Frost damaged 25 per cent of the strawberry crop; the prices have been satisfactory, and were slightly less than those of one year ago. Spraying, to a limited extent, is practiced for sooty fungus and other diseases. The exceedingly heavy rains early in the month did more or less damage to crops in general. More interest is being manifested in crimson clover as a cover crop, nitrogen gatherer and soil improver for orchards; also in its value as an early spring fodder and for the honey bee.

ESSEX COUNTY.

Salisbury (HENRY C. RICH).—Frost damaged 75 per cent of plums; apples, pears and peaches, 50; cherries and small fruits, except strawberries, were not damaged. Sixty per cent of tree fruits set well, and there has been considerable drop. Fruit crop prospect: apple, pear and peach, light; currant, raspberry, blackberry and blueberry, good; cherry, fair; plum, poor. Grass is cut and removed from orchards; clean culture is practiced; no cover crops are used. The gypsy moth is doing the most damage; very little fire blight has appeared. Five per cent of the strawberry crop was injured by frost; prices have been satisfactory, being 1 cent higher per quart than in 1912. Summer spraying has not been practiced, but there is a possibility of its being done this season. Peach curl is more troublesome than usual. Unless we get immediate rains, fruit crops will suffer more than usual from drought, due to the insufficient precipitation during the early part of the season.

Methuen (M. F. NOYES).—There has been no noticeable frost damage to fruits. Tree fruits set well; drop has not been as much as usual in June. Fruit crop prospect: apple, good; pear, good; peach, fair; raspberry, good; blackberry, very good; blueberry, fair. Grass is cut and made into hay; legumes are not planted, and only ordinary grass, orchard grass and timothy hay are used as cover crops. The tent caterpillar and gypsy moth are the most troublesome insects; no fire blight has been noticed. The strawberry crop suffered no damage from frost; prices have been lower than usual, and dropped suddenly the first of this week. Peach crop of good quality: quantity less than usual. No plums, cherries or currants raised to any extent in this vicinity; blueberry crop started out well, but drought seemed to damage considerably.

North Andover (E. O. REYNOLDS).—Frost damaged fruits as follows: apples, 1; pears, none; peaches, 50; strawberries, 40. About 50 per cent of apple blossoms set, and there has been much drop. Crop prospect: apple and peach, poor; pear, plum, cherry and currant, good; blackberry and blueberry, very plentiful. Grass

is removed from the ground in nearly all cases; clean culture is practiced by the new men; clover is seldom used as a cover crop, grass being used as a mulch. The most damage is being done by the gypsy moth and San José scale. Forty per cent of the strawberry crop was damaged by frost; in my opinion, the prices of strawberries have been satisfactory. Summer spraying for sooty fungus is not being practiced.

Newbury (ELBRIDGE NOYES). — There has been no noticeable damage by frosts. The setting of tree fruits was very poor; there has been much drop. Crop prospect: apple and plum, poor; pear and cherry, fair; peach and currant, good. Clean culture is the general method practiced; legumes are planted to some extent. The gypsy and brown-tail moths are doing the most damage.

NORFOLK COUNTY.

Medway (MONROE MORSE). — Tree fruits have not set well; the peach drop has been very heavy. Apples and cherries promise a good crop; peaches, fair. Legumes are planted quite extensively; oats, barley and rye are also used as cover crops. Peaches failed to set, and the cold weather blighted the embryo fruits; the drop has been unusually large.

Westwood (INGRAM I. MARGESON). — Apples, pears, peaches, plums, sweet cherries and currants were damaged 25 per cent by frosts. Not more than one-quarter of the tree fruits, including peach, set well; the drop of peaches and cherries has been very heavy. Fruit crop prospect: apple, 25; pear, 25; peach, 100; plum, 75; cherry, 75; currant, 75; raspberry and blackberry, 75; blueberry, 100. Orchards do best under cultivation; sod mulch is practiced and grass is left around the trees, which is better than removal of hay; clean culture is the method used; legumes are not much planted; general truck crops used in young orchards; some buckwheat is also used. Tent caterpillar, gypsy and brown-tail moths and the San José scale are doing most damage; have not noticed any fire blight this summer. The strawberry crop was injured 50 per cent by frost; prices have been very satisfactory, probably 25 per cent better than 1912. No summer spraying for fruit diseases is practiced. Fruit generally looks well. Peaches are unusually large for this season of the year; currants are of good size, although there is not a great quantity on the bushes.

BRISTOL COUNTY.

South Easton (WILMARTH P. HOWARD). — Frost has damaged fruit as follows: peaches, 50; plums, 85; small fruits, 25; most of the damage was done during the last week of May. Tree fruits set

well, about 50 per cent; there has been very little drop. Fruit crop prospect: apple, 50; pear, 75; peach, 50; plum, 20; cherry, 75; currants, 75; raspberry, 100; blackberry, 100; blueberry, 100. Both methods of sod mulch are practiced in this locality; no clean culture; clover and cow-peas are used as cover crops; buckwheat is also used somewhat. The brown-tail moth and tent caterpillar are very injurious; no fire blight has appeared. The strawberry crop was injured 25 per cent by frost; prices have been very satisfactory, one-third better than in 1912. Summer spraying for sooty fungus and other diseases is practiced. There is much enthusiasm in regard to apple culture; many trees set this year and many more are contemplating the setting out of orchards; holes dug by dynamite, and much other farming is done by dynamite in this section.

PLYMOUTH COUNTY.

North Marshfield (H. E. GARDNER).—There has been no frost damage to fruits this year. There was a 60 per cent set of tree fruits; considerable drop. Fruit prospect: apple, poor; pear, good; peach, plum and cherry, fair; currant, good; raspberry, good; blackberry, fair; blueberry, poor. The sod is removed from around the base of the trees and the soil is well worked; legumes are used as cover crops; sometimes strawberries are planted between the rows, but they do not do well, owing to lack of light. The prices of strawberries have been away above the average,—10 per cent better than in 1912. Summer spraying is practiced with excellent effect. The main product of this town is strawberries; there are few orchards, and these are not run according to modern methods; we pride ourselves upon raising the best strawberries in New England.

Bridgewater (L. C. STEARNS).—Frost damage: apples, 25; peaches, 10; plums, 50; cherries, 10; tree fruits set fairly well, about 75 per cent; some drop of peaches. Fruit prospect: apple, 80; pear, 70; peach, 100; plum, 90; cherry, 90; currant, 90; raspberry, 80; blackberry, 100; blueberry, 100. Very little cultivation of any kind in the orchards; legumes are seldom used as cover crops. Damage by tent caterpillar has been most in evidence; a small amount of fire blight has appeared. The strawberry crop was injured 10 per cent by frost; prices have been rather higher than usual. To my knowledge spraying is not being practiced for sooty fungus and other diseases. Fruits in this section, both large and small, are badly neglected as to spraying, feeding and mulching.

BARNSTABLE COUNTY.

Truro (M. F. COREY).—Frosts damaged 50 per cent of the plum crop. Tree fruits did not set well, and there has been considerable drop. Fruit prospect: apple, light; pear, peach and plum, medium.

Clean culture is the method followed; legumes are not used as cover crops. The aphid is doing the most damage; to my knowledge there has been no fire blight. Strawberry crop was not injured by frost; prices have been satisfactory thus far; season not yet over. Summer spraying for sooty fungus is not practiced.

Dennis (FRANK E. HOWES).—Frosts damaged plums 50 per cent, but other fruits were not damaged. Seventy-five per cent of tree fruits set well; not much drop. Fruit crop prospect: apple, good; plum, poor; pear, peach, cherry and currant, good; raspberry, blackberry and blueberry, fair. Most of the orchards in this vicinity are in hen yards and are free from fowl stuff; legumes are not used as cover crops. Tent caterpillars and brown-tail moths are doing most damage; have not noticed any fire blight. Strawberry crop was not injured by frost; prices have been satisfactory, about the same as one year ago. Summer spraying for sooty fungus and other fruit diseases is not practiced. Orchards around here are small,—mostly for family use.

SUMMARY OF MARKET-GARDEN CROP CONDITIONS.

The following list of questions, returnable June 27, was sent out to market-garden crop correspondents:—

1. Asparagus. How does the crop compare with normal? With last year? Has there been any recent increase in the acreage?

2. String and shell beans. Has the usual acreage been planted (give reason for any change)? Did they germinate well (give per cent germination)?

3. Beets. How does the acreage compare with normal? With last year? What varieties were used for early planting? For late planting? What is the present prospect for the beet crop (give per cent)?

4. Cabbage. How does the number of early set compare with normal? With 1912? What is the prospect for the early crop (give per cent)? What varieties are most used for early crop? For late crop? How does the prospective acreage of the late crop compare with normal.

5. Carrots. Are early sown as farward as usual? What varieties are used for early crop? For late?

6. Cauliflower. Is this crop grown successfully in your locality? What varieties are most cultivated?

7. Celery. How does the acreage of the early crop compare with normal? With last year? Is there any indication of early celery running to seed? How does the prospective acreage of the late crop compare with normal? What varieties are used for early crops? For late crops?

8. Sweet corn. What is the acreage as compared with normal? What is present condition of the crop (give per cent)? What varieties have been planted?

9. Lettuce. How does the crop compare with normal? With 1912? How does the price compare with normal? With last year?

10. Onions. Compare acreage with normal. With 1912. Have usual quantity of sets been put out? What varieties of onions are used for main crop?

11. Peas. Give acreage as compared with normal. With 1912. What is present prospect as compared with normal? What are principal varieties planted? Give prices per bushel June 27.

12. Spinach. Compare acreage with normal. With 1912. Has there been an average crop? How does price compare with 1912?

13. Tomatoes. Compare acreage with normal. With 1912. What varieties are most in use? What is the present condition (compare with normal)?

14. Insects. Are cutworms doing much damage? Are other insect pests troubling market-garden crops seriously (give kind, crop and extent)?

15. Frosts. Have frosts done appreciable damage to tomatoes or other market-garden crops since May 26 (give dates and damage done)?

16. Irrigation. How many acres of market-garden land in your vicinity are irrigated? What crops is this practice applied to? What systems are in use? How often is water applied? How much is applied per acre at one application? What is approximate cost per crop per acre? Give approximately the earliest date of application which appears to be profitable. The latest.

Replies were received from 30 correspondents and from them the following summary has been compiled:—

The asparagus crop has been a fairly good one this year, the figures at hand indicating 87.5 per cent of normal. While many report the crop as about the same as last year, and a few as a trifle better, the greater number claim that it was not quite as good. This is doubtless due to the fact that the rainfall of the month of May, 1912, was especially heavy, while this year the weather during this month was cold and rather dry. Six reports from scattered localities claim an increase in acreage, but the majority report no change.

The acreage devoted to string and shell beans this year is

just about the same as usual, possibly a slight increase. The germination of seed has been poor; early planted beans rotted in the ground, owing to the cold and wet; there has also been more or less loss from poor seed this year.

The acreage of beets is practically the same as last year and is about 93.9 per cent of normal. The varieties most in favor, according to the reports, are, in order, as follows: for early crop, Crosby's Egyptian, Edmand's, Early Blood Turnip, Eclipse, Early Model, Early Wonder, Woodruff's Egyptian and Detroit; for late crop, Detroit Dark Red, Edmand's, Crosby's Egyptian and Bastian's. Although a trifle late at the present time, the prospect for the crop is 80.3 per cent of normal.

The number of early set cabbage this year is not as large as usual, being 83.5 per cent of normal, and somewhat smaller than last year. The prospect for the early crop is 68 per cent as compared with normal, the crop having been quite severely injured by maggots and curtailed by cutworms. The varieties most used for the early crop are, in order, as follows: Jersey Wakefield, Charleston Wakefield, Henderson's Early Summer, All Head, Winnigstadt, Glory of Enkhuizen, Burpee, Copenhagen Early, Early Express and Early Holland; late crop, Danish Ball-Head, All-Season, Flat Dutch, Stone-Mason, Succession, Sure Head, Glory of Enkhuizen, Winnigstadt and Hollander. The prospective acreage of the late crop, compared with normal, is 95.

Early sown carrots are hardly as forward as usual, probably from five to ten days late. Varieties most in use for the early crop are, in order: Danvers Half-Long, Chantenay, Oxheart, Henderson's Coreless, Rubicon, Early Scarlet Horn, Nantes, Short Horn and French Forcing; for late crop, Danvers Half-Long, Danvers Intermediate, Bagley's Improved Danvers, Chantenay and Rubicon.

The majority of the replies indicated that cauliflower could be raised in the different localities, very successfully in some, but with varying success in others, while a few reported that it could not be grown. Early Snowball and Dwarf Erfurt are by far the most popular kinds, while Danish Giant, Algiers and Burpees' Dry Weather were mentioned.

The acreage of early celery is practically normal, the drought having curtailed it somewhat; the figures at hand show it to be 99.3 per cent of normal. Compared with last year the acreage is somewhat larger. There is very little indication of the crop running to seed as yet. The early varieties most used are Paris Golden, Boston Market and White Plume; the late varieties, Giant Pascal, Boston Market, Paris Golden, Winter Queen and Columbian.

The acreage of sweet corn compared with normal is 95; the condition of the crop is 83.8. The following varieties have been planted, those reported the greatest number of times being placed first: Golden Bantam, Cory, Crosby, Early Dawn, Potter's Excelsior or Squantum, Country Gentleman, Washington, Stowell's Evergreen, Quincy Market, Lackey, Kendall's Early Giant, Shoe-Peg, Sheffield and Cosmopolitan.

The lettuce crop compares quite favorably with normal, the estimate being 93.7; it is somewhat smaller than the 1912 crop. Prices are 95.9 per cent of normal, although in several instances they were reported normal or above; they seem to be a shade higher than in 1912 in most sections.

The onion acreage, compared with normal, is 88.4; it is evidently slightly less than last year, although many report it the same. About the usual number of sets were put out. The varieties most used are, in order, according to the reports: Yellow Danvers Globe, Red Wethersfield, Prizetaker, Southport and White Globe.

As compared with normal the acreage of peas is 101, showing a slight increase; compared with 1912 it is 104. The prospect for the entire crop is 85 as compared with normal. The most popular varieties, in order, are: Gradus, Alaska, Telephone, Champion, Nott's Excelsior, Thomas Laxton, Sutton's Excelsior, Bliss Abundance, Senator, American Wonder, Alderman, Early Morn and Admiral Dewey. Prices on June 27 ranged from 75 cents to \$2.75 per bushel, according to location, the average price being \$1.70.

A rather small number of those reporting gave information in regard to spinach, this indicating that it is not grown as extensively as many other market-garden crops. The acre-

age, however, was slightly above normal, being estimated at 108; compared with last year it was 111. The majority of replies indicate that the crop was about average or a trifle above. Prices in general ranged higher than last year, one man reporting 10 per cent higher; another reported for 1912 from 75 cents down to 25; for 1913, from \$1 down to 40 cents.

In acreage the tomato crop is 109.9 per cent, almost 10 per cent above normal; as compared with last year it shows a still greater increase, being 112.1. The varieties most in use, in order, are: Stone, Earliana, Bonny Best, Chalk's Early Jewel, Champion and Livingston. The present condition of the crop is 90 per cent of normal, the growth of the plants having been checked by the cold weather earlier.

Cutworms have done a large amount of damage this season, although they are not as active now as they have been. Maggots seem to be especially injurious, necessitating the plowing under of the early cabbage crop in some instances; onions also have been heavy sufferers from the maggot. The Colorado potato beetle has been much in evidence and squash bugs are quite plenty. The asparagus beetle also has caused a good deal of trouble. The striped cucumber beetle, plant lice, rose bugs, cabbage worms and gypsy and brown-tail moths are also mentioned.

Frost damage since May 26 has been very light in most sections. Berkshire County and western Hampshire County experienced quite severe frosts on June 9, 10 and 16; tomatoes, beans, peppers and lettuce were badly injured, and potatoes cut back, but they recovered later. These frosts were largely confined to the valleys. In North Dana frosts on the 10th, 11th and 12th of June did considerable damage. In Marlborough, beans and tomatoes were injured during the first week of June. In the town of Bedford some damage to tomatoes and corn has been done.

With a larger number of returns some interesting and valuable figures in regard to the practice of irrigation might be secured. The practice already has many adherents and is rapidly being extended in many localities. The Skinner system is most in use, although water is applied by hose and

in furrows to some extent. Water is applied as often as the crops demand it, and in some instances every night. From one-half an inch to two inches is applied at one time. There is a great range in the estimates as to cost per crop per cent, as they run from \$3 to \$60. The earliest date of application ranges from April 15 to July 1; the latest date from September 1 to October 1, and later for celery. All market-garden crops are subjected to this treatment, and strawberries and other small fruits in many instances.

NOTES OF MARKET-GARDEN CROP CORRESPONDENTS.

[Returned to us June 27.]

CHARLES E. BOOTH, *Belchertown (Hampshire County)*.—The asparagus crop is 70 per cent of normal; 60 per cent of last year; no recent change in acreage. The usual acreage of string and shell beans planted; germination, string beans, 2 per cent; shell beans, 75. Acreage of beets is about the same as usual; Edmands Early used for both early and late planting; prospect for the beet crop, 90. For the early cabbage crop, Copenhagen Early is used; for late crop, Roundhead. Early sown carrots are as forward as usual; the kind most in use is Danvers. Cauliflower is grown with varying success; Burpee's Dry Weather is the variety most in use. Sweet corn acreage, 90 per cent of normal; condition of crop, 75; Yellow Bantam and Sheffield Cosmopolitan are the varieties used. Acreage of onions, 110 per cent as compared with normal; 90, as compared with 1912; Danvers Prize Taker and Red Wethersfield are varieties used. Tomato acreage is about normal; 100 per cent of 1912; Chalk's Early Jewel most in use; present condition of crop, 60. Cutworms are doing a good deal of damage; striped cucumber bugs on squashes, melons and cucumbers is also very destructive. On June 10 the thermometer dropped to 29°; this damaged tomatoes, peppers, potatoes and beans, but did not hurt corn; potatoes and tomatoes starting again. No irrigation in this vicinity.

H. W. GURNEY, *Cummington (Hampshire County)*.—String bean germination good.—100 per cent. Sweet corn, condition late. Cutworms are doing more damage than usual. Frost of June 9 ruined lowland gardens.

A. J. RANDALL, *Hadley (Hampshire County)*.—Asparagus promises an average crop, and the crop is good as compared with last year; the acreage of asparagus has increased; we have 18 acres. The usual acreage of string and shell beans planted; germination, 80. Acreage of beets, 75; not as large as last year; Blood used for

early planting; prospect for the crop, 60. Number of early set cabbage as compared with normal is 50; as compared with 1912, 50; prospect for the crop, 60; Danish used for late planting; as compared with normal the prospective acreage is 90. Early sown carrots are not as forward as usual; Short Horn used for early crop; Half long, for late. Cauliflower is grown successfully by only a few. The early celery crop acreage is less than normal; 70 per cent of 1912; there is not so much indication of early celery running to seed as last year; the prospective acreage of the late crop is 100. The acreage and condition of sweet corn is normal; Early Bantam variety planted. The lettuce crop is normal, both in price and condition, as compared with last year. As compared with normal, the acreage of onions is 90; as compared with 1912, 90; White Globe used for main crop. Acreage of peas is 60; as compared with normal, 80; Champion is the principal variety planted. Tomato acreage, 100; same as 1912; Earliana and Champion are most in use. Cutworms are doing damage on some lands. There has been no noticeable damage by frosts since May 26. No irrigation in this locality.

R. K. CLAPP, *Westhampton (Hampshire County)*.—Asparagus crop is 80 per cent of normal; 100 per cent of last year; very little increase in acreage. Usual acreage of string and shell beans planted; germination, 90. Number of early set cabbage, 60 per cent of normal, 50 per cent of last year; early crop prospect, 90; Jersey Wakefield most used for early crop; Danish, Surehead and Flat Dutch, for late; acreage, 95 per cent of normal. Sweet corn acreage, 100 per cent of normal; condition, 80; Golden Bantam and Country Gentleman varieties planted. Pea acreage, normal; 95 per cent of 1912; present prospect is good; principal varieties planted, Alaska, Senator. Tomato acreage, 105 as compared with normal and also as compared with 1912; Earliana and Chalk's Early Jewel varieties most used. Cutworms are doing some damage. No appreciable frost damage since May 26.

MYRON L. BROWN, *West Springfield (Hampden County)*.—The asparagus crop is normal, the same as last year; no increase in acreage. Usual acreage of shell and string beans planted, both of which germinated well. Beet crop is normal, and compares favorably with last year; Eclipse, Crosby's Egyptian and Early Model used for early planting; crop prospect is 100. Number of early set cabbage is normal, less than last year; Jersey Wakefield most used for early crop; prospective acreage of late crop is normal. Early sown carrots are as forward as usual; Danvers Half Long used for both early and late crops. Cauliflower is not much grown in this vicinity. Early celery crop acreage is normal, same as last year; no indication of early celery running to seed; prospective

late crop acreage, 100; Golden and White Plume used for early crop; Pascal and Winter Queen, for late. Sweet corn acreage, 100; condition, 100; Early Dawn, Howling Mob and Squantum planted. Notts is principal variety of peas planted; prices, \$1 to \$1.25 per bushel. Tomato acreage normal, same as last year; Earliana and Stone most in use. Cutworms are doing damage in small gardens; other insect pests are not giving serious trouble. Four acres of irrigated market-garden land just installed in this vicinity; Skinner system used.

JAMES E. HAMILTON, *Palmer (Hampden County)*. — Asparagus crop fair, larger than last year; no recent increase in acreage. Usual acreage of beans has been planted; germination poor. Beet acreage, normal; Early Blood used for early crop; prospect for the crop poor, 40 per cent. Number of early cabbage set less than normal, also less than last year; prospect for the early crop is fair; prospective acreage normal. Early sown carrots are not as forward as usual; cattle feeders most used for early crop. Sweet corn, acreage, better than normal; present condition, 90; Evergreen and Golden Bantam have been planted. Lettuce crop fair; smaller than 1912; prices poor, but better than last year. Onion acreage smaller than normal, smaller than last year; usual quantity of sets have not been put out. Pea acreage smaller than normal, less than 1912; prospect for crop fair; Champion and Telephone principal varieties planted. Tomato acreage larger than normal, and larger than last year; early varieties most in use; present condition good. Cutworms are doing much damage; other insects are doing serious damage to rose buds in this section. No noticeable damage by frosts since May 26. No irrigation in this locality.

J. F. FREELAND, *Sutton (Worcester County)*. — Asparagus is not grown in this vicinity for market. Usual acreage of beans planted, and they germinated well. Beet acreage normal, same as last year; Early Blood for early planting. The number of early set cabbage is below normal and less than 1912; early crop prospect, 75; Henderson's Early Summer, Charleston and Wakefield used for early crops; Danish and All Season for late; late crop prospective acreage normal. Carrots not grown here. Cauliflower is grown successfully here; Early Snowball variety most cultivated. Celery not grown here. Sweet corn acreage above normal; present condition, 80; Red Cory, Lackey, Kendall's Early Giant planted. Lettuce not grown for market here. Onions not grown. Pea acreage normal; present prospect, 90. Spinach not grown. Tomato acreage below normal; present condition normal. The potato beetle is more numerous than usual. No appreciable frost damage since May 26. All crops are backward.

H. W. BRIGHAM, *Concord (Middlesex County)*. — The asparagus

crop is 60 per cent of normal; no increase in acreage recently. Erfurt cauliflower is successfully grown in this locality. Not much celery raised here. Sweet corn, acreage normal, same as last year; Washington variety planted. No lettuce raised here, and only a few onions. Tomato acreage normal; Bonny Best and Stone being most used varieties. Cutworms are not doing much damage here, but asparagus bugs are very numerous. No noticeable frost damage since May 26. No irrigation.

EDWARD R. FARRAR, *Lincoln (Middlesex County)*.—The asparagus crop is 90 per cent of normal, 95 per cent of 1912. Usual acreage of string and shell beans has been planted; germination, 80. The acreage of beets is normal; early crop prospect, 75; late crop, prospective acreage, 70. Early sown carrots are not quite as forward as usual. Sweet corn acreage normal; present condition of crop, 90. Pea acreage is normal, as also is the tomato acreage; present condition of tomato crop is 80. Cabbage root maggots and squash bugs are doing serious damage in this vicinity. No noticeable frost damage since May 26.

HENRY LYNDE, *Melrose (Middlesex County)*.—The asparagus crop is 110 as compared with normal, same as last year; no recent increase in acreage. Normal acreage of string and shell beans planted; germination, 95. Acreage of beets, 100, compared with normal; Crosby's Egyptian, early; Edmands, late; tops are badly eaten; otherwise, condition is 100. Number of early set cabbage, 100; compared with 1912, 100; early crop was plowed up; early variety, Early Summer Winnigstadt; late variety, Danish Ball Head; prospective acreage of late crop, 80. No cauliflower raised here. Acreage of celery compared with normal, 100; with last year, 120; no indication of running to seed; acreage, late crop compared with normal, 120; variety, early crop, Paris Golden; late crop, Pascal. Acreage of sweet corn, compared with normal, 40; present condition, 80; Bantam has been planted. Lettuce crop normal; compared with 1912, 120; price, 125 compared with normal; with last year, 125. Acreage of peas normal, same as 1912; prospect, 125; principal variety, Gradus. Acreage of spinach normal, same as 1912; there has not been an average crop; prices, 80 per cent of 1912. Tomatoes, acreage, 100, same as 1912; varieties in use, Earliana, Autocrat, Stone; present condition, 80. Cutworms doing considerable damage; cabbage crop plowed up, owing to maggot; maggot on beet also bad. From 8 to 11 acres in this vicinity irrigated; general crops, except asparagus and rhubarb; Skinner system and hose; water applied when land gets dry; sowed beets two days ago and watered at once; latest date of application October 1; my land is sandy and will take a great deal of water; have never kept account.

WALTER BARTON, *Weston (Middlesex County)*. — Asparagus crop, 85; compared with last year, 75; 5 per cent increase in acreage recently. Usual acreage of string and shell beans planted; germination, 60. Beet acreage, 90, same as last year; for early planting, Edmand's; crop prospect, 80. Number of early set cabbage, compared with normal, 60; compared with 1912, 85; prospect for early crop, 50; Early Wakefield used for early crop; prospective acreage of late crop, 75. Early sown carrots about normal; Danvers Half Long used for late crop. Cauliflower is grown; Dwarf Erfurt is the variety used. Acreage of early celery, 70; compared with last year, 60; no indication of running to seed; prospective acreage of late crop, 85. Sweet corn, acreage, 95; present condition, 90; Golden Bantam, Crosby and Cory have been planted. Lettuce crop, condition, 85; compared with 1912, 80; price compared with normal, 85; with last year, 75. Onion acreage, 60; compared with 1912, 60; usual quantity of sets have not been put out; Yellow Globe Danvers most in use. Acreage of peas, 80; compared with 1912, 75; prospect for crop, 90; varieties, Alaska and Gradus; price per bushel, \$1.75. Acreage of spinach, 90, same as 1912; there has been an average crop; price same as 1912. Acreage of tomatoes, 95, against 90 for 1912; varieties in use, Stone and Earliana; condition, 90. Cutworms are doing much damage; squash bugs also very bad. No appreciable frost damage. Two acres in this vicinity irrigated; water applied to lettuce and beets; overhead piping system; twice a week. Seeds in general have not germinated well. Strawberry crop about 75.

FRANK L. GOWEN, *West Newbury (Essex County)*. — Acreage of asparagus, 50; last year about 75; no recent increase. Usual acreage of beans planted; germination about 85. Acreage of beets, 90, same as 1912; Eclipse and Crosby's the varieties used; present prospect fair. No early set cabbages for sale at this time; Danish Ball Head used for late crop; prospective acreage of late crop normal; condition normal. Cauliflower is grown successfully; Dwarf Erfurt and Snowball are the varieties used. Acreage of celery, same as last year. Acreage of onions normal, and compares favorably with last year; Early Round Yellow Danvers used for main crop. Cutworms doing a great deal of damage, especially to cabbage and cauliflower; onion maggot, brown-tail and gypsy moths also very injurious. Only 1 acre in this section irrigated, this being strawberries. Water applied daily by gasoline engine. Crops do not seem to be growing as fast as usual on account of the drought. In some places seeds failed to germinate. Many onion beds are affected with smut.

H. E. WEST, *Seekonk (Bristol County)*. — Asparagus, acreage, 90, less than last year; no recent increase. Acreage of beets compares favorably with normal and with last year; Crosby's Egyptian for early crop; Detroit Dark Red for late. Early set cabbage com-

pares favorably with normal and with last year; prospect for crop, 75; Early Jersey Wakefield most largely used; for late crop, Danish Ball Head. Carrots about the same as usual in condition; Danvers Half Long most in use. Cauliflower is grown with fair success; variety Snowball. Acreage of early celery, 100, same as last year; no indication of running to seed; early crop Golden Self-Blanching; late crop Giant Pascal. Lettuce crop compares favorably with normal, and also with 1912 crop; price, 80 per cent of normal; 75 compared with last year. Acreage of onions less than last year; usual quantity of sets have not been put out; variety, Yellow Danvers Globe. Spinach acreage normal, although less than last year; there has not been an average crop; price, 75 per cent of 1912. Acreage of tomatoes somewhat above normal, 10 per cent larger than last year; variety most in use, Earliana; present condition not especially good. Cutworms doing considerable damage. No frost injury. Forty acres irrigated in this vicinity; all crops included; garden hose and Skinner system; cost per crop per acre, \$50 to \$60; earliest date of application, April 15.

W. E. EVERSON, *Hanover (Plymouth County)*.—The asparagus crop is about average, a little better than last year; there has been no recent increase in the acreage. Usual acreage of string and shell beans has been planted; in some cases not more than 30 per cent germinated. Beet crop acreage compares favorably with normal and with last year; Early Wonder used for early planting; Detroit Dark Red for late; present prospect very poor; almost impossible to get the early varieties. Early set cabbage below normal in number, and less than last year; prospect for early crop not over 50 per cent; Charleston and Wakefield used for early planting; Danish Ball Head for late; prospective acreage below normal. Early sown carrots not as forward as usual; Henderson's and Coreless used for early crop; Danvers for late. No great amount of cauliflower is grown here, what there is being Snowball variety. Very little celery grown in this locality. Sweet corn acreage is about average, and very good compared with last year; Early Dawn and Golden Bantam varieties planted. The lettuce crop is average as compared with normal; about the same as last year; price is lower as compared with normal and also as compared with 1912. No great amount of onions planted. Usual acreage of peas planted, and the prospect is for an average crop; many varieties are planted, Sutton's Excelsior being a popular one; on June 27 peas were selling at \$1.50 per bushel, having dropped from \$2.25 since June 24. Tomato acreage above normal, and a larger setting than last year; Earliana, Bonny Best, Bountiful and Stone varieties used; present condition is not up to that of last year. Cutworms are doing serious damage. No great amount of frost damage since May 26. Crops as a whole are

not as far advanced as usual, and cutworms did considerable damage to cucumbers, squash and lettuce.

JOHN DANIEL, *Marston's Mills (Barnstable County)*. — Asparagus crop is 90 as compared with normal. No large amount of string beans raised; one man has 2 acres for dry beans; cannot say as to germination. No beets raised here. There is probably less than one-quarter acre of late cabbage within a 5-mile radius. Cauliflower could be successfully grown here, but none has been planted. Celery is not raised in this locality. Sweet corn acreage, 90 or over as compared with normal; 60 per cent represents present condition. Onions are not grown here. Cutworms are doing serious damage on new land, but as yet other insects are not troubling market-garden crops. No appreciable frost damage since May 26. Many of the crops raised here are for home use, and it is, therefore, difficult to give accurate information regarding them.

JOHN E. HOWLAND, *Tisbury (Dukes County)*. — Asparagus crop is 90 as compared with normal and with last year; there has been no acreage increase this season. The usual acreage of string and shell beans has been planted; germination, 60, owing to cold and wet weather, which followed planting. Beet crop acreage compares favorably with normal and with last year. Very few cabbages grown here. Cauliflower is not grown here. Celery is raised only in a small way, Golden Self-Blanching being used for early crop; Boston Market for late. Sweet corn acreage, 20 per cent above normal; present condition, 75. Lettuce crop is ahead of normal; prices compare favorably with normal and with last year. Usual quantity of onions have been put out; Red and Yellow Danvers Globe and Wethersfield are most common varieties. As compared with normal and with last year, pea acreage is 25; present prospect, 90; price, \$2 per bushel, wholesale. Acreage of spinach is normal and the same as last year; there has been an average crop, and the price is the same as in 1912. Tomato acreage is 25 per cent above normal, and the present condition is good. Cutworms are reported very plentiful, and the asparagus beetle did some damage where chickens were not allowed to run in the field. Since May 26 the frost damage has been very slight. Not more than 20 acres of land in this vicinity irrigated; practice applied to small market-garden truck; Skinner system in use; water is applied every three or four days at night, and is allowed to run 6 hours at each application.

SUMMARY OF CRANBERRY CROP CONDITIONS.

Blanks, returnable June 30, were sent to cranberry correspondents which contained the following questions:—

1. Have there been any damaging frosts since date of last report (May 28) (give dates, temperatures and per cent of blossoms killed)?

2. What was the bloom compared with normal?

3. Give crop prospect at present date, compared with normal.

4. What insects are doing most damage? (a) What fungous diseases are causing damage? (b) What percentage of the growers in your locality have sprayed their bogs this year?

5. Are the vines on new bogs doing well? (a) What per cent of vines set this spring took root and are now alive?

6. How does the water in the ditches compare with normal at this time? With last year?

7. Are the growers in your vicinity becoming interested in the value of bees as pollenizers of cranberry blossoms?

Replies were received from 33 correspondents, and from these replies the following summary has been compiled:—

More or less damage which was done before the date of the last report, May 26, but was not apparent at that time, has become evident during the past few weeks. Since that date the most injurious frosts occurred on the nights of June 9 and 10. No damage was done on bogs which could be flowed, because warnings were issued and growers were prepared. Probably about 75 per cent of the bogs are equipped for such emergencies, but the remaining 25 per cent, which are dry bogs, suffered an injury of from 15 to 20 per cent as a whole, more in some sections and less in others.

While the date of reporting was a trifle early to accurately estimate the bloom in some sections, it was in general far

enough advanced so that comparisons could be made. The large majority of correspondents gave it as normal or above, and the average of all returns indicates a 106.3 per cent bloom.

The prospect for the crop is very good, some reporting it to be the best for several years. Others report that it is too early as yet to give definite figures. The figures submitted, however, place the estimate at 98.2 per cent of normal for the crop prospect at the present time. This of course is subject to modification from different causes at later dates.

Up to the time of reporting, the black-headed fireworm was reported in many instances as doing the most damage. A few reported the yellow-headed fireworm. Several reported that no damage has as yet been done by fungous diseases. According to the majority of reports it is as yet too early to judge what the damage will amount to. "Ringworm," "false bloom," blast and scald are spoken of as causing some loss. Several call attention to the fact that fungous diseases are not generally understood by the growers, and so are not receiving the careful attention which the situation demands. According to the figures at hand only about 27 per cent of the growers spray their bogs at the present time for either insects or fungous diseases. This is not as it should be, but the growers are fast coming to realize the need and value of this practice, and the number of those employing it is steadily increasing. Cost should not deter the grower, for the added return will much exceed this outlay; a man can well afford to feed his chickens gold dollars if they will return him diamonds.

While the acreage of new bog set this spring was not especially large, the new vines are doing especially well, not one report to the contrary being received. Of all vines set 93.8 per cent took root and are now alive, showing that weather conditions were very favorable.

The amount of water in the ditches is of course regulated according to conditions where such regulation is made possible by a reserve supply of water, and wherever possible such a supply is maintained. On dry bogs, however, the supply of water is very nearly normal, being estimated at

97.3 per cent; springs are low, however, and the supply is fast decreasing at this writing. Compared with last year the water supply is somewhat better in Plymouth and Bristol counties, but down further on the Cape, in Barnstable County, the rainfall seems to have been lighter, so that the supply is rather lower than a year ago.

Interest in the use of bees as pollenizers is, in general, gradually increasing. The president of the United Cape Cod Cranberry Company states that they are thoroughly convinced of the value of bees, and have organized a bee department with a superintendent in charge of it. Some report that the growers are becoming educated to the value of bees but still depend upon wild bees or those belonging to others. One correspondent recognizes the value of bees, but also calls attention to the fact that there are other agencies which aid pollenization. It is encouraging to note the increased interest in this phase of the industry.

NOTES OF CRANBERRY CROP CORRESPONDENTS.

[Returned to us June 30.]

VERNON RICE, *Hopkinton (Middlesex County)*.—There have been no damaging frosts since last report. Bloom promises a two-thirds crop. No insects or diseases doing serious damage; no spraying practiced. Vines on new bogs doing well; 90 per cent of vines set this spring took root and are now alive. Water is plenty; more than last year. No interest is being taken in bees as pollenizers.

MARCUS L. URANN, *South Hanson (Plymouth County)*.—On the morning of June 9 temperature dropped to 30°; frost warnings were issued and owners generally prepared; some damage to dry bogs. Bloom 120. Crop prospect at present date about normal. Blackhead fireworm doing most damage. Newly set bogs doing well; 100 per cent of vines took root and lived. Water in ditches about normal; 50 per cent more than last year. Very much interest in bees: we have started a bee department. Some bogs were considerably damaged by spring frosts; those that were not were exceptionally well bloomed, and from present indications will bring the crop up to about average. There are more fruit-worm millers than last year at this time; there are some true and false army worms in different sections of the Cape; spraying for these has been quite general.

EDWIN A. STEVENS, *Duxbury (Plymouth County)*.—There have

been no damaging frosts since May 28. As compared with normal the bloom is heavy. Crop prospect very fine at present date. Insects are not doing any damage at this date. If any, fungous diseases are light. Nearly all growers in this locality have sprayed this year. Vines on new bogs are doing well, and 99 per cent of those set this spring took root and are living. The amount of water in ditches depends on the course of owners. Growers are becoming interested in bees as pollenizers.

SETH C. C. FINNEY, *East Carver (Plymouth County)*.—Temperature varied in different bogs, June 7 to 10, 28° to 35°; many bogs damaged but cannot give per cent killed. Bloom about 95 compared with normal, and the crop prospect at present date is very good. Blackhead fireworms are doing most damage. Do not know of any fungous disease damage at this date. About 5 per cent of growers sprayed their bogs. Vines on new bogs are doing well, and nearly all the vines set took root and are living. Water in ditches is 80 compared with normal; 75 per cent of last year. A few of the growers in this vicinity are interested in bees.

W. A. TILLSON, *Carver (Plymouth County)*.—On June 9 the temperature was 28° above in some places, but bogs were mostly protected by water, so damage is small, not more than 5 per cent. Bloom is 20 per cent above usual crop. Blackhead fireworms are doing most damage. Vines on new bogs are doing well. Water is normal, same as one year ago. Only three or four growers are interested in bees. Many growers here have pumping plants, and most of the bogs are protected from frost damage and worms by the use of water.

L. M. ROGERS, *South Carver (Plymouth County)*.—The thermometer registered 26° on the night of June 9, and 40 per cent of unprotected blossoms were killed; probably 75 per cent of the crop was protected. Bloom is probably 20 per cent above normal; prospect is very uncertain, but I should say it was above normal. Yellow and black head fireworms are doing most damage, and the disease commonly known as ringworm is also causing damage. Maybe 20 per cent of the total area will be sprayed; they are just beginning, so it is difficult to tell. New vines are doing very well, and 95 per cent of those set took root and are living. Water about normal because of June rains; last year heavy rains occurred in May, none in June. Growers are becoming interested in bees, but are uncertain as to their value. I have three hives; think there are other forces to pollinize crop without bees, but do not wish to take any risk. The frosted area may or may not have a fair crop, but this cannot be determined sometimes until close upon picking time. Crop will be late, and, if cold nights come early, will not mature. Rainfall May, 1912, 4.57 inches; May, 1913, 1.86; June, 1912, .34; June, 1913, 1.76.

DONALD McFOSLIN, *South Carver (Plymouth County)*.—On June 9 we had a slight frost which killed a small per cent of the buds. As compared with normal the bloom is 133. Crop prospect at present date cannot be determined. Blackhead fireworms are doing most damage. There is practically no fungous disease damage. About 20 per cent of growers in this vicinity sprayed, most of them having flowed. Vines on new bogs are doing well, and practically all vines set took root and are now alive. Water compares favorably with normal and with last year. Some of the growers are interested in bees. I have been bothered on a small piece with the bud worm, which is about one inch long and looks like the cutworm.

J. D. PIERCE, *West Wareham (Plymouth County)*.—The frost of June 9 killed 90 per cent of a 17-acre bog here. Bloom is normal, and the crop prospect is about normal. Fireworms are doing most damage. No damage by fungous diseases. Bogs were sprayed by 40 per cent of the growers here. Vines on new bogs are doing finely. Water in ditches is normal, same as last year. Not much interest is being taken in bees. Where the water was held on the bog until May 20, the new shoots are looking finely, but of course they are later than those where the water was taken off earlier.

JAMES J. WALSH, *Wareham (Plymouth County)*.—The temperature on June 10 was 28° in some places; not more than 5 per cent of blossoms killed. Bloom good, and the crop prospect at the present time is good. Blackhead fireworm doing most damage. Fungous diseases are not well understood by the growers. Five per cent of the growers have sprayed their bogs. Vines on new bogs are doing well, and 95 per cent of those set took root and are now living. In most cases the amount of water is optional with the growers; on dry bogs the supply is rather better than last year. Growers are becoming interested in bees as pollenizers.

W. E. MYRICK, *Wareham (Plymouth County)*.—There have been a number of frosts, but no serious damage has been done. Bloom about normal. It is too early to estimate crop prospect. Blackhead fireworms are doing most serious damage; too early to note fungous disease damage. Most of the growers in this locality have sprayed their bogs. Vines on new bogs are doing well, and about 90 per cent of those set took root and are now alive. Supply of water is about normal, and most of the ditch water is controlled by reservoirs. Some interest is being manifested in bees here. Bogs throughout this district are looking very well and are about to blossom this week.

S. A. BESSE, *Wareham (Plymouth County)*.—On the morning of June 10 mercury was 28°; not more than 2 per cent of blossoms were killed. Bloom somewhat above normal, as also is the crop prospect. Blackhead fireworms are doing most damage. A small

percentage of the growers here sprayed their bogs. New vines are doing well, and 100 per cent of those set took root and are living. Ditch water about normal, and in dry bogs is more than last year. Interest is being shown here in bees.

ROBERT T. HANDY, *Bourne (Barnstable County)*.—On June 9 the temperature was between 27° and 28°, and killed 75 per cent of blossoms on unflowed bogs. Bloom normal. Crop prospect, 50 per cent. Fireworms are doing most damage. Fifty per cent of the bogs here were sprayed. Vines on new bogs are doing well. Ditches are full, but springs are low. Some interest is being manifested in bees. Bogs with new growth abundant, if not covered or partially covered with water they were badly damaged by frosts; otherwise, bogs are heavy with blossoms.

JOHN H. CROCKER, *Falmouth (Barnstable County)*.—On June 10 the thermometer registered 29° to 30°, and some bogs were badly damaged; others had water on them. Up to the present time bogs are blooming very well, about the same as last year. It is too early to estimate the crop. Fire and girdle worms are doing most damage. I do not know that any bogs have been sprayed. Vines on new bogs are doing well, and about 95 per cent of those set took root and are alive. In my opinion the water supply is a little less than last year. Bees are not much talked of here. Some bogs are blooming very well, while others are making vines and have few blooms. I find that the winterkilling was greater than was at first thought.

JOSEPH A. PETERS, *Mashpee (Barnstable County)*.—There have been some damaging frosts since May 28. Bloom is fair as compared with normal. Crop prospect is normal. Fireworms are doing most damage. At the present time there is no noticeable damage by fungous diseases. About one-tenth of the growers in this locality sprayed their bogs. Water supply is about the same as last year. Growers here are becoming interested in bees as pollenizers. I think the bogs in this section are looking as well as usual, if not better.

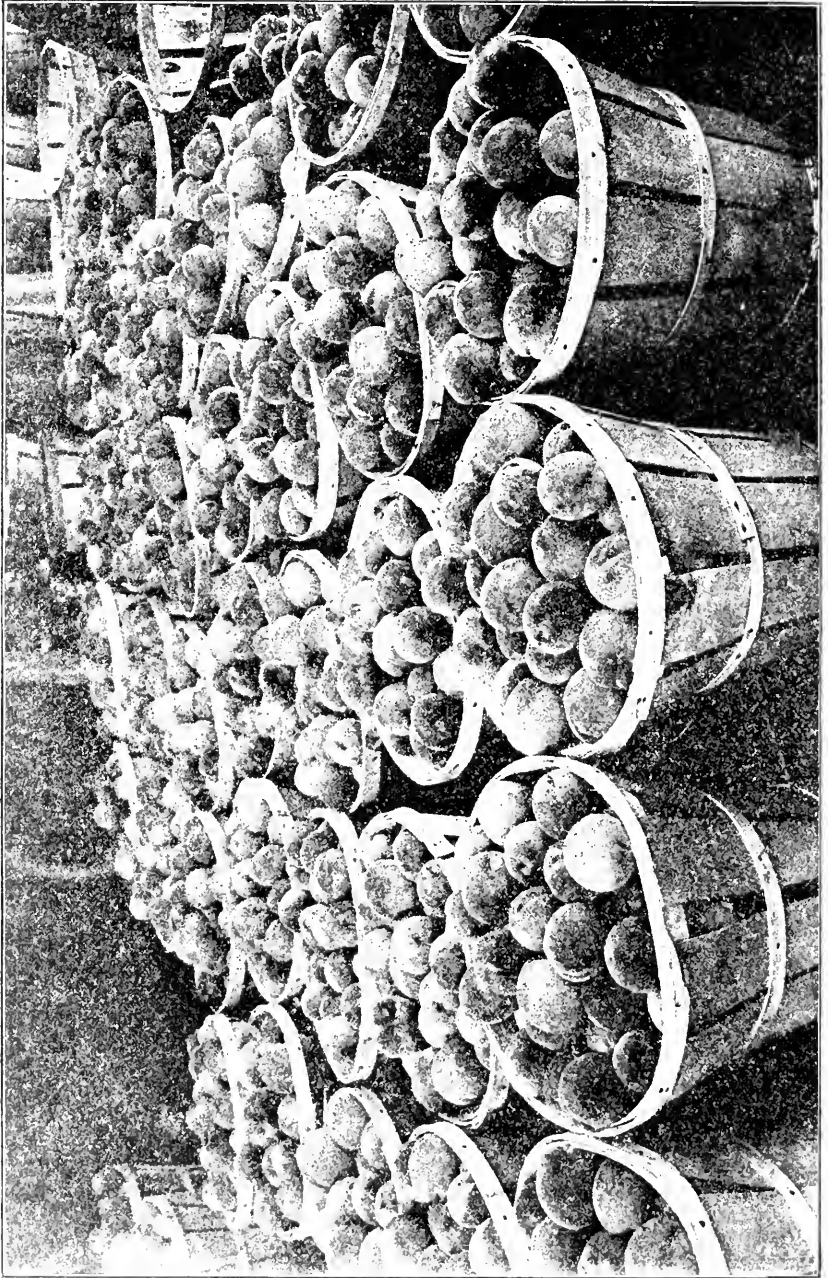
GEORGE T. MECARTA, *Barnstable (Barnstable County)*.—On June 9 the temperature was 37°, and at 1.30 A.M. June 10 it was 27°. Bloom, 100. Crop prospect, 100. Fireworm has been doing most damage. I do not know of any damage by fungous diseases. Spraying has been done by 20 per cent of the growers. Vines on new bogs are doing well, and 95 per cent of those planted took root and are living. Water in ditches is 80 per cent of normal, and is 80 as compared with last year. Interest is being manifested in the value of bees. The water in the ditches averages lower this year than last, as we are not having as much rain this season.

JOSHUA CROWELL, *Dennis (Barnstable County)*.—We have had several light frosts since May 28, but the damage was slight. Bloom is about normal, and the prospects are good for a full crop. Very

few insects in evidence at present. Perhaps 10 per cent of the growers here have sprayed their bogs. Vines on new bogs are doing well. Water supply is about the same as last year. No interest is being shown as to the value of bees. Think it will be about a week before the vines will be in full bloom. Any predictions as to crop prospects at this time would be of little if any value. Most of the spraying will be done in the next two weeks, as it is about time for the second crop of fireworms, which are the most destructive.

F. D. UNDERWOOD, *Harwich (Barnstable County)*.—There was a frost on June 9, but it is difficult to estimate the damage, which, however, was not severe; in low places it was probably 20 per cent. There was a 70 per cent bloom. Crop prospect, 75. Vine worms are doing the most damage. Cannot determine fungous disease damage until berries set. Only two growers have sprayed their bogs. Vines on new bogs are doing well; good season for vine growth. There is plenty of water, more than in 1912. No interest being taken in the value of bees. Spraying is being watched closely, and will probably be adopted here more generally another year.

H. S. TRUEMAN, *Truro (Barnstable County)*.—There have been no damaging frosts since May 28. The bloom was fully up to average, and the crop prospect is normal. Fireworms are doing most damage. No damage by fungous diseases. Vines on new bogs are doing well, and 85 per cent of those set took root and are now alive. Water supply is lower than normal, and is also lower than last year. Growers are becoming interested in the value of bees as pollenizers.



Massachusetts Peaches. — A Feast for the Eyes.

BULLETIN OF
 MASSACHUSETTS BOARD OF AGRICULTURE.

PEACH GROWING IN WESTERN MASSACHUSETTS.

ADDRESS BY L. W. RICE OF WILBRAHAM, AT THE NINETEENTH ANNUAL MEETING OF
 THE MASSACHUSETTS FRUIT GROWERS' ASSOCIATION.

ESTABLISHING AN ORCHARD.

Location.—First choose the site of the orchard. This should be a place of good elevation with good air and water drainage, which sometimes is hard to find and purchase. The land should be cleared of all trees and rocks. This can be accomplished best, and with least expense, by using dynamite. An orchard can be raised if the stumps and rocks are not all cleared away, but in the end the cost of clearing is saved in broken tools, loss of time and unpleasantness while spraying and cultivating. It is a pleasure to work in an orchard that has been well cleared, while one in which the stumps and rocks have been left is constantly trying one's patience. We want to carry on our business so that the work in the orchard will be a pleasure; and it is a pleasure to work in a good orchard. If the land contains any wet places they should be tile drained. The tile should be placed $3\frac{1}{2}$ feet deep, so that the roots of the trees will not displace them; also, so as to drain the soil deep enough to give the roots plenty of room. The land should be thoroughly plowed. This is a slow, tedious job on rough land. It is best to plow the land in the fall, for then it will be finer and in better shape than if left until spring. If, however, one is unable to plow until spring, and it be a dry spring, harrow every morning what was plowed the day before. In this way the land holds the moisture.

Selecting the Trees.—Next comes the problem of selecting the trees. This should also be done the previous fall in order to obtain the desired varieties and grades of trees. In selecting varieties it is best to choose such as will ripen in succession, so as to hold the market and distribute the labor over as long a period as possible. A good succession covering the period from about August 1 to September 15 is as follows: Greensboro, Waddell, Carman, Hiley, Belle of Georgia and Elberta. Chairs Choice comes later than the

Elberta, but has been nearly a failure here. Don't plant it. A few years ago it would have been very desirable to get something later than the Elberta, but now so many peaches are put into cold storage and held until after the bulk of the crop is marketed that later ones do not bring as high prices as formerly. A No. 1, 4 to 5 foot yearling tree is a good grade for orchard planting.

Setting out the Trees. — If one is ready to plant the trees within a few days after they are received they may be left in the box. The box should be put into a shed or barn cellar and covered over with hay or straw to keep the trees from drying out. If not ready to plant the trees at once, open the box, loosen the bundles and cut the body of the tree off for about 20 inches above the bud, cutting off all limbs. Cut off the broken parts of the roots, also, and dig out the borers. The trees should then be placed in a trench deep enough so that they will be covered above where they are budded, taking pains to sift the dirt in around all the roots. Do not allow the roots to dry out. If possible the trench where the trees are to be placed should be in the lot where they are to be planted, as they are much handier and time is saved in carting. When it comes to setting out, it is well to have a barrel of water on a stone boat in the lot to wet the roots in. As to distance apart, the writer plants apple trees 32 by 40 feet, and plants two peach trees between one way, and one the other way, making the trees about 16 by 13 feet. This, no doubt, is too close for some localities, but here where the life of the peach tree is so short it is far enough apart. Dig the hole deep enough so there can be 2 or 3 inches of good top soil placed in the bottom. Then set the tree in the hole so that the place where it is budded will be a little below the level of the ground; sift the good soil in around and over the roots and tread firmly. Care should be taken not to injure the roots while treading. Put about a pound of bone or other good fertilizer into the hole and mix thoroughly with the soil. Next, fill the hole nearly full, leaving a little hollow with the tree in the center, so that when it rains the water will have a tendency to settle around the tree instead of running away from it.

Cultivation. — Cultivate and hoe the trees as you would care for a field of corn until the last of July or first of August. Sow oats and turnips or some other cover crop, such as vetch or clover, if you can grow it. If the land is steep, so that it is liable to wash, plow furrows along the side of the hill, beginning near the top and turning the furrow down hill to catch the water. Plow furrow so there will be fall enough to carry the water off. Plow similar furrows along the side of the hill as often as is necessary to take care of the water. These furrows should be plowed deep and cleaned out with a shovel; then scatter a little fertilizer in and

on the furrow and sow oats rather thick and rake in. The oats will help keep the furrow from washing. When the trees get so large it is impossible in some places to plow the furrows along the side of the hill all the way, plow them so as to catch the water, and if need be plow straight down the hill to carry the water off. It is much better to have a few deep gullies washed that can be filled up with stone than to have a lot of the top soil washed off, as would probably be the case if the water was allowed to run down over the surface of the hill.

Trim the little trees in August, forming the head. Trim a peach tree just opposite to what you would if you were raising a tree for a saw log. A tree with from five to seven branches at the crotch will not be nearly so apt to split down as one with only two or three branches. If the tree is so shaped as to make it impossible to form a good head, tie up one of the best branches so it will grow up straight. Later, cut off all the rest of the tree and form the head out of that branch. Late in the fall, just before it freezes up, bank the trees with dirt 10 or 12 inches high. Be careful to pack the dirt firmly. If pieces of turf are thrown up loosely mice are apt to get in and nest and gnaw the trees. This banking not only protects the tree from mice but it keeps the water from running or standing around it. Then, again, if it is an unusually severe winter and kills the tender tree back, it will not usually kill it below the top of the mound. That leaves plenty of live wood between the bud and the top of the mound from which new limbs will start, and a new head can be formed from one of these.

The writer used to raise a crop of corn or potatoes in the orchard the first year and gives clean cultivation to all the land every year after until the last of July or first of August. Experience has taught that it is mighty hard in this locality to raise a cover crop, after the trees are three or four years old, that will add much humus to the soil. So now I am trying to raise some legumes the first few years to store up humus for the orchard later.

Pruning.—The second spring cut off one-half or two-thirds of the last year's growth. Along in August or the first of September thin out the branches where they are too thick. From this time until time of fruiting do not allow the branches to become too thick, for it is fruit that we are after. If the head is thick the fruit may set, but it will drop. After the trees come into bearing they need very little trimming, except to cut off broken limbs and cut out the dead wood, with a little thinning of the head occasionally.

ORDER OF SEASON'S WORK.

Along in February we begin to trim the old trees, leaving the young ones until the last, as they are more apt to be killed back, and the longer we can leave them the plainer they show where they

are killed. We pick up the brush on a wooden shod sled without any pole in it. This brings the load near the ground and takes very little room in turning. Just as soon as it does not freeze much during the night we begin to spray with lime-sulfur. In other words, we leave it just as long as possible and still get through before the leaves get started too much. We then plant what trees we have bought. This should be completed in April, but in favorable seasons if the work is not finished before the 10th or 12th of May the trees will grow all right. Make it a point, however, to get the trees planted just as early as possible.

Next comes the fertilizing of the older orchards and the harrowing. This may or may not be the first harrowing. Just as soon as the ground is dry enough we start the harrow, working one way one week and crossways the next. Let neither haying nor hoeing interfere with the harrowing, but keep at it every week from early spring until the last of July or first of August. When the fertilizing is done we dig the borers and hoe the young trees. In August and the first part of September we trim the young trees.

If we are blessed with a crop we begin to harvest it toward the last of July. Before harvesting begins we go through the orchard every five or six rows tying back the limbs and raking out the stone to make a road so as to get through with a one-horse wagon. This wagon should be so rigged as to carry 40 or 50 baskets. Two men can draw a great many more peaches in a day on a wagon of this kind than on one that will carry 15 or so. At this time of all times we want the work to count. The peaches are picked and set beside these roads. Later, the men go through and pick up the baskets and draw them to the packing shed, which is located in the orchard. Plan to keep all the work as near together as possible; then it is easier to look after, and if it is necessary to change part of the help from one kind of work to another, there is not so much lost time. For instance, if the packing shed is right in the orchard, and one wishes to load a wagon of 200 or 300 or more baskets in a hurry, he can call a gang of pickers and in a very few minutes the load is ready to go.

The peaches are picked by sight, not by touch, for the latter way takes too much time. Divide the pickers into gangs and put a foreman in charge of each gang. The size of the gangs depends upon the kind of men that make them up. If they are men of experience who will work anyway, then the foreman can take charge of 7 or 8, and pick himself. If, however, they are inexperienced pickers and are men who are in the habit of working under a boss, don't give the foreman more than 6 or 7, and tell him not to pick a peach himself. Don't try to economize by giving the foreman too many men; better hire another foreman. Being near our market we let the fruit ripen on the trees; therefore some of it gets the best

of us and drops. The first thing every morning the men go through the orchard and pick up what have fallen. In this way they do not destroy them while working, and they are ready for the day's retail trade and the peddlers.

By going through the orchard in the winter and picking the dried or rotten peaches, and burning or burying them, and by going through the Greensboro just before they begin to get ripe and picking the rotten peaches, we have had very little trouble with peaches rotting on the trees. Let us go back for a few minutes to the trimming of the tree. We have made it a spreading tree, to allow the sun to get at the fruit to give it high color. Therefore, in order to save many of the trees from destruction, we are obliged to bolt many bad crotches and wire from one limb across to the opposite one. This can well be done by using about No. 108 screw eyes which are screwed into the wood. Wire across with about No. 12 wire. Many limbs can also be saved when carrying a heavy load by tying one limb to another with soft, strong string. Care should be taken when tying trees in this way not to tie too short, but to allow the limbs to bend well over before the string supports them. If they are tied too short it makes the bend in the limb too sharp, and it will break just above the string. After the crop is harvested these strings should be cut off to prevent them from injuring the trees. The fertilizer should be bought in the late fall or winter, so that it can be drawn during the slack season, and be on hand when needed. It is well to have a little nitrate of soda on hand; then if the trees are making a slow growth, and the fruit begins to drop too much, put on some, or if a tree here or there does not look quite thrifty doctor it with a little nitrogen. Do not put on too much at a time, but put it on two or three times if necessary.

After the peaches are unloaded at the sorting shed they are sorted by women. We insist that the fruit be handled with care both by pickers and sorters. One woman has charge over the other sorters. This woman also has charge of the retail trade. The peaches are sorted so that most of them are No. 1's or No. 2's. However, the very ripe ones and the specked ones are sorted out, also the very large ones, which are marked "extras." Make the peaches the same grade all through the basket. Toward the top, place the red side of the peach up and round the basket. A basket finished off this way is pleasing to the eye. After the peaches are sorted they are loaded on the wagon or wagons, according to the number of baskets on hand. One three-horse wagon carries 336 baskets. This wagon was built specially for hauling peaches. In the rush season it makes two trips a day, or rather in twenty-four hours, to Springfield wholesale houses, a distance of about 10 miles. It starts about 1 o'clock A.M., and returns about 9 or 10 o'clock.

The wagon is again loaded and another team goes with it, returning in the evening or night, according to the traveling. This time the wagon is loaded by lantern light, ready to start in the morning.

Now we have gotten the peaches to the wholesale houses, where they are sold on commission. Right here I want to say a word about the wholesale men. We read so much in the farm papers about the wholesale men, as if they were our enemies, trying to rob us, and so little about the help they are to us. How could we handle our crops without them? I consider the wholesale men my friends and helpers. If I did not have confidence in them I should want to go out of the fruit business to-day. I believe that there are just as upright, honest men in the wholesale business as there are in any other, raising peaches not excepted. Furnish them with the best of produce and they will be anxious for your patronage, and get the best prices that they can for you. Let us hope that occasionally, at least, the farm papers may have a word of praise for the wholesale men.

At harvesting time a man has a great deal to look after, and is very busy. The better his system the easier and better he can take care of his business. Having put a woman in charge of the sorters he can go into the sorting shed and look around. If he sees that the baskets are not full enough, or are too full, or that the sorting is not done right, he does not have to hunt up the one that made the mistake, but simply call the attention of the woman in charge to the error. She looks after it. If a customer comes and wishes to buy a few baskets of peaches he can just say, "The lady will wait on you." He can then go into the orchard and look around. If he finds that a tree has been skipped, that the peaches are being picked too green, or not close enough, or are being too roughly handled, or, again, if he wants a gang of men to go somewhere else to work, he simply has to tell the foreman, who looks out for the rest. In this way a man can handle an enormous amount of work. While men who have large gangs of men working all the year round have a system, we who have a large gang of men for only a few weeks are apt to handle them in a slipshod way.

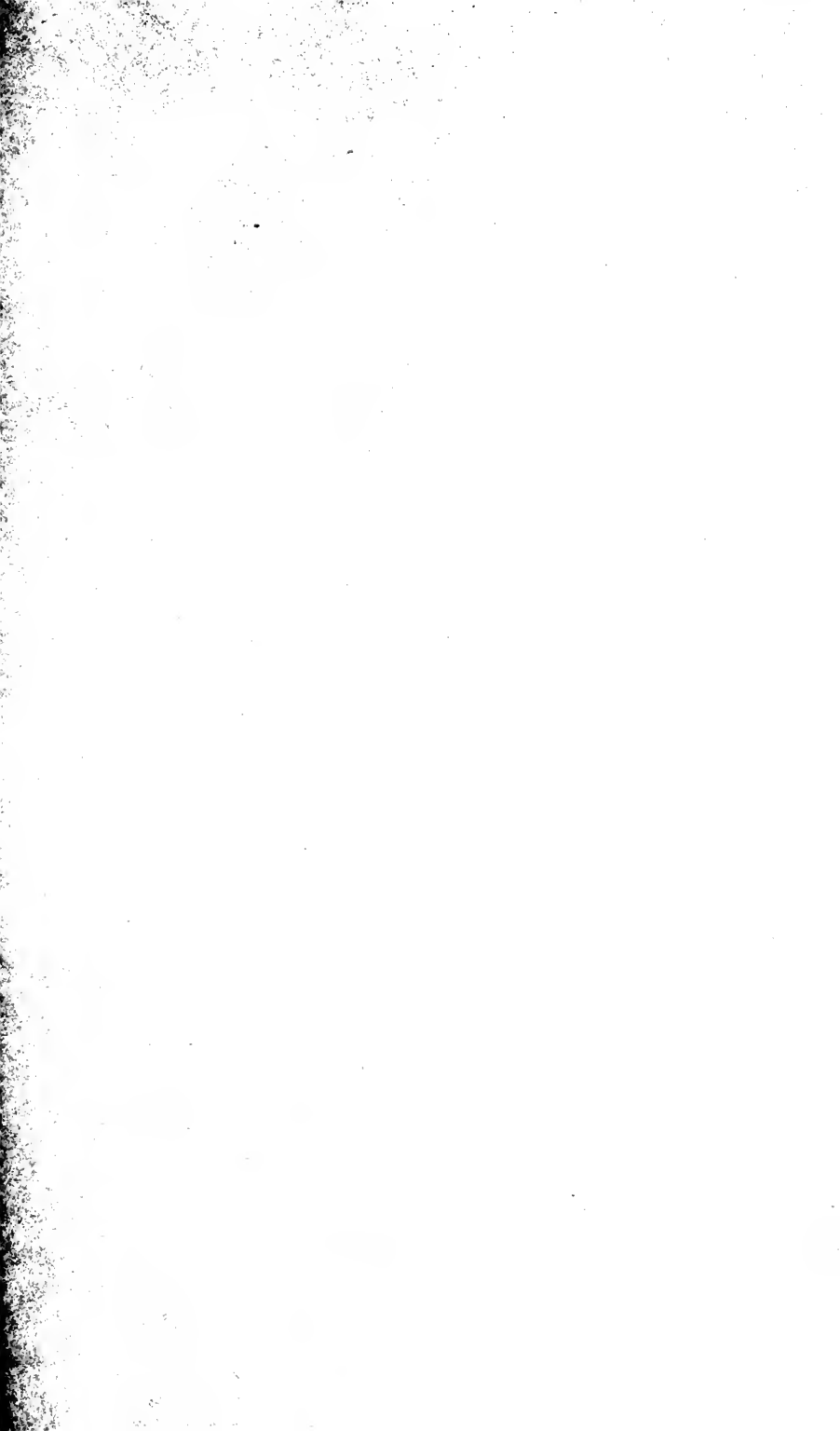
Baskets.—Buy your baskets early, that is, just as soon as the winter is far enough advanced so that you are reasonably sure of a crop, so as to get the hauling out of the way and have the baskets on hand. Then, too, they are generally a little cheaper at this time than at harvest time. While harvesting keep close watch of your stock of baskets and the amount of peaches to be picked. If you see that you are going to run short order more just as soon as possible, for sometimes it is difficult to get baskets at this season. If you have not baskets enough to hold the crop, and cannot get them, then you must let the peaches rot on the ground, and you have had

the expense, labor and anxiety all for nothing. Better carry over 1,000 baskets than be 100 short.

Deer Damage.—In some fields the trees, especially apple trees, are badly damaged by deer. The writer built a fence around an 11-acre field, using woven wire 55 inches high at the bottom, and put two barbed wires about a foot apart on top, making the fence about 6½ feet high, putting the posts a rod apart at a cost of 82 cents a rod, put up. One of our good assessors told one of the men, "We can assess him more for that field next year for putting that fence around it." That is the way we fruit men have to take it. The State protects the deer. We try to protect our trees from the deer, and the assessor comes along and gives us a whack for doing it.

Pheasants.—In our own locality it looks as though we were going to have, or rather already have a pest much worse than the deer and harder to fence,—the pheasant. In the spring of 1911 there were many buds eaten in the writer's orchard. He was satisfied in his own mind that it was pheasant's work, for they were often seen in the orchard, but never caught budding. However, one of my neighbors saw one budding in his orchard a few days ago. These birds are getting to be very numerous in this section. Twenty-two were seen in an open field a few weeks ago.

The writer has an orchard where there was about 550 peach trees set ten years ago; this spring there are less than 200 left. In another orchard of about 750 peach trees set seven years ago, this spring there are 360 left. Yellows are to blame for nearly all of these trees being pulled out. The best stump puller that ever came into this section is a four-horse team, combined weight about 6,000 pounds.



MASSACHUSETTS
CROP REPORT

FOR THE
MONTH OF JULY, 1913.

CO-OPERATION.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

WILFRID WHEELER, Secretary.

ENTERED JUNE 3, 1904, AT BOSTON, MASS., AS SECOND-CLASS MATTER,
UNDER ACT OF CONGRESS OF JUNE 6, 1900.

BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
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1913.

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CROP REPORT FOR THE MONTH OF JULY, 1913.

OFFICE OF THE STATE BOARD OF AGRICULTURE,
BOSTON, MASS., Aug. 1, 1913.

Crop conditions and prospects as affected by weather and other causes are herewith set forth for the month of July. We have had a long siege of drought and many crops have suffered greatly therefrom.

The expressions of appreciation of the special reports which are being received are very gratifying, and consistent efforts are being made to strengthen the staffs of correspondents in the different specialties in order that the summary of reports may be fully representative of these several industries in the State.

The special article this month is upon "Co-operation," a subject which is especially vital to the future agricultural welfare of Massachusetts and New England. We can hardly expect to compete with other States and with the west if we, as individuals, insist upon competing with each other here in our own State in the supplying of the products of the farm, garden and orchard. Mr. C. R. White, president of the New York State Vegetable Growers' Association, is one who is eminently fitted to cope with such a subject, and his article contains data which will be found exceedingly helpful in giving a preliminary idea of the formation, conducting and resultant benefits of the co-operative organization as applied to both buying and selling by the farmer.

WEATHER OF JULY.

July was warmer than usual, with precipitation from 40 to 50 per cent below the normal. The month opened with a week of very warm, oppressive weather, during which the daily temperatures ranged well into the 90's, and in some

localities reached the century mark. The temperatures throughout the rest of the month were remarkably even, rising above 80° almost daily, and dropping to between 60° and 70° at night. The mean temperature of the month ranged from 2° to 3° above the July normal. The droughty conditions that prevailed through June were a conspicuous feature of July, although the drought was of less intensity than in the preceding month. The rainfall, while greatly deficient, was well distributed throughout the month in light to moderate showers, so that the effect on growing crops and vegetation in general was much less unfavorable than it would have been in case the precipitation had resulted from a few storms. The prevalence of fair weather, with an abundance of sunshine, was very favorable for harvesting and housing grain and grass. At the close of the month rain is much needed in about all sections of the State.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending June 30. — New England. Boston: The rainfall was small, but the temperature was seasonable. Clear weather prevailed, and in the main conditions were favorable, but rain would be beneficial.

Week ending July 7. — New England. Boston: High temperature and clear weather prevailed, except for copious showers at the close of the week in the northern portion. Rain is needed in the southern States.

Week ending July 14. — New England. Boston: There was abundant sunshine, and during the last of the week there were beneficial showers, but more rain is needed. Temperatures were seasonable.

Week ending July 21. — New England. Boston: Temperatures were seasonable and sunshine was abundant. Showers occurred, but generally were light. Conditions are decidedly dry, and rain is greatly needed in southern New Hampshire and the interior of Massachusetts.

PUBLICATIONS.

The premium list of the third Biennial New England Fruit Show is now available, and copies may be secured by applying to this office. The show will be held Nov. 12 to 16, 1913.

Circular No. 3, entitled "Balanced Rations for Dairy Stock," written by Dr. J. B. Lindsey, chemist to the Board and of the Massachusetts Agricultural Experiment Station at Amherst, is a publication that every dairyman should secure. It gives the composition of the different cattle feeds, their digestibility, the method of measuring the efficiency of feeding stuffs, the nutritive ratio of cattle feeds, methods of combining coarse and concentrated feeds (balancing rations), different types of balanced rations, giving amounts of each article, and rations for young stock.

A list of all available publications has just been received from the printer and this is printed herewith in full.

LIST OF AVAILABLE PUBLICATIONS, JULY 1, 1913.

A synoptical and analytical index to the publications of the Massachusetts State Board of Agriculture, available for distribution on July 1, 1913, has been prepared, but, owing to lack of funds, cannot be published. The following list, however, gives the title, author and date of all publications available, or in press, on the above date.

Copies of bulletins, circulars, separates, nature leaflets and the Crop Report will be mailed to any one free of charge. The expense of shipping the annual and special reports must be borne by the applicant. The special reports are sold at cost of preparing, printing, binding and wrapping.

New information is constantly accumulating and being published as time for proper editing and appropriations permit. An article is seldom reprinted without prior submission to the author for additions and corrections, and thus is kept thoroughly up to date. Appendices to this list will be added from time to time, and readers of the Crop Report will be regularly posted through its columns as to new publications.

It is not possible to keep every publication in stock continuously. Applicants will, however, be notified by letter, or otherwise, whenever the editions of publications requested are exhausted. In most cases their names will be filed, in order that copies of the new editions may be forwarded when issued.

Bulletins of Massachusetts Agriculture.

Free, postpaid, on request. Order by number.

1. "Poultry Culture." Third edition, revised. October, 1912.
2. "Apple Growing." Fourth edition, revised. July, 1913.
4. "Small Fruits and Berries." Second edition, revised. December, 1912.
5. "Vegetable Growing." First edition. November, 1911.
6. "Dairying." First edition. In press, July 1, 1913.

Apiary Inspection Bulletins.

Free, postpaid, on request. Order by number.

2. Annual Report of the State Inspector of Apiaries for the year 1910.
4. Annual Report of the State Inspector of Apiaries for the year 1911.
5. "Some of the Essentials of Beekeeping," by Dr. Burton N. Gates, 1912.

Nursery Inspection Bulletins.

Free, postpaid, on request. Order by number.

1. "The White-pine Blister Rust," by Dr. H. T. Fernald, June, 1912.

Circulars.

Free, postpaid, on request. Available in quantities to organizations and individuals that can place them in the hands of persons who may be benefited thereby.

1. "Food Value of Milk." by Mr. P. M. Harwood. Third edition, revised. April, 1913.
2. "Insecticides, Fungicides, and Directions for their Use." by Dr. H. T. Fernald, 1913. (Supplants Nature Leaflet No. 4.)
3. "Balanced Rations for Dairy Stock," by Dr. J. B. Lindsey, 1913. (Supplants Nature Leaflet No. 42.)
4. "Apple Packing for Massachusetts Growers," by Mr. Albert R. Jenks. In press, July 1, 1913.

5. "Pork Making for Massachusetts Farmers," by Dr. Geo. M. Twitchell. In press, July 1, 1913.
6. "Three Common Scale Insects," by Dr. H. T. Fernald. In press, July 1, 1913. (Supplants Nature Leaflet No. 33.)

Separates (Advance Sheets and Reprints from the Annual Report).

Free, postpaid, on request. Order by number.

1. "The Home Garden," by Prof. F. W. Rane, 1906.
2. "Drainage," by Prof. Wm. P. Brooks, 1908.
3. "Some Sheep Topics for Massachusetts Farmers," by Prof. R. L. Gribben, 1908.
4. "The Farmer's Interest in Game Protection," by Mr. E. H. Forbush, 1910.
5. "Alfalfa as a Crop in Massachusetts," by Prof. Wm. P. Brooks. Second edition, revised. In press, July 1, 1913.
6. "Growing and Marketing of Asparagus," by Mr. Frank Wheeler, 1910.
7. "Celery Growing, Storing and Marketing," by Mr. Henry M. Howard, 1910.
8. "New England Pastures," by Mr. J. S. Cotton, 1910.
9. "The Production of Market Milk," by Mr. A. J. Pierpont, 1910.
10. "Corn Growing in New England," by Prof. L. A. Clinton, 1910.
11. "Soiling and Summer Silage," by Mr. H. O. Daniels, 1911.
12. "The Production of Sanitary Milk by our Present Milk Producers," by Dr. Charles E. North, 1911.

Annual Reports, "Agriculture of Massachusetts."

Free, on request at the office of the Board. Sent by express, charges collect; sent, postpaid, on receipt of stamps to cover cost, which for single volumes is as follows: 1894, \$0.26; 1895, \$0.22; 1897, \$0.24; 1898, \$0.24; 1899, \$0.22; 1902, \$0.21; 1903, \$0.22; 1904, \$0.22; 1910, \$0.23; 1911, \$0.21. When more than one volume is wanted it is generally cheaper to have shipment made by express. Order by year.

Special Reports.

"Useful Birds and their Protection," by Mr. Edward Howe Forbush, State Ornithologist. Fourth edition, revised and enlarged. In press, July 1, 1913.

A book of 451 pages, bound in red cloth, and illustrated by a colored frontispiece, 60 plates and 171 figures in the text. Con-

tains brief descriptions of the more common and useful species of Massachusetts, with accounts of their food habits, and a chapter on the means of attracting and protecting birds. Price, \$1. Sent, postpaid, on receipt of \$1.38; sent, express charges collect, on receipt of \$1. Make checks and money orders payable to Wilfrid Wheeler, Secretary State Board of Agriculture.

“A History of the Game Birds, Wild Fowl and Shore Birds of Massachusetts and Adjacent States,” by Mr. Edward Howe Forbush, State Ornithologist, November, 1912.

A book of 638 pages, bound in green cloth, and illustrated by a colored frontispiece, 36 plates, 82 cuts, and 26 figures in the text. Consists of: Part I — A history of the birds now hunted for food or sport in Massachusetts and adjacent States; Part II — A history of the game birds and other birds hunted for food or sport which have been driven out of Massachusetts and adjacent States, or exterminated since the settlement of the country; Part III — The conservation of game birds, wild fowl and shore birds. Price, \$1. Sent, postpaid, on receipt of \$1.40; sent, express charges collect, on receipt of \$1. Make checks and money orders payable to Wilfrid Wheeler, Secretary State Board of Agriculture.

Massachusetts Crop Report.

Published on or about the 8th of each month — June to November — for the months of May to October, inclusive.

Sent regularly, free of charge, to all persons on the mailing list (the only general mailing list maintained). Order back numbers by month and year. These, with titles of special articles, follow: —

October, 1911. “Mushroom Growing,” by Prof. B. M. Duggar.
Adapted.

June, 1912. “Irrigation in Massachusetts,” by Mr. Henry M. Howard.

July, 1912. “Siles and Silage,” by Mr. H. O. Daniels.

August, 1912. “Ducks and Geese,” by Mr. John H. Robinson.

October, 1912. “Some Suggestions on Barn Building,” by Prof. J. A. Foord.

June, 1913. “Peach Growing,” by Mr. L. W. Rice. In press,
July 1, 1913.

Nature Leaflets.

Free, postpaid, on request. Available to teachers in quantities as desired, and as editions permit. Order by number.

1. "Canker Worms," by Mr. A. H. Kirkland. Second edition.
2. "Tent Caterpillars," by Mr. A. H. Kirkland. Second edition.
3. "The Black-knot of the Plum and Cherry," by Dr. G. E. Stone. Third edition.
5. "The White-marked Tussock Moth," by Dr. H. T. Fernald. Fourth edition, December, 1912.
6. "The Spiny Elm Caterpillar," by Dr. H. T. Fernald. Third edition.
7. "Potato and Apple Scab," by Dr. G. E. Stone. Third edition, revised.
8. "Insects Injuring Lawns: The May Beetle in Lawns and Ants in Lawns and Houses," by Dr. H. T. Fernald. Fourth edition.
9. "Poison Ivy," by Dr. G. E. Stone. Third edition, revised.
10. "The Datanas," by Dr. H. T. Fernald. Third edition, revised.
11. "Quince Rust," by Dr. G. E. Stone. Third edition.
12. "Winter Birds at the Farm," by Mr. E. H. Forbush. Third edition, revised.
13. "Peach Leaf-curl," by Dr. G. E. Stone. Third edition, revised.
14. "Owl Friends," by Mr. E. H. Forbush. Third edition, revised.
15. "Bird-houses," by Mr. E. H. Forbush. Fourth edition.
16. "Our Friend the Chickadee," by Mr. E. H. Forbush. Fourth edition.
17. "Bordeaux Mixture," by Dr. G. E. Stone. Third edition, revised.
18. "Plant Lice or Aphids," by Dr. H. T. Fernald. Second edition.
19. "Edible Weeds and Pot Herbs," by Dr. G. E. Stone. Third edition, revised.
20. "Massachusetts Weeds," by Dr. G. E. Stone. Third edition, revised.
21. "Potato Rots," by Dr. G. E. Stone. Third edition, revised.
22. Hints for Out-door Bird Study. I. "How to identify Birds."
23. Hints for Out-door Bird Study. II. "How to find Birds."
24. Hints for Out-door Bird Study. III. "How to approach Birds."
25. Hints for Out-door Bird Study. IV. "How to attract Birds." (Nos. 22, 23, 24, and 25, by Mr. E. H. Forbush. Fourth edition, revised.)
26. "The Brown-tail Moth," by Mr. A. H. Kirkland. Third edition, revised.

27. "The Gypsy Moth," by Mr. A. H. Kirkland. Third edition.
28. "The Garden Toad," by Mr. A. H. Kirkland. Third edition.
December, 1912.
29. I. "School Gardens," by Mr. H. D. Hemenway. Second edition.
30. II. "Planting and Care of the School Garden," by Mr. H. D.
Hemenway. Second edition.
31. III. "Crops for the School Garden," by Mr. H. D. Hemenway.
Second edition.
32. IV. "Results of School Gardening," by Mr. H. D. Hemenway.
Second edition.
34. "The First Principles of Bee Keeping," by Dr. J. B. Paige.
Second edition.
35. "Window Gardening," by Mr. H. D. Hemenway. Second
edition.
36. "Hotbeds," by Mr. H. D. Hemenway. Second edition.
37. "How to test Seeds," by Mr. H. D. Hemenway. Second edition.
38. "How to plant," by Mr. H. D. Hemenway. Third edition. Feb-
ruary, 1913.
39. "Milk: Its Character and Value as a Food," by Dr. J. B. Lind-
sey. Third edition, revised.
40. "Care of Milk in the Home," by Mr. P. H. Smith. Second
edition.
41. "The European Elm-leaf Beetle," by Mr. A. H. Kirkland. Sec-
ond edition, revised. February, 1913.
43. "The Leopard Moth," by Mr. W. S. Regan. Second edition.
44. "Root and Cleft Grafting," by Mr. H. D. Hemenway.
45. "Planting and Care of Trees," by Mr. H. D. Hemenway.
46. "How to beautify the Home Grounds," by Mr. H. D. Hemenway.

AGRICULTURAL FAIRS, 1913.

| PLACE. | DATE. | SECRETARY. |
|--|--|--|
| Amesbury, | September 23, 24 and 25, | M. H. Sands, Amesbury. |
| Amherst, | September 23 and 24, . . | James W. T. Davis, Amherst. |
| Athol, | August 30 and September 1 and 2. | Albert Ellsworth, Athol. |
| Barnstable, | August 26, 27 and 28, . . | Marcus N. Harris, Barnstable. |
| Barre, | September 25 and 26, . . | Daniel H. Rice, Barre. |
| Blandford, | September 10 and 11, . . | Enos W. Boise, Blandford. |
| Boston (Massachusetts Horticultural Society). Bridgewater, | September 12, 13 and 14 and October 3, 4 and 5, September 17 and 18, . . | William P. Rich, Horticultural Hall, Boston. Howard B. Wilbur, West Bridgewater. |
| Brockton, | September 30 and Octo- ber 1, 2 and 3. | Perley G. Flint, Brockton. |
| Charlemont, | September 11 and 12, . . | S. W. Hawkes, Charlemont. |
| Clinton, | September 10, 11 and 12, | Warren Goodale, Clinton. |
| Cummington, | September 23 and 24, . . | Clement F. Burr, Worthington. |
| Fitchburg, | October 11, 13 and 14, . . | J. C. McMullen, Fitchburg. |
| Framingham, | September 18, 19 and 20, | Peter N. Everett, Framingham. |
| Great Barrington, | September 23, 24, 25 and 26. | Joseph H. Maloney, Great Barrington. |
| Greenfield, | September 17 and 18, . . | J. H. Murphy, Greenfield. |
| Hingham, | September 23 and 24, . . | William L. Howard, Hingham. |
| Lenox, | August 20 and 21 and Oc- tober 22 and 23. | George H. Instone, Lenox. |
| Lowell, | September 11 and 12, . . | George B. Coburn, Lowell. |
| Marshfield, | August 20, 21 and 22, . . | Israel H. Hatch, North Marshfield. |
| Middlefield, | September 3 and 4, | John T. Bryan, R. F. D., Chester. |
| Nantucket, | August 20 and 21, | Josiah F. Murphy, Nantucket. |
| North Adams, | August 29 and 30 and September 1. | George F. Miller, North Adams. |
| Northampton, | October 1 and 2, | Chas. A. Montgomery, Northampton. |
| Oxford, | August 28 and 29, | James E. Darling, Oxford. |
| Palmer, | October 3 and 4, | George E. Clough, Palmer. |
| Reading-Wakefield, | September 23, 24 and 25, | Arthur W. Coolidge, Reading. |
| South Weymouth, | September 11, 12 and 13, | Thos. V. Nash, South Weymouth. |
| Spencer, | September 17 and 18, . . | George H. Ramer, Spencer. |
| Sturbridge, | September 11 and 12, . . | George H. Clemence, Southbridge. |
| Topsfield, | September 16 and 17, . . | Fred A. Smith, Ipswich. |
| Uxbridge, | September 16 and 17, . . | Dr. M. R. Sharpe, Uxbridge. |
| Westport, | September 23, 24, 25 and 26. | E. M. Burt, (President,) Westport. |
| West Taunton, | September 23, 24 and 25, | George A. Lincoln, Taunton. |
| West Tisbury, | August 26, 27 and 28, . . | F. Allen Look, West Tisbury. |
| Worcester, | September 1, 2, 3 and 4, | Elisha S. Knowles, Worcester. |

SUMMARY OF GENERAL CROP CONDITIONS.

In the circular to general crop correspondents, returnable July 24, the following questions were asked:—

1. What insects are now proving most troublesome in your locality? (Name in order of greatest damage done.)

2. What is the condition of Indian corn? (Give per cent of normal.) What proportion of the crop is grown for ensilage? (Give per cent.)

3. How does the hay crop compare with normal in quantity? (Give per cent.) In quality? (Give per cent.)

4. What forage crops are being raised? (Name in order of importance and give condition of each in per cent.)

5. What is the condition of potatoes? (Give per cent.) Of other market-garden crops? How have those already harvested compared with former years in yield? (Give per cent.) In price?

6. What is the prospect for the following fruits? (Give per cent.) Apples, pears, peaches, plums, quinces, grapes, cranberries.

7. What is the condition of pasturage? (Give per cent.)

8. (a) What is the condition compared with normal of the following forage crops? (Give per cent.) Rye, oats, barley. (b) If raised for grain what is the prospect for the following crops? (If already harvested make note of this fact, and give per cent.) Rye, oats, barley.

9. Give estimated acreage of new apple orchards set in your town during 1912 and 1913.

Returns were received from 123 correspondents, and from these returns the following summary was compiled:—

INSECTS.

The most prevalent insect of the month is the Colorado potato beetle. Of the 197 reports of insect damage, 80, or 40 per cent, are of injury by these pests. The three western

counties are the worst sufferers. There are several reports of positive control of the potato beetle by spraying, and at least one report of failure to stop its ravages by this means. There is no reason why the beetle cannot be controlled in all cases by well-timed sprayings with arsenate of lead, or Paris green, combined with Bordeaux mixture for the prevention of blight which is so widespread and yet, year after year, allowed to shorten the potato crop unheeded. Both beetle and blight are constant in their appearance and must be as constantly combated. The next most troublesome insect is the elm-leaf beetle with 10.5 per cent reports, coming chiefly from Worcester, Middlesex, Bristol, Plymouth and Berkshire. In order named, the next most injurious insects, with percentage reports of all reports and counties principally affected, are: squash bugs, 10, in Hampden, Worcester, Hampshire and Plymouth; gypsy moth, 6, in Essex, Plymouth and Norfolk; cutworms, 5.5, in Bristol, Hampshire, Franklin and Plymouth; tent caterpillars, 3.5, in Norfolk, Plymouth, Barnstable and Middlesex; brown-tail, 3, in Middlesex, Essex, Barnstable and Worcester; cabbage worm, 2.5, in Plymouth, Middlesex, Hampden and Worcester; cucumber beetle, 2.5, in Hampden, Essex, Barnstable and Bristol; aphids, 2, in Norfolk, Berkshire and Hampden. Onion thrips in Hampshire, onion maggots in Hampshire and Essex, apple tree borers, squash borers, codling moths, white grubs, bag worms, stock flies, San José scale, wireworms and a few others were named. The cranberry black-headed fire-worm is mentioned by 33.3 per cent of the correspondents in Barnstable. A single report of pine-tree blister rust in Berkshire shows this serious disease to be present locally.

INDIAN CORN.

The condition of corn has dropped off 3.6 points since June 27, owing to the drought and to poor germination of late-planted fields. On some sandy soils the leaves are curling, and it is evident that the crop will come to maturity before reaching its full growth unless August brings copious rains. The condition is: Dukes, 100; Plymouth, 96; Bris-

tol, 91.7; Norfolk, 90; Barnstable, 88.7; Essex, 86.7; Hampshire, 85; Worcester, 81.6; Berkshire, 81.2; Hampden, 81.1; Middlesex, 78.3; Franklin, 72.6; the State, 84.1.

The proportion of Indian corn grown for ensilage is: Norfolk, 76; Middlesex, 57.2; Worcester, 56.8; Essex, 55; Franklin, 49.8; Berkshire, 48.7; Hampshire, 47.2; Bristol, 42.2; Hampden, 41.4; Plymouth, 18.3; Dukes, 15; Barnstable, 14.2; the State, 47.2, as compared with 44.6 in 1912.

THE HAY CROP.

The bulk of the hay crop has been harvested, — enough to allow a fairly accurate estimate to be made, although the aggregate yield may be slightly below because of the rapid ripening of grass not harvested and of the tendency of farmers to let their poorer fields go until the end of the cutting season. Owing to the effects of the unforeseen continuance of the drought, the prospect estimate for the State on June 27 was 1.2 per cent higher than the yield estimate on July 24. The yield compared with normal is: Norfolk, 89.6; Plymouth, 86; Bristol, 85; Essex, 83.7; Hampshire, 81.2; Middlesex, 79.5; Worcester, 79.4; Hampden, 78.6; Franklin, 77; Barnstable, 70.8; Dukes, 70; Berkshire, 64.2; the State, 78.6.

While the dry weather hastened the ripening of, and shortened, the crop, the lack of showers gave farmers opportunity to harvest their hay without delay and in excellent condition. The quality is: Franklin, 101.1; Norfolk, 99; Plymouth, 98; Hampshire, 97.2; Worcester, 95.2; Essex, 93.7; Berkshire, 93.5; Hampden, 92.2; Middlesex and Bristol, 90; Barnstable, 85.4; the State, 94.4.

POTATOES.

Serious damage has been done both early and late potatoes by the drought, and the prospect is far from encouraging. The tubers sprouted unevenly in some cases. One correspondent in Hampshire county reports that the tops look well but the tubers are undeveloped. The condition is: Bristol, 87.8; Norfolk, 87; Essex, 86.3; Plymouth, 85.6; Dukes,

80; Middlesex, 75.5; Berkshire, 75.5; Hampshire, 74.9; Worcester, 72.1; Barnstable, 70; Franklin, 65.5; Hampden, 56.6; the State, 73.7. Some loss has been caused by the potato beetle, but more will be done by blight unless preventive measures have been taken. The tubers develop most rapidly in the last two or three weeks of the season, and sprayed fields will surely respond to August rains.

The condition of other market-garden crops is: Plymouth, 93.3; Norfolk, 90; Essex, 85; Hampden, 83.8; Bristol, 83; Middlesex, 78.4; Hampshire, 78.1; Berkshire, 78.1; Worcester and Dukes, 75; Barnstable, 70.7; Franklin, 66.3; the State, 84.6.

The returns relative to the yield of market-garden crops not harvested reflect the adverse weather conditions. The estimates are: Norfolk, 91.7; Plymouth, 88.3; Bristol, 86; Essex, 85; Middlesex, 82.5; Hampshire, 80.1; Berkshire and Dukes, 75; Worcester, 73.3; Barnstable, 71.4; Hampden, 47.7; Franklin, 33.5; the State, 78.5. Root crops are growing slowly.

Prices, fortunately, have ruled as high or higher than normal in all but Bristol and Plymouth. As compared with normal, truck garden crops have brought prices as follows: Berkshire, 106.7; Middlesex, 106; Barnstable, 105; Essex, 102.5; Worcester, 102.3; Plymouth, 101.6; Hampshire, 100.3; Hampden, Norfolk and Dukes, 100; Franklin, 98.3; Bristol, 94; the State, 102.1.

FRUITS AND BERRIES.

There is considerable apprehension that the continuance of the drought will seriously affect still further fruits not yet harvested. Apples, with a prospect of 49.8 per cent, will be the poorest fruit crop all over the State. Early varieties of apples will be a better crop than winter varieties. Blackberries continue to offer the prospect of being the best fruit crop this year.

The fruit-crop prospect table is printed in the special summary of fruit-crop conditions.

PASTURAGE.

Rain, reported in June as so badly needed for upland pastures, did not arrive. Consequently, the pasturage condition estimate for the State has slumped 18.2 points during the past month. Pastures are generally short in midsummer, but are probably better this year than for the past three years because of the fine start in the early spring. There is a great opportunity for improvement in our pasturage management, for many pastures could be made to produce more feed than at the present time.¹ The percentage condition is: Plymouth, 88; Dukes, 85; Hampshire, 67.3; Franklin, 66.5; Bristol, 66.1; Essex and Norfolk, 65; Berkshire, 64.5; Worcester, 63.3; Hampden, 60; Barnstable, 52; Middlesex, 50.5; the State, 71.4.

FORAGE CROPS.

Crops grown for forage in order of their condition are: soy beans, 100, Middlesex;² rye, 90; mangels, 90, Berkshire;² oats and peas, 88.3; sweet corn, 86.7; turnips, 85, Berkshire;² millet and corn, 85, Bristol;² Hungarian grass, 80.5; wheat, 80, Bristol;² corn, 79.5; oats, 76; barley, 75.2; carrots, 75, Berkshire;² millet, 74.2; alfalfa, fair on old fields, Barnstable;² and vetch, Hampden.²

The recent annual shortage of pastures makes it imperative that farmers grow these crops more and more. Alfalfa culture is proving profitable wherever soil requirements are met, and firmly established fields provide a most nutritious feed both as forage and as hay.

SMALL GRAINS.

With the exception of corn, the raising of grain is confined principally to Worcester and counties westward, although very little is raised in Franklin. Only 6 correspondents report barley as a grain crop, while 34 report oats and 45 mention rye. The condition of rye is: Franklin, 100; Hamp-

¹ See separate No. 8, on "New England Pastures," by Mr. J. S. Cotton, 1910, published by this Board.

² One report.

shire, 93.3; Worcester, 87.9; Hampden, 85; Berkshire, 78.1; the State, 72.4. The condition of oats is: Worcester, 84; Berkshire, 76.5; Hampden, 75.7; Hampshire, 72.1; Franklin, 50; the State, 78.5. The condition of barley as averaged from the 6 reports is 77.8. More attention might well be given to the growing of corn for grain, as it can certainly be raised more cheaply than it can be purchased at the present prices.

APPLE ORCHARD PLANTING.

In 61 towns of the state an estimated total of 733 acres of apple orchards were set in 1912 and 1913, to date. The number of acres planted, and the number of towns in each county reporting definitely are: Worcester, 215 acres in 16 towns; Hampden, 122 in 6; Berkshire, 91 in 5; Hampshire, 88 in 9; Middlesex, 85 in 6; Plymouth, 50 in 4; Franklin, 34 in 6; Bristol, 29 in 5; Norfolk, 10 in 2; Barnstable, 5 in 1; Essex, 4 in 1. Others report in numbers of trees planted, and the filling in of old orchards. As high as 50 acres in a single town are reported from Berkshire, Hampden, Worcester and Middlesex. The above figures, incomplete though they be, are fairly indicative of the progress made in this industry. Let the good work go on!

NOTES OF GENERAL CROP CORRESPONDENTS.

[Returned to us July 24.]

BERKSHIRE COUNTY.

Williamstown (S. A. HICKOX).—Potato beetles are doing the only injury. Condition of Indian corn, 90; proportion grown for ensilage, 75. As compared with normal the hay crop is an 80 per cent crop; in quality it is 100. Condition of potatoes, 60; of other market-garden crops, 60. As compared with former years those harvested were 75 per cent of a normal in yield and 100 per cent in price. Fruit prospect: apples, 25; pears, 20; plums, 20; grapes, 50. Condition of pasturage, 70. Forage crop condition: corn, 75; rye, 85; oats, 90; barley, 90. Grain crop condition: rye, oats and barley, each 90. The cold nights hold back the corn crop as well as all other crops, and there is much need of rain. Oats not ripe yet. No new orchards have been set, but old ones have been filled in.

Hancock (D. L. WHITMAN). — The most injury is being done by potato beetles. Condition of corn, 80; 30 per cent grown for ensilage. In quantity the hay crop is 50; in quality, 100. Potato crop condition, 100; other market-garden crops, 75. The yield of these already harvested was 75; the price, 110. Fruit prospect: apples, 40; pears, 60; grapes, 100. Condition of pasturage, 60. Condition of oats as a forage crop, 60. Grain crop condition: rye, 60; oats, 80. There were set in town during 1912 and 1913, 2½ to 3 acres of apple orchards.

Dalton (WESLEY B. BARTON). — The only injurious insect is the potato beetle. Indian corn condition, 70; 60 per cent of the crop grown for ensilage. The hay crop is yielding 60 per cent, and is of 80 per cent quality. Condition of potatoes, 80; of other market-garden crops, 80; those harvested have yielded 65 per cent, and have brought 110 per cent prices. Fruit prospect: apples, 25; pears, 30; plums, 10. Pastures are in 75 per cent condition. Peas and oats, Japanese millet, rye, oats and barley are raised for forage. Condition: rye, 90; oats, 75. Grain crop prospect: rye, 90; oats, 75. Rye has been cut. The season is very dry and the prospect for a successful one is not over-bright.

Windsor (HARRY A. FORD). — The potato beetles would be troublesome, but we do not let them do much damage. Indian corn condition is about normal; about half the crop is grown for ensilage. Grass yielded a 75 per cent crop of 100 per cent quality. Potato crop condition, 75. Apples are very few; prospect is for only a 10 per cent crop. Condition of pasturage, 75. Corn, oats, millet and barley are raised for forage. Condition of oats, 100.

Stockbridge (F. A. PALMER). — The elm-leaf beetle is proving most troublesome. Condition of corn, 80; 20 per cent of the crop grown for ensilage. The hay crop is yielding 60 per cent, and its quality is 110. Condition of potatoes, 80. Market-garden crops already harvested have yielded 80 and sold at 100. Fruit prospect: apples, 40; pears, 20. Forage crop condition: corn, 80; rye, 100; oats, 80; millet, 50. Rye has been harvested as a grain crop, with a normal yield, and the prospect for oats is 80. Four acres of new apple orchards have been set in town the past two years. It is very dry, there having been no rain since May. Meadows and pastures show no growth, and the drought has affected all crops, even fruit trees. Hay is mostly harvested and is of fine quality.

Lee (EDWARD J. NORMAN). — Elm-leaf beetles and bag worms are the most troublesome insects, while pine-tree blister rust is present. Condition of corn, 75; 60 per cent grown for ensilage. The hay crop yield is 60; quality, 75; the crop is good on well-manured land, but poor on old dry meadows. Potato crop condition,

70. Farmers' gardens are poor on account of drought; private gardens are 80. Market-garden crops now harvested have yielded 75, and brought 100 per cent prices. Fruit prospect: apples, 40; pears and grapes, 50. Condition of pasturage, 25. Forage crop condition: rye, 50; oats, 80; barley, 40. Grain crop condition: oats, 80; barley, 50. Rye has been harvested, giving a 60 per cent crop. About 100 apple trees have been set. This section is very badly in need of rain. Meadows are drying up and pastures are poor; potatoes have begun to go back, and springs are dry, while root crops, such as mangels and carrots, are growing very slowly.

Becket (WILLIAM H. SNOW).—Potato beetles are the most troublesome insects. Condition of corn, 90; 95 per cent grown for ensilage. Grass lands yielded a 70 per cent crop of 95 per cent quality. Potatoes are late and are now drying up. No market-garden crops harvested. Fruit crop prospect: apples, 75; pears, 60; plums, 50; cranberries, 40. Condition of pasturage, 80. Forage crop condition: rye, 85; oats, 80. Fifty acres of new apple orchards set in town during 1912 and 1913. The early wet spring, frosts and the succeeding long spell without rain are the causes of the light crops of hay, vegetables and fruit.

New Marlborough (E. W. RHOADES).—The most injurious insects are potato beetles, white grubs and apple-tree borers. Condition of Indian corn, 75; one-half the crop grown for ensilage. The hay crop shows a 60 per cent yield of 100 per cent quality. Condition of potatoes, 40; other market-garden crops, 60. Fruit prospect: apples, 30; pears, 90; peaches, 25; plums, 50; grapes, 100. Condition of pasturage, 80. Condition of oats as a forage crop, 60. Grain crop condition: rye, 75; oats, 60.

FRANKLIN COUNTY.

Rowe (HENRY D. WRIGHT).—Potato beetles are causing the most trouble. Indian corn condition, 50; 75 per cent of the crop grown for ensilage. Yield of hay, 75; its quality is normal. Condition of potatoes, 80. Apple prospect, 50. Condition of pasturage, 65. Oats as a forage crop is in 75 per cent condition. Ten acres of new apple orchards have been set in town during 1912 and 1913.

Colrain (W. H. DAVENPORT).—Condition of Indian corn, 75; 50 per cent of the crop grown for ensilage. The hay crop is not over 60 per cent of a normal, but of 100 per cent quality. Condition of potatoes and other market-garden crops, 60; those harvested have yielded very poorly,—not over 40 per cent. Fruit prospect: apples, 50; pears, 40. Condition of pastures, 60. Weather is very cold and dry. Gardens and forage crops sown this spring are nearly a total failure.

Gill (F. F. STOUGHTON).—Not very much insect damage now.

Indian corn is in about a normal condition; 40 per cent grown for the silo. The hay crop is 80 per cent of a normal, and of good quality. Apple crop prospect is very poor on account of frosts. Condition of pasturage, 90, — good early, dry now. Forage crop condition normal; rye, oats, corn and wheat are grown.

Hawley (C. F. SEARS). — Condition of Indian corn, 60; 90 per cent of the crop grown for ensilage. Hay crop is 60 per cent of normal, and of 100 per cent quality. Condition of potatoes, 75. Market-garden crops already harvested have yielded 60. Condition of pasturage, 60. Oats and barley are raised for forage; the latter has been lately sown. Three acres of apple orchards set.

Ashfield (ALBERT HOWES). — Potato bugs are doing the most damage; grasshoppers are beginning to appear in dry pastures. Condition of corn, 80; 75 per cent grown for ensilage. Hay crop is 90, and of 110 per cent quality. Condition of potatoes, 95. Fruit prospect: apples, 50; pears, 90; peaches, 95; plums, 40; grapes, 100. Pastures are in 75 per cent condition. Forage crop condition: fodder corn, 75; millet, 75; oats, 90. A great many apple trees have been set by different farmers. Everything is dry, and rain is badly needed. Live stock, however, is looking unusually well.

Montague (A. M. LYMAN). — The most troublesome insect pests are elm-leaf beetles. Indian corn condition, 80; 50 per cent of the crop grown for ensilage. Hay crop yield, 75; its quality is 100. Condition of potatoes and other market-garden crops, 75; those already harvested have been 90 per cent crops in both yield and price. Fruit prospect: apples, 60; pears, 50; peaches, 25; plums, 40; quinces, 10; grapes, 25. Condition of pasturage, 50. Forage crop condition: rye, 100; oats and barley, each 90; Japanese millet is also grown. Rye as a grain crop is in normal condition. Five acres of apple orchards planted in 1912 and the same number in 1913. Late frosts in May and June destroyed fruit to the extent of 50 per cent of the crop, and the drought has shortened all crops very much.

New Salem (DANIEL BALLARD). — Potato bugs are doing the most damage. Condition of corn, not over 75; perhaps 20 per cent of the crop is grown for the silo. Hay crop yield is about 80; its quality, 100. Condition of potatoes, not over 75. Fruit prospect: apples, 60; pears, 80. Condition of pasturage, 50. Forage crop condition: corn, 75; oats, 50; millet, 60. Possibly 2 acres of apple orchards set. The drought is becoming very serious.

HAMPSHIRE COUNTY.

Plainfield (C. A. WILLIAMS). — Potato bugs and squash bugs are doing the most damage. Indian corn is in 90 per cent condition, and about 50 per cent of the crop is grown for ensilage. Hay

crop yield, 75; its condition, 100. Condition of potatoes, 75; of other market-garden crops, 70; those harvested have yielded 70, and brought 100 per cent prices. Fruit prospect: apples and pears, 50; peaches, 40; plums, 75; grapes, 60. Forage crop condition: barley, 75; Japanese millet, 75; oats, 75; corn, 90. Grain crop condition: oats and barley, 75. About 10 acres of apple orchards set. The low percentage condition of farm crops is due to the late frosts, followed by dry weather. The latter has been broken lately by a few light showers.

Goshen (GEORGE L. BARRUS). — Potato bugs are the most noticeable. Condition of Indian corn, 90; 80 per cent grown for ensilage. Hay crop yield, 80; its quality, 95. Condition of potatoes, 95. Fruit prospect: apples, 70; pears, 110; peaches, 80; plums, 100; grapes, 90. Pasturage condition, 90. Forage crop condition: millet, 100; oats, 80; barley, 100. Grain crop condition: rye, 90; oats, 85. Five acres of apple orchards set. Frosts on the morning of July 12 did serious damage on low land, completely killing some corn and potatoes and some gardens.

Middlefield (J. T. BRYAN). — Very little damage from insects. Condition of corn, 100; 75 per cent grown for ensilage. Hay crop yield, 60; quality, 100. Condition of potatoes and other market-garden crops, 75; those harvested have yielded 75, and prices have been normal. Fruit prospect: apples, 50; pears, 25; plums, 50; grapes, 75; cranberries, 75. Condition of pasturage, 75. Forage crop condition: rye, 100; oats, 60; barley, 50; corn, oats and millet are also grown for forage. Oats grown for grain is in 60 per cent condition. Five acres of apple orchards have been set.

Chesterfield (HORATIO BISBEE). — Potato bugs are all that trouble us now. Corn crop is in 100 per cent condition; 40 per cent grown for ensilage. Hay crop yield, 70; quality, 90. Condition of potatoes, 50. Fruit prospect: apples, 25; pears, 10. Pasturage condition, 50. Forage crop condition: oats, 40; Hungarian, 50; some millet also grown. Not more than 2 acres of apple orchards set. Potatoes will be nearly a failure unless rain comes soon; the dry season is doing much harm.

Westhampton (LEVI BURT). — Potato bugs are about the only ones doing damage. Condition of corn, 100; 75 per cent grown for ensilage. Hay crop is 100 in both yield and quality. Condition of potatoes, 80. Fruit prospect: apples, 50; pears, 75; peaches and quinces, 50; grapes, 80. Pasturage condition, 75. Forage crop condition: rye, 80; oats, 100; millet, 85. Rye grown for grain offers a 90 per cent prospect. Everything is suffering from lack of rain.

South Hadley (W. F. PERSON). — Condition of corn, 75; 90 per cent is raised for the silo. Potato crop condition, 75; lettuce and beets, 90; onions, beans and peas, 75; those already harvested have

given a 60 to 75 per cent yield, and prices have ruled good. Fruit prospect: apples, 50; pears, 75; grapes, 80. Pasturage condition, 60. Forage crop condition: rye, 100; oats, 50; Japanese millet, 50; corn, 75. Grain crop condition: rye, 100; oats, 50. Old apple orchards have been filled in to about 20 to 30 per cent. Crops in general are all late, and prospects are that prices of all kinds of produce will be high in the fall.

Hadley (E. J. BURKE).—Thrips on onions and early blight on potatoes are the worst hindrances to plant growth. Indian corn condition, 98; 10 per cent grown for the silo. Hay crop yield, 102; its quality, 100. Have seen fields averaging three to four tons per acre. Potato crop condition, 90; other market-garden crops, 97; those harvested have yielded 100, and brought 102 per cent prices. Fruit prospect: apples and pears, 105; peaches, 100; plums, 105. Pasturage condition, 95. Forage crop condition: rye, 95; oats, 90. Four acres of new apple orchards set. Onions are in very fair condition and will average up well, considering the drought. Early set tobacco is stunted and ready to top at less than two feet high. Late set tobacco is better and responded more readily to the light showers of the past two weeks. If rain is plentiful during the next four weeks, crops will come through in good shape.

Greenwich (WALTER H. GLAZIER).—Potato bugs are proving most troublesome. Indian corn condition, 80; 10 per cent of the crop is grown for ensilage. Hay crop yield, 70; its quality, 95. Potato crop condition, 60. Pasturage condition, 50. Forage crops grown are: millet, oats and a little Hungarian, which are in only fair condition, owing to drought; condition of oats, 80. Mowings and pastures are turning brown, corn is curling, and all crops are suffering intensely for want of rain. We had quite a severe frost on the morning of July 12. Deer are troubling some.

HAMPDEN COUNTY.

Tolland (EUGENE M. MOORE).—The most troublesome insect is the potato bug. Corn condition, 80; 50 per cent of the crop is put into the silo. Hay crop yield, 75, and its quality, 100. Condition of potatoes, 75. Apple prospect, 40. Condition of pasturage, 50. Forage crop condition: corn, 80; millet, 75. Rye grown for grain has been harvested, with an 80 per cent yield. Wells and springs are drying up. Potato leaves are commencing to turn yellow.

Russell (E. D. PARKS).—Potato beetles and cabbage worms are the worst pests. Condition of Indian corn, 85, and 50 per cent raised for the silo. Hay crop yield, 80; its quality, 95. Condition of potatoes, 90; of other market-garden crops, 85; those harvested

yielded 100, and brought 100 per cent prices. Fruit prospect: apples, 80; pears, 85; peaches, 90; plums, 85; quinces, 75; grapes, 90. Pasturage condition, 80. Forage crop condition: rye, 85; oats, 90; corn also grown for forage. Grain crop condition: rye, 90; oats, 85. Four acres of apple orchards set.

West Springfield (T. A. ROGERS). — No insect damage being done except by squash borers. Indian corn condition, 75, and 50 per cent grown for ensilage. Hay crop yield, 75; quality, 100. Early potato condition, 50; other market-garden crops, about normal. Market-garden crops harvested have yielded 75, and brought above normal prices. Fruit prospect: apples, 50; pears and peaches, 75; plums, 50; quinces, 25; grapes, 50. Pasturage condition, 50. Oats and peas are raised for forage to some extent but corn is the crop most raised. Condition of oats, 50. Grain crop condition: rye, 75; oats, 50. But very few acres of apple orchards set.

East Longmeadow (JOHN L. DAVIS). — The most troublesome insects are potato beetles and squash bugs. Condition of corn, 80; one-third of the crop will be put into the silo. Hay crop yield, 80; quality, 100. Condition of potatoes, 75; other market-garden crops, 70; those harvested have yielded 70, and sold at 100. Fruit prospect: apples, 50; pears, 40; quinces, 60; grapes, 80. Pasturage condition, 50. Forage crop condition: rye, 100; oats, 60; fodder corn, 80; millet, 70. Grain crop prospect: rye (harvested), 100; oats (one-half cut), 60. Five acres of apple orchards set. Corn is curling, pastures look burnt, apples are dropping badly, and gardens are not yielding what they ought. We need rain badly.

Hampden (E. NORTON DAVIS). — Potato beetles, elm-leaf beetles, green apple aphids, squash bugs and cucumber beetles are raising the most havoc. Indian corn condition, 80; 30 per cent of the crop grown for the silo. Hay crop yield, 75 to 80; its quality, 80. Fruit prospect: apples, 40; peaches, 10. Pasturage condition, 70. Oats for forage is in 75 to 85 per cent condition. Rye grown for grain yielded 90 per cent. Fifty acres of orchards set, — mostly apple and peach together.

Monson (F. D. ROGERS). — Potato bugs and various stock flies are the most troublesome. Corn condition, 90; 25 per cent raised for ensilage. Hay crop yield, 90; quality, 85. Fruit prospect: apples, 25; pears, 100; peaches, 10; grapes, 10. Pastures are in very poor condition. Forage crop condition: rye, 100; oats, 90; Japanese millet, oats and peas, rye, and vetch are also grown for forage. Grain crop prospect: rye (harvested), 100; oats (mostly cut), 90. Eight acres of new apple orchards set.

Brimfield (F. N. LAWRENCE). — The most troublesome insects are potato bugs, squash bugs and striped cucumber beetles. Indian corn condition, 80; 50 per cent grown for the silo. Hay crop yield, 75; quality, 90. Potato condition, 60. Fruit crop prospect: apples,

10 (very poor); pears, 25; peaches, 10; grapes, 80. Pasturage condition, 60 (dried up). Forage crop condition: oats, 80; barley, 80; millet, 75; fodder corn, 50. Dry weather has affected all forage crops, while the frost on July 12 turned leaves yellow. Five acres of apple orchards set.

WORCESTER COUNTY.

Royalston (CHARLES A. STIMSON).—The most insect damage is being done by potato beetles and squash bugs. Indian corn condition, 75; 80 per cent grown for ensilage. Potato condition, 78; other market-garden crops, 80; those harvested yielded 75; sold at 100. Fruit prospect: apples, 50; pears, 90; plums, 95; quinces, 75; grapes, 75. Condition of pastures, 40. Forage and grain crop condition: oats, 80; barley, 82. Ten acres of apple orchards set. The severe drought has cut down possibilities for good crops.

Templeton (LUCIEN GOVE).—The most troublesome insects are potato beetles, cabbage worms, squash bugs, elm-leaf beetles and brown-tail moths. Indian corn condition, 60; 85 per cent of the crop is raised for ensilage. Hay crop yield, 70; its quality, 90. Potato crop condition, 55; other market-garden crops, 40; those harvested yielded 60, and farmers realized quite an advance in price over previous years. Fruit prospect: apples, 60; pears, 85; plums, 50; grapes, 90. Condition of pastures, 50. Forage crop condition: rye, 45; oats, 50; barley, 55; corn, 60; millet, 40. Grain crop prospect: rye (harvested), 85. One and a half acres of apple orchards set. Not one-half inch of rain has fallen since the last week of May, and crops are in very poor condition.

Fitchburg (Dr. JABEZ FISHER).—Scarcely any insects are at work. Hay crop yield and quality, 80. Potato condition, 45. Fruit prospect: apples, 60; pears, 100; grapes, 80.

Barre (JOHN L. SMITH).—Potato beetles are doing 90 per cent of the insect damage. Corn condition, 100; 90 per cent grown for ensilage. Hay crop yield, 90; quality, 110. Condition of potatoes, 100. Fruit prospect: apples, 50; grapes, 100. Condition of pasturage, 75. Oats grown for forage is in 75 per cent condition; millet and Hungarian likewise raised for forage. Ten acres of new apple orchards set. Pastures have been very short of grass for several years; as compared with last three years, their condition would be 100, but only 75 as compared with the last ten years.

Princeton (A. L. TYLER).—Potato bugs and root maggots in squashes are causing the most damage. Indian corn condition, 50; 80 per cent of the crop grown for ensilage. Hay crop, 60; quality, 80. Potato crop condition, 55; other market-garden crops, poor; those already harvested have yielded 40 to 60 per cent, and brought 110 to 120 per cent prices. Fruit prospect: apples, 25; pears, 60; peaches, 40; plums, 70; quinces, 20; grapes and cran-

berries, 80. Pastures are all dried up. Forage crop condition: rye, 90; oats, 50; millet, 40.

Sterling (HENRY S. SAWYER). — Gypsy moths and potato beetles are causing the most injury. Indian corn condition, 75; 25 per cent grown for the silo. Hay crop yield, 90; quality, 95. Potato crop condition, 75; peas, 25. Fruit prospect: apples and pears, 50; peaches and plums, 25; grapes, 50. Pasturage condition, 75. Forage crop condition: rye, 50; oats, 75; Japanese millet, 75. Twenty acres of apple orchards set.

New Braintree (CHARLES D. SAGE). — Elm-leaf beetles and potato bugs are the most troublesome insects. Corn condition, 75; 10 per cent raised for the silo. Hay crop yield, 75; its quality, perhaps 80. The severe drought not only reduced the yield but is drying up fields not cut. Potato crop condition, 80. Fruit prospect: apples, 40; pears, 25; plums, 40; grapes, 75. Pasturage condition, 40. Forage crop condition: rye, 75; oats, 80. Grain crop: rye, 75; oats, 80. These crops are nearly all cut for fodder or hay. Perhaps 10 acres of apple orchards set. This is the third year we have suffered from drought. Pastures are drying up and cows are shrinking.

West Brookfield (MYRON A. RICHARDSON). — The most troublesome insects are potato beetles and black squash bugs. Condition of corn, 80 (two weeks late); 70 per cent grown for the silo. Hay crop yield, 80; its quality, 100. Potato crop condition, 70; fruit prospect: apples, 80; pears, 75; peaches, 50; plums and quinces, 70; grapes, 100. Pastures are in 75 per cent condition, and some farmers are feeding at the barn. Forage crop condition: rye, 100; oats, 60; millet and Hungarian also grown for forage. Rye as a grain crop offers a normal prospect. Dry weather has hurt all crops and pastures, and if it continues will damage fruit. Heavy frost ten days ago did a lot of damage to corn and potatoes on low lands.

Spencer (W. C. BEMIS). — The worst insect is the elm-leaf beetle. Corn is in very poor condition; one-half the crop will be put into the silo. Hay crop yield, 60; quality, 90. Potato crop condition, 75. Market-garden crops have yielded 50 per cent and brought good prices. Apple prospect, 25. Pastures are very dry. Forage crop condition: rye, poor; oats, good; barley, fair. Ten acres of new apple orchards set.

Worcester (H. R. KINNEY). — Potato and squash bugs are the most troublesome insects. Hay crop yield, 85; quality, 100. Potato crop condition, 75; other market-garden crops, 75; those harvested yielded 70, and 100 per cent prices were realized. Fruit prospect: apples, 10; pears, 75; grapes, 100. Pasturage condition, 65. The stand of most crops is good, and a good rain followed by nice weather should bring to nearly a normal condition most vegetables. Fruit as a whole is very light.

Sturbridge (FRANK T. HAYNES).—The most injurious insect pests are, the aphids and elm-leaf beetle. Indian corn condition, 90; 50 per cent being raised for ensilage. Hay crop is normal in both yield and quality. Potato and other market-garden crop condition, 75; those harvested have yielded 90, and sold at 100 per cent prices. Fruit prospect: apples, pears, peaches and plums, 100; quinces, 75; grapes, 125. Pasturage condition, 80. Forage crop condition: rye, 100; oats, 90; millet, 80. Three acres of apple orchards set.

Sutton (H. L. RAY).—The most troublesome insects are potato bugs. Corn condition, 85; one-half the crop will be put into the silo. Hay crop yield, 90; quality, 100. Condition of potatoes, 75; other market-garden crops, 80. Fruit prospect: apples, 50; pears, 90; peaches, 25; plums, 75. Pastures are in 50 per cent condition. Oats grown for forage is in 90 per cent condition; sweet corn and Japanese millet are also grown for forage. Condition of oats grown for grain, 90. Twenty-five acres of apple orchards set.

Milford (JOHN J. O'SULLIVAN).—The worst insect pests are the elm-leaf beetle and the potato bug. Indian corn condition, 95; 10 per cent of the crop raised for ensilage. Hay crop yield, 85 to 90; quality, 95. Condition of potatoes, 75; other market-garden crops, 75 to 85; those already harvested have yielded 90 and brought 110 per cent prices. Fruit prospect: apples, 60; pears, 75; peaches, 90; plums, 80; grapes, 90; cranberries, 75. Pasturage condition, 75. Forage crop condition: rye, 90; oats, 75; barley, 95.

Mendon (J. J. NUTTER).—Elm-leaf beetles and potato bugs are the most troublesome insects. Condition of Indian corn, 85; 60 per cent grown for the silo. Hay crop yield, 70; quality, 100. Potato crop condition, 100. Fruit prospect: apples, 60; pears, 100; peaches and plums, 40; grapes, 100. Pastures are in normal condition.

MIDDLESEX COUNTY.

Townsend (GEO. A. WILDER).—Elm-leaf beetles, tent caterpillars and brown-tail moths are proving most troublesome. Indian corn condition, 75; proportion grown for ensilage, 50. The hay crop is 80 per cent of normal in both quantity and quality. Very few forage crops raised. Condition of potatoes, 75; other market-garden crops, 75; those already harvested, 75, as compared with former years in yield; higher in price. Fruit crop prospect: apples, 50; pears, 40; peaches, 33½; plums, 25; grapes, 50; cranberries, 25. Condition of pasturage, 50. Very few new apple orchards set.

Dunstable (HARRY S. SWALLOW).—The gypsy moth is the most troublesome. Indian corn condition, 60; proportion grown for ensilage, 75. Hay crop, 80 in quantity, 100 in quality. Condition of potatoes, 50. Apple prospect, 25. Pasturage condition, 15. Oats as forage, condition, 50. The dry weather has been disastrous to most crops.

Westford (J. W. FLETCHER).—Indian corn condition, 60; 90 per cent grown for ensilage. Hay crop, 75 in quantity, 100 in quality. Oats and millet are raised as forage crops. Condition of oats, 75. Potato crop condition, 40. Prospect for pears, 50; for peaches, 75. Condition of pasturage, 40. Ten acres of new apple orchards have been set. We are very much in need of rain.

Billerica (E. F. DICKINSON).—Cutworms and wireworms are proving most troublesome. The condition of Indian corn is 75; proportion grown for ensilage, 50. The hay crop as compared with normal is 75 per cent in quantity and 90 per cent in quality. Eighty per cent of the oats and peas grown are raised for forage crops: 75 per cent of the barley crops also raised as forage. Condition of potatoes, 65; of other market-garden crops, 70; those already harvested are in 80 per cent condition as compared with former years. The apple prospect is 50; pears, 80; peaches, 40; plums, 30; quinces, 75; and grapes, 100. Pasturage is in 40 per cent condition. Condition of rye, 100; oats, 80; barley, 75. Ten acres of new apple orchards have been set. Drought for the past month has seriously hurt all crops not already harvested.

Maynard (L. H. MAYNARD).—Gypsy and brown-tail moths are the worst pests we have. Potatoes, where neglected, are being damaged by beetles. Indian corn is late; condition, 80; not over 5 per cent is grown for ensilage. Hay condition, 75; quality, 90. Japanese millet, oats and Hungarian grass are grown as forage crops, and are 90 per cent in condition. Condition of potatoes, 100; other market-garden crops, 90; those already harvested, condition, 90; price about the same. Fruit prospect: apples, 60; peaches, 25; quinces, 10; grapes, 75. Pastures are very short and need rain. Condition as forage crops: rye, 90; oats, 90; barley, 90. Probably not over 5 acres of apple orchards have been set out in the past year.

Marlborough (E. D. HOWE).—No insects are particularly troublesome at present; flies bother the cows badly; some potato bugs, but most insects are gone by. Indian corn: condition, 90; 50 per cent grown for silage. Hay crop, quantity, 90; quality, 100. Condition of potatoes, 95; other market-garden crops, 90; those already harvested, 90 in yield as compared with former years; in price, 105. Fruit prospect: apples, 50; pears, 90; peaches, 75; plums, 75; quinces, 90; grapes, 100. Condition of pasturage, 90. Condition of forage crops: soy beans, 100; sweet corn, 90; rye (harvested), 100; oats, 75; as grain, rye, 100 per cent prospect. About 5 acres of new apple orchards.

Newton (GEO. L. MARCY).—Condition of Indian corn, 90; 95 per cent grown for ensilage. Hay crop, 95 in quantity; 100 in quality. Condition of potatoes, 80, owing to poor germination; condition of other market-garden crops, 90. Fruit prospect: apples, 40; pears, 100; plums, 90. Condition of pasturage, 80. Condition

of forage crops: rye, 100; oats, 50. No new apple orchards have been set, as taxes are too high and there is too much danger of losing fruit by theft.

Lexington (HOWARD M. MUNROE). — Flies of all kinds, poultry mites and lice, the elm-leaf beetle and the squash borer are doing damage. Condition of Indian corn, 75; 50 per cent grown for the silo. Hay crop, 75 in quantity; 90 in quality. Condition of potatoes, 85; sweet corn, 70; tomatoes, 75; earrots, 60; lettuce, 60; cucumbers, 30; those already harvested, 75 in yield as compared with former years, and 125 in price. Fruit prospect: apples, 70; pears, 100; peaches, 100; plums, 40; quinces, 100; grapes, 70. Condition of pasturage, 75. Condition of forage crops: oats, 75; millet, 85; corn, 75; rye, 100; barley, 70. About 50 acres of apple orchards were set in 1912 and 1913. Extreme dry weather is cutting all crops not irrigated. A blight of the cucumber vines is making the crop very small.

ESSEX COUNTY.

Methuen (FREDERICK A. RUSSELL). — Brown-tail and gypsy moths are most troublesome. Very little Indian corn raised. Sweet corn and ensilage corn largely take the place of Indian corn as ensilage. Hay crop, 80 in quantity; 100 in quality. Condition of potatoes, 60; other market-garden crops, 80; those already harvested, 90 in yield as compared with former years, and, in price, 100. Crops that germinated well are nearly all doing well, but the cold, dry spring was unfavorable for many. Fruit prospect: apples, 25; pears, 100; peaches, 100; plums, 40. Condition of pasturage, 75. Condition of forage crops: oats, 60; barley, 60; prospect for rye as grain, 100. Very few apple trees set.

Haverhill (MILTON A. CORLISS). — The gypsy moth is our worst pest at present. Indian corn condition, 95; 30 per cent grown for ensilage. Hay crop: 100 in quantity; 95 in quality. Condition of potatoes, 95; other market-garden crops, 95; prices, normal. Fruit prospect: apples, 75; peaches, 80; plums, 40. Condition of pasturage, 70. Condition of forage crops: oats, 80; millet, 90; barley, 95; rye, 90. Some small orchards set; I do not know of any large ones.

Rowley (D. H. O'BRIEN). — The gypsy moth, onion maggot, striped cucumber beetle, squash bug, potato bug and entworm are most injurious at present. Condition of Indian corn, 75; 60 per cent of crop grown for ensilage. Hay crop yield, 75; quality, 80. Condition of potatoes, 90; other market-garden crops, 65; those already harvested, 65 in yield as compared with former years: prices, above average. Fruit prospect: apples, 20; pears, 100; peaches, 35; plums, 15; grapes, 85. Condition of pasturage, 65. Forage crop condition: winter rye, 85; oats, 65. Four acres of new orchards set out in this vicinity.

Topsfield (B. P. PIKE). — The gypsy moth and the potato beetle are most troublesome. Indian corn condition, 100; 75 per cent of crop goes into the silo. Hay crop, 80 per cent in quantity; 100 in quality. Condition of potatoes, normal; other market-garden crops, normal; those already harvested, 100 in yield; in price, 110. Fruit prospect: apples, 50; pears, 50; peaches, 75; plums, none; grapes, 75. Condition of pasturage, 50. Condition of forage crops: oats, 80; rye, 80; barley, 80; millet is one of our foremost forage crops.

NORFOLK COUNTY.

Millis (E. F. RICHARDSON). — Potato beetle, tent caterpillar and gypsy moth are most in evidence. Condition of Indian corn, 90; 80 per cent grown for ensilage. Hay crop, 80 in yield; 95 in quality. Condition of potatoes, 60; other market-garden crops, 80. Fruit prospect: apples, 90; pears, 70; peaches, 60; plums, 30; quinces, 20; grapes, 80; cranberries, 40. Condition of pasturage, 30. Condition of forage crops: rye, 95; oats, 90; barley, 90. Five acres of new apple orchard have been set.

Wrentham (J. A. COBB). — The Colorado beetle and green aphid are proving the most troublesome in this locality. Condition of Indian corn, 100; 50 per cent grown for ensilage. Hay crop, 80 per cent in quantity and 100 per cent in quality. Condition of potatoes, 100. Fruit prospect: apples, 30; pears, 150; peaches, 200; plums, none; quinces, none; grapes, 100. Condition of pasturage, 100. Condition of oats as forage, 100; prospect for rye, 100; 20 per cent already harvested. Five acres of commercial apple orchards have been set. Apple trees blossomed 50 per cent, but there has been heavy drop, owing to the drought. There were many more tent caterpillars than usual this year; there are many more of their eggs laid now than last year at this time.

Foxborough (WM. E. PERKINS). — Condition of Indian corn, 85; 50 per cent grown for ensilage. Hay crop, 100 in quantity and quality. Condition of potatoes, 90; other market-garden crops, 90; those already harvested, 75 in yield as compared with former years; 100 in price. Fruit prospect: apples, 75; pears, 85; plums, 50; grapes, 90. Condition of pasturage, 50. Condition of forage crops: corn, 85; Hungarian, 90; millet, 90; oats, as grain, 75.

Avon (S. FRANK OLIVER). — Since damage from tent caterpillars ceased there has been very little insect damage. Condition of Indian corn, 90 per cent; 100 per cent grown for silo. Hay crop, 100 both in quantity and quality. Condition of potatoes, 85; other market-garden crops, generally good; those harvested, 100 in yield as compared with former years; prices very good. Condition of pasturage, 70. Golden millet is about the only forage crop used at this season, and its condition is good; such amounts of rye as are

raised are 100 in condition; of oats, 80. No commercial orchards have been set, but there has been an increased planting for home use.

Cohasset (ELLERY C. BATES). — Potato bugs are proving the most troublesome. Condition of Indian corn, 85; practically the whole crop is put into the silo. Hay crop, in quantity, 75 to 100; in quality, 100. Condition of potatoes and other market-garden crops, 100; those already harvested, 100 both in yield and price. Condition of pasturage, 75.

BRISTOL COUNTY.

North Attleborough (H. P. CALDWELL). — Potato and squash beetles are now proving most troublesome. Indian corn is in normal condition; 20 per cent grown for ensilage. Hay crop, yield, 90; its quality, 100. Potato crop condition, 100; other market-garden crops, 90. Very few market-garden crops have been harvested. Fruit prospect: apples, 80; pears, 50; peaches, 80; quinces and grapes, 90. Condition of pasturage, 50. Forage crop condition: rye, oats and Japanese millet, 100; barley, 80. Ten acres of apple orchards set.

Norton (HENRY G. DANFORTH). — Indian corn condition, 125, and one-half the crop is put into the silo. Hay crop yield, 125; quality, 100. Potato crop condition, 100. Fruit prospect: pears and plums, 100. Pasturage condition, 100. Forage crop condition: rye and oats, 100; Hungarian and millet are also grown. Four acres of apple orchards set.

Rehoboth (ADIN B. HORTON). — The most troublesome insect pests are potato bugs. Cutworms have done the most damage this season, but are through working. Corn condition is 90, and 50 per cent of the crop is raised for ensilage. Hay crop yield, 70; quality, 75. Condition of potatoes, 70; these were badly damaged by dry weather. Tomato crop condition, 100; beet, 90; bean, 90; those market-garden crops harvested have yielded about as in former years, except strawberries, which did not give over a 70 per cent crop; prices have been normal. Fruit prospect: apples, 85; pears, 75; peaches, 100; grapes, 75. Pasturage condition, 65. Forage crop condition: rye, 75; oats, 65. Not much of an acreage of new apple orchards have been set. Most all garden crops harvested were up to normal until the dry weather of July struck them. Strawberries suffered, owing to the long drought, as have hay and cabbage.

Freetown (GILBERT M. NICHOLS). — The worst insect pests are San José scale, potato bugs and elm-leaf beetles. Indian corn condition, 100; 20 per cent is grown for the silo. Hay crop, yield, 90; quality, 100. Potato crop condition, 80. Fruit prospect: apples and pears, 100; peaches, 75. Pasturage condition, 100. Forage crop condition: rye, 90; oats, 85. Corn and millet are also raised for forage. Rye as a grain crop offers a 90 per cent prospect. Ten acres apple orchards set.

Acushnet (MOSES S. DOUGLAS). — Cutworms and potato bugs are doing the most damage. Indian corn condition is 60, and 50 per cent is grown for the silo. Hay crop, yield, 60; quality, 80. Potato crop condition, not over 40. Market-garden crops in general have yielded 50, and sold for 75. Fruit prospect: apples, 80; pears, 50; peaches, 100; plums, 75; grapes, 100. It has been the dryest season for forty years. We have had no heavy rain since April, and it has been difficult to get seed to germinate. There will be no money for the farmer this year in this vicinity.

PLYMOUTH COUNTY.

Norwell (HENRY A. TURNER). — The most injurious insects at work are potato bugs and cutworms. Condition of corn, 100; 25 per cent raised for the silo. Hay crop, yield, 90; quality, 100. Potato crop condition, 80; other market-garden crops, 90. Fruit prospect: apples, 60; pears and peaches, 50; grapes, 100. Pastures are in 90 per cent condition. Garden crops are ten days late on account of the cold spring.

Hanover (HARRISON L. HOUSE). — There are a few places where gypsy moths are doing much damage, and potato bugs are very numerous. Indian corn condition, 100; none grown for ensilage. Hay crop is normal, both in yield and in quality. Condition of potatoes, 75; other market-garden crops, 100. Potatoes did not sprout well; not more than half came up in some cases. Market-garden crops harvested yielded 100 and brought normal prices. Fruit prospect: apples, 50; pears, peaches, grapes and cranberries, 100. Pasturage condition, 80. Oats grown for forage is in normal condition. No apple trees set except a few here and there.

Duxbury (HENRY A. FISH). — Gypsy moths have done some stripping of woodlands. Indian corn condition, 80; one farmer is raising 25 acres for the silo. Hay crop, yield, 75; quality, normal. Potatoes are in very good condition, but late. Fruit prospect: apples, 33; pears, 50; peaches, 33; grapes, 80; cranberries, large yield expected. Pastures are poor, on account of drought. Forage crop condition: rye, normal; oats, 50. The three weeks' drought has been broken, and in all probability crops will go through all right. Corn was held up some, but not as badly as in 1912.

Halifax (Mrs. GEORGE HAYWARD). — Caterpillars, elm-leaf beetles and gypsy moths are proving most troublesome. Indian corn is in normal condition; none grown for ensilage. Hay crop yield, 75; quality, 100. Rye, oats, corn and Hungarian are raised for forage, and are in normal condition. Potato crop condition, 50. Fruit prospect: apples, 75; cranberries, 75. Pasturage condition, 100. Young apple orchards are in fine condition.

Lakeville (N. G. STAPLES). — The worst insect pests are potato beetles. Indian corn condition, 85; 25 per cent of the crop raised

for ensilage. Hay crop yield, 65; quality, 100. Condition of potatoes, 85; of other market-garden crops, fair. Early potatoes yielded 50 per cent, and brought normal prices. Fruit prospect: apples, 60; pears and peaches, 90; plums and grapes, 80; cranberries, 100. Pasturage condition, 75. Forage crops raised: fodder corn, millet and oats. Condition of oats, 65. Grain prospect: rye, 100; oats, 65. Ten acres of new orchards set.

BARNSTABLE COUNTY.

Bourne (ROBERT S. HANDY). — The black-headed cranberry worm is proving to be the most troublesome. Indian corn condition, 80. Hay crop yield, 50; quality, 75. Potato crop condition, 50; other market-garden crops, 75; those harvested have yielded 90, and have brought 100 per cent prices. Fruit prospect: apples, 75; pears, 100; peaches and plums, 50; quinces, 100; grapes, 50; cranberries, 50. Pasturage condition, 50. Forage crop condition: oats, 50; millet, 25. Five acres of apple orchards set.

Falmouth (D. R. WICKS). — Most insect damage is being done by potato bugs, and on some bogs, fireworms. Condition of corn, 85; 75 per cent of the crop grown for the silo. Hay crop yield, 40; quality, 100. Potato crop condition, 25; other market-garden crops, 75; those harvested have yielded 50, and sold for 100. Fruit prospect: apples, 30; pears, 50; peaches, 25; plums, 20; quinces, 25; grapes, 75. Pasturage condition, 35. Corn, oats and millet are raised for forage; condition of oats, 75.

Harwich (DAVID ELDER). — Damage by insects is being done mostly by potato bugs. Cranberry fireworms have already burned up large areas of bogs. Indian corn crop is in about normal condition; no ensilage raised. Hay is about half a crop; its quality is 50, being dry and overripe. Condition of potatoes, 60; other market-garden crops, 50; those harvested yielded 40, and brought 125 per cent prices. Fruit prospect: apples, pears and peaches, 50; plums, quinces, grapes and cranberries, 75. Pastures have gone by. A number of farmers are sowing alfalfa; old stands are in fair condition.

Truro (JOHN B. DYER). — Potato bugs are the most troublesome; brown-tail moths and tent caterpillars are busy laying eggs for another year. Indian corn is in normal condition; none is raised for the silo. The hay crop is normal in both yield and quality. Potato and other market-garden crop condition, 100; these crops harvested have yielded 100, and brought 100 per cent prices. Prospects for all fruits is normal. Pastures are in normal condition. Only a few acres of apple orchards set.

DUKES COUNTY.

West Tisbury (GEORGE HUNT LUCE).—The worst insects are potato beetles and squash bugs. Indian corn condition, 100, and 15 per cent grown for ensilage. Hay crop yield, 70. Potato crop condition, 80; other market-garden crops, 75; those harvested yielded 75, and brought normal prices. Fruit prospect: apples, 75; cranberries, 75. Pasturage condition, 85. Forage crop condition: rye, 100; oats, 80; millet and drill corn are likewise grown for forage, and oats is mown for hay.

SUMMARY OF FRUIT CROP CONDITIONS.

In the circular to fruit crop correspondents, returnable July 26, the following questions were asked: —

1. (*a*) Has there been much drop since date of last report (June 26)? (*b*) What has been the total drop? (Give per cent of fruit set.)

2. What is the prospect at the present time for the following fruits (100 representing normal)? Apples, pears, peaches, plums, blackberries, blueberries.

3. (*a*) Compare the currant crop with normal. (Give per cent.) (*b*) If below normal give the contributing causes. (*c*) Compare prices with normal.

4. (*a*) Has the raspberry crop been harvested at this date? (*b*) Compare the crop with normal. (*c*) If below, give contributing causes. (*d*) Compare prices with normal (100 representing normal).

5. (*a*) Compare the cherry crop with normal. (*b*) If below, give contributing causes. (*c*) Compare prices with normal.

6. Have the following fruit diseases appeared this season, and if so, to what extent? Apple scab, fire blight, peach leaf-curl, peach yellows, peach black spot or scab, grape mildew.

7. What insects are doing most damage at the present time?

8. Is summer spraying for brown-tail moth or other insect pests practiced in your locality?

Returns were received from 58 correspondents, and from these returns the following summary was compiled: —

DROP.

Of those reporting on this matter, 24, or 49 per cent, report "much drop;" 22, or 45 per cent, report "not much drop;" while 3, or 6 per cent, report, "normal drop." The

July drop appears to have been least in Middlesex and Essex, and greatest in Franklin and Worcester. Of fruit set the percentage drop is: Barnstable, 50; ¹ Norfolk, 50; ² Franklin, 48.7; Plymouth, 40; ² Bristol, 37.5; ² Hampden, 37.5; ² Berkshire, 35; ² Worcester, 31.4; Essex, 28.3; Hampshire, 27.5; Middlesex, 21.8; Dukes and Nantucket, no report; the State, 32.1. As further shown in the table giving fruit-crop prospect, the drought is raising havoc with most fruits.

FRUIT PROSPECT.

The following table compiled from both the general and the special fruit returns gives a fairly accurate idea of the prospect for fruit. In the last column the estimates of June 27 are given for comparison: —

¹ One report.

² Two reports.

| | Berkshire. | Franklin. | Hampshire. | Hampden. | Worcester. | Middlesex. | Essex. | Norfolk. | Bristol. | Plymouth. | Barnstable. | Dukes. | Nantucket. | State. | State (June 27). |
|---------------------|------------|-----------|------------|----------|------------|------------|--------|----------|----------|-----------|-------------|--------|------------|--------|------------------|
| Apples, . . . | 34.0 | 46.5 | 58.4 | 43.8 | 47.6 | 52.3 | 40.8 | 58.3 | 71.0 | 64.0 | 58.8 | 75. | - | 49.8 | 64.0 |
| Pears, . . . | 38.4 | 65.0 | 73.0 | 56.7 | 77.0 | 80.3 | 75.4 | 87.0 | 82.0 | 73.6 | 78.1 | - | - | 71.1 | 77.0 |
| Peaches, . . . | 25.0 | 42.1 | 71.4 | 36.4 | 52.4 | 68.0 | 69.8 | 80.0 | 82.9 | 70.4 | 82.1 | - | - | 63.2 | 70.0 |
| Plums, . . . | 20.0 | 66.9 | 59.5 | 61.7 | 52.1 | 51.7 | 41.2 | 86.1 | 81.0 | 58.0 | 57.2 | - | - | 53.9 | 64.4 |
| Quinces, . . . | - | 10.0 | 41.7 | 53.3 | 72.2 | 68.8 | - | 20.0 | 75.0 | 110.0 | 72.0 | - | - | 67.9 | - |
| Grapes, . . . | 56.7 | 72.5 | 85.2 | 71.4 | 81.7 | 70.7 | 80.0 | 90.0 | 83.0 | 92.5 | 80.0 | - | - | 79.5 | - |
| Blackberries, . . . | 75.0 | 98.0 | 112.5 | 70.0 | 80.4 | 75.0 | 83.3 | 52.5 | 80.0 | 100.0 | - | - | - | 85.0 | 91.5 |
| Blueberries, . . . | 50.0 | 57.5 | 62.5 | 100.0 | 80.0 | 82.5 | 70.5 | 87.5 | 77.5 | 83.3 | 60.0 | - | - | 71.9 | 81.1 |

CURRANTS.

The currant crop appears to have been better by 5.8 points than anticipated on June 27. As compared with normal, the crop was: Hampshire, 100; ² Hampden, 100; ¹ Franklin, 97.5; Bristol, 87.5; ² Plymouth, 86.6; Essex, 82; Worcester, 80.5; Norfolk, 80; Berkshire, 58.3; Middlesex, 53.3; the State, 78.5. Frosts and drought are given as the chief causes of the small crop. The former did most damage in Middlesex. There appear single reports of scale, aphids, and frost and rain at time of blooming, and two correspondents name light bloom and cutworms as the most detrimental to a normal crop.

Prices, on the other hand, have been high, which fact has, in part, recompensed growers for the small yield. As compared with normal, prices have been: Berkshire, 125; ¹ Bristol, 112.5; ² Norfolk, 110; ² Worcester, 110; Middlesex, 108.5; Plymouth, 106.6; Essex, 103.3; Hampshire, 100; ¹ Franklin, 100; ¹ the State, 108.2.

RASPBERRIES.

Twenty-five, or 59.5 per cent, of the correspondents reporting on this crop, state that it has been wholly or mostly harvested; 12, or 28.6 per cent, that it has been partly harvested; and 5, or 11.9 per cent, that it has not been harvested. Enough of the raspberry crop has been picked to allow a fair estimate of the yield, as follows: Middlesex, 91.2; Worcester, 88.5; Essex, 78; Berkshire, 75; Norfolk, 75; ² Bristol, 75; ² Plymouth, 70; ² Franklin, 66.6; Hampshire, 62.5; ² Hampden, 62.5; ² the State, 79.6. This is 6.2 points lower than the prospect estimate for the State on June 27.

Drought has injured raspberries more than has frost, drying some fruit on the bushes and ripening other fruit before growth had been completed.

As in the case of currants, these berries have brought better prices than usual. The percentage prices have been:

¹ One report.

² Two reports.

Berkshire, 135; ¹ Norfolk, 125; ² Bristol, 112.5; ² Middlesex, 111.8; Essex, 107; Franklin, 103.3; Hampshire, 100; ¹ Worcester, 98.7; the State, 109.2.

CHERRIES.

The final figure on the cherry crop is 4.8 points below the prospect estimate for the State on June 27. The crop was: Barnstable, 100; ¹ Essex, 98.3; Berkshire, 87.5; ² Plymouth, 87.5; ² Hampshire, 75; ² Bristol, 75; ² Worcester, 60.7; Middlesex, 46.7; the State, 71.2.

Frosts hurt the bloom in the spring, while drought and birds did some damage to the ripening crop.

Cherries have brought about normal prices, the average for the State, as compared with normal, being 100.5.

DISEASES.

The only one of the plant diseases named which is reported as not present, or only a trace, is grape mildew. One report of black spot was had from Middlesex. Of 37 correspondents reporting on apple scab, 15, or 40.5 per cent, state that it has appeared; 13, or 35.2 per cent, that it has not appeared; and 9, or 24.3 per cent, "very little," "some," or "slightly." "No fireblight" is reported by 23, or 64.5 per cent. All the correspondents in Hampden, Middlesex, Essex, Norfolk, Plymouth and Barnstable counties report prevalence of peach leaf-curl; in the State at large, 26, or 70.2 per cent, report its presence. Peach yellows appeared in Franklin, Hampshire, Hampden, Worcester, Middlesex and Essex counties, with 8 reports, while 25, or 75.7 per cent, of the correspondents report negatively.

INSECTS.

The most injurious insects in order of damage done, as indicated by the number of reports of each, are: San José scale, gypsy moth, aphid, brown-tail moth, codling moth, curenlio, borers, elm-leaf beetle, blister mite, apple maggot, web worm, pear psylla and cane borer.

¹ One report.

² Two reports.

SUMMER SPRAYING.

Only 39.2 per cent of the returns stated that summer spraying was practiced, and of these, 55 per cent asserted that only a little was done. The need for spraying in the summer against insects, as well as against plant diseases, is only too readily proven by the excellent results reported where this practice is followed. Would that these object lessons of foresight and wisdom were distributed more thickly over the entire State!

NOTES OF FRUIT CROP CORRESPONDENTS.

[Returned to us July 26.]

BERKSHIRE COUNTY.

Washington (J. B. KENT). — There has not been much fruit drop since June 26. Fruit prospect: apples, 50; pears, 0; plums, 0. Currant crop is below normal on account of frosts; prices, above normal. Plenty of wild raspberries, nearly past for the season. Frosts early in spring ruined the cherry crop. No fruit diseases and no insects at present.

Richmond (R. S. ANNIN, JR.). — Percentage of fruit drop is 20. Fruit prospect: apples, 50; pears, 80; plums, 10; blackberries, good; blueberries, poor. Currants yielded 75, as result of frost and drought, but prices have been higher than usual. Raspberry crop has been harvested, and yielded 50; frost and drought reduced the yield. Raspberry prices were very much higher, some farmers getting 25 cents per quart. Cherry crop was normal, and sold for normal prices. Apple scab is about as plentiful as usual, but no other fruit diseases have appeared. Codling moth is doing the most damage.

FRANKLIN COUNTY.

Colrain (EDGAR F. COPELAND). — There has been much fruit drop since June 26. Fruit prospect: apples, 45 to 50; pears, 70; peaches, 75; plums, 40. Currants yielded a normal crop. Raspberries set full, but the season has been too dry; the crop is harvested; prices have ranged 10 per cent above normal. Cherries were a 110 per cent crop; fruit is small where soil is dry. My own apples are uncommonly large.

Montague (HENRY J. DAY). — The total per cent of fruit set is 25. Fruit prospect: apples, 50; pears, 90; peaches, 90; plums, 50; blackberries and blueberries, 90. The yield of currants was 90. Raspberry crop not wholly harvested; sold for normal prices.

Cherry crop was 25 per cent of normal because of frosts; brought the usual prices. No fruit diseases or insects. One farmer has perhaps 500 bearing peach trees, and another the same number out of 1,000 trees set.

Conway (ALVAH J. NORMAN).—Percentage of fruit set is 90; fruit prospect: apples, 85 to 90; pears, 100; peaches, 10; plums, 90; blackberries, 110; blueberries, 120. Raspberries have been picked, but the crop was only 50 per cent of a normal on account of dry weather; prices have been 100 per cent. Cherries bore a 30 per cent crop, as frost damaged the bloom; very few cherries sold. Apple scab is serious this season, and there is a trace of peach leaf-curl and some peach yellows. The worst insects are the aphids and plum euculios. Deer constitute by far the worst menace to young orchards.

Heath (ERNEST E. KINSMAN).—Some drop since last report; percentage drop of fruit set, 25. Fruit prospect: apples, 25; blackberries, 100; blueberries, 10. All raspberries have not been picked; the crop is a light one, due to dry weather. Blister mites doing the most damage.

HAMPSHIRE COUNTY.

Hadley (JOHN W. CLARK).—Not much drop where the trees were sprayed, 10 per cent; unsprayed, 50 per cent. Fruit prospect: apples, 70; pears, 80; peaches, 100. Very few currants grown for market; these bring 12 cents per quart by the crate. Very little apple scab; fire blight is rare; peach yellows not apparent to any extent; San José scale and codling moth are doing most damage. Summer spraying not practiced to any extent. Very little attention is given to fruits in this town, and spraying is practiced only in a limited way. Brown-tail moth nests were found in a few places this spring and destroyed. San José scale has become well established, and many apple trees are in poor shape on account of its work.

Amherst (W. H. ATKINS).—Fruit prospect: apples, 25; pears and peaches, 100; blueberries, none. The raspberry crop has been harvested, but it was only 50 per cent of normal. Apple scab, fire blight and peach yellows have appeared to a slight extent.

Prescott (E. T. WHEELER).—The fruit drop has been 25 per cent of fruit set. Fruit prospect: apples and pears, 75; plums, 25; blackberries, 100; blueberries, 25. Currants yielded a normal crop. No raspberries or cherries raised. No special trouble from insects.

HAMPDEN COUNTY.

Wilbraham (L. W. RICE).—There has been considerable drop. Fruit prospect: apples, 40; peaches, 35. Fire blight and peach yellows have appeared, with very little peach leaf-curl. Insects

doing damage are the green aphids, borers and San José scale. Very little fruit raised except peaches and apples.

Brimfield (E. S. BUTTERFIELD). — Total drop is 50 per cent of fruit set. Fruit prospect: apples, 70; pears, 10; early peaches, 25; late peaches, 10; blackberries and blueberries, 100. Currant crop was normal, but none were raised for market. Raspberries were only one-half the usual crop, as late frosts and drought injured them; none raised for market. Slight infestation by peach leaf-curl. The codling moth, curculio and apple and peach tree borers are proving most troublesome. We are still free from brown-tail and gypsy moths. Blueberries and blackberries, while good crops, have suffered from drought and are, therefore, small.

WORCESTER COUNTY.

Warren (A. N. TUTTLE). — Of fruit set there has been a 50 per cent drop. Fruit prospect: apples, 75; pears, 100; peaches, 50; plums, 25. Apple scab is bad in some localities, and there is a little fire blight; very little peach leaf-curl, and infestation of a few peach trees by the yellows. A little summer spraying is done. It is very dry and all crops are showing the effect, although well-tilled orchards are holding their own.

Phillipston (W. L. MANN). — The drop has been 60 per cent of fruit set. Fruit prospect: apples, 60; pears, 90; peaches, 85; plums, 75; blackberries, 95; blueberries, 70. The currant crop yield was 65, as dry weather reduced it. Currants brought, however, 120 per cent prices. Raspberries have not been entirely harvested, and the prospect is for an 80 per cent crop; prices are 115. Cherry crop is 25 per cent of normal, owing to late frosts, and has sold for 90 per cent prices. Some peach leaf-curl has made its appearance. Brown-tail moths are the insects doing most injury. Continued drought is causing fruit to drop badly and leaves to turn yellow.

Lunenburg (H. O. MEAD). — Some fruit drop on dry land. Fruit prospect: apples, 45; pears, 80; peaches, 35; plums, 30; blackberries, 70. Currant crop was 75; frost and dry weather hurt it; prices have been 25 per cent above normal. The raspberry crop has not been wholly harvested, but its yield may be put at 70; frost was the chief factor in reducing it; prices have been about normal. Some apple scab, very little peach leaf-curl and just a trace of grape mildew are to be seen. San José scale and gypsy moths are the most troublesome. Very little summer spraying. Trees on dry land are beginning to show the effects of the drought.

Lancaster (C. L. WILDER). — The drop of fruit has been about as usual. — 30. Fruit prospect: pears, good; peaches and plums, none; blackberries, good. The currant crop is 75 per cent of a normal. Raspberries have been harvested, and the crop has yielded about one-half the usual amount, as birds and dry weather have been against

it. Summer spraying is practiced in only a few cases. The condition of apples is such that many growers have become discouraged and stopped spraying.

Northborough (JOHN H. FAX).— There has not been much drop since June 26. Fruit prospect: apples, 40 to 50; pears, 80; peaches, 85; blackberries, 100; blueberries, 80. The cherry crop was heavy and prices good. Apple scab has appeared to a moderate extent, and peach leaf-curl appeared in one orchard, but was kept under control by spraying. Summer spraying is practiced to a certain extent. Those spraying are the ones who have fruit to show. Unsprayed orchards have no fruit this year that is worth anything, and are in dying condition.

Grafton (DAVID L. FISKE).— There has been a drop of 20 per cent since June 26, and a total, to date, of 50 per cent of fruit set. Fruit prospect: apples, 20; pears and peaches, 100; plums, 50; blackberries, 100; blueberries, 50. Currants were a 50 per cent crop; scale, plant lice and drought contributed to reduce the yield; prices were normal. The raspberry crop has been mostly picked, and is normal and selling for the usual prices. Both yield and prices of cherries have been normal. Orchards are unusually free from all diseases; scale and entworms are doing the most damage at present. Unless rain comes soon, crops of all sorts must suffer; yet no dry springs or wells have been heard of.

MIDDLESEX COUNTY.

Marlborough (F. H. BROWN).— Fruit drop has been scattering. Fruit prospect: apples, 50; pears, 100; peaches, 75; blackberries, 100; blueberries, 75. Drought reduced the currant crop. Raspberries have been practically harvested, with a normal yield and usual prices. The cherry crop yielded normally, and sold for the same prices as formerly. Some apple scab has appeared on the foliage of Baldwins. Peach leaf-curl appeared only very early, and peach black spot is bad on some varieties, while others are nearly free. Summer spraying not practiced to any extent. We need soaking rains badly.

Framingham (EDWARD F. BELCHES).— The total fruit drop has been 70 per cent of fruit set. Fruit prospect: apples, 50; blackberries and blueberries, 100. Currants yielded a 70 per cent crop; late frosts apparently thinned out the berries in each cluster, both at the tip and in the center. Normal prices were realized. The raspberry crop has not been harvested, but the prospect is for a normal; demand is good and the usual prices will be received. Cherries seem to have disappeared from this section. Peach leaf-curl and gypsy moths are the only pests now apparent. Summer spraying practiced to a limited extent.

Stow (H. P. UNDERWOOD).— Early fall and summer apples have

dropped to the extent of 70 per cent of fruit set. Prospect for winter apples, 40; for early fall and summer apples, 70. The currant crop was 40, because of frosts in May; prices have been 20 per cent higher. McIntosh apples are infected by apple scab. Most insect damage is being done by the gypsy moth. Spraying done in 1912 was very effective, and there will be more done this year for the brown-tail moth between July 20 and August 10. Gravensteins promise a heavy yield.

Groton (F. EARLAND GILSON). — There has been much drop since June 26, especially of winter apples; total drop to date, about 20. Fruit prospect: fall apples, 75; winter apples, 25; pears, 50; peaches, 25. Early severe frosts, drought and insects reduced the currant crop to below normal; prices realized were 95. San José scale and brown-tail and gypsy moths are doing the most injury. Summer spraying is practiced in a small way by a few farmers. The Baldwin apple crop is very small, but the fall apple crop may give us 50 to 75 per cent of a normal; drought, insects and neglect to properly care for the trees are the causes of the low prospect.

Littleton (W. A. MUNSON). — Not much drop since last report; total drop to date is 60 per cent of fruit set. Fruit prospect: apples, 40; pears, 30; peaches, 40. Frost reduced the currant crop. Raspberries have been partly picked and are a 50 per cent crop, owing to dry weather; prices realized are 40 per cent higher than normal. One-half the fruit has apple scab; no summer spraying practiced.

Concord (C. W. PRESCOTT). — Not much drop since June 26; total per cent drop of fruit set is 5. Fruit prospect: apples, 60; pears, 80; peaches, 65; blackberries, 80; blueberries, 75. Currants were an 85 per cent crop because of frost, but prices realized were 125. The raspberry crop has been harvested, and yielded 80; dry weather reduced it; the crop sold for 110 per cent prices. Cherry yield, 35. Not much apple scab present. Spraying in summer is practiced. Picked the first Williams apples to-day, — July 26.

ESSEX COUNTY.

Haverhill (E. A. EMERSON). — The drop since July 26 has not been great, and the total drop, to date, is only 10. Fruit prospect: apples, 40; pears, 80; peaches, 75; plums, 50; blackberries, 80; blueberries, 75. Currants were a normal crop and brought the usual prices. Raspberries are all picked, with a yield of 80, because of dry weather. Cherries yielded as usual. Most insects have finished their job. The next brood of brown-tail moths will soon be at work. Not a great deal of summer spraying is done.

Methuen (MABEL F. NOYES). — The first two weeks in July caused a big drop; total drop to date, 10. Fruit prospect: apples, 50 to 60; pears, 85; peaches, very poor; blackberries, 95; blue-

berries, 33½. Raspberries have been harvested; the crop was only about 60 per cent of normal, as hot, dry weather shriveled whole clusters of berries: prices realized were 118 per cent. There seem to be fewer insects than usual at this time. The drizzling rain of July 19 started clover on early-mown land and kept garden crops from total destruction, but rain is badly needed.

Groveland (SAMUEL B. GEORGE). — Very little drop since last report; total drop, to date, 25. Fruit prospect: apples, 25; pears, 30; peaches, 40; plums, 20; blackberries, 75; blueberries, 100. The yield of currants was below normal, — 50; dry weather reduced it; prices were 110 per cent. A normal crop of raspberries has been harvested, and sold for 110 per cent prices. Cherries yielded normally and sold for 10 per cent above usual market prices. Very little fire blight has appeared, but peach leaf-curl is present to a large extent; yellows has infected peaches to a small extent. The gypsy moths and San José scale are doing most damage. The season has not been favorable for the development of a normal crop of fruit, as it was injured by frost 65 per cent.

Newbury (P. H. ILSLEY). — The apple drop has been 50 per cent since last report. Fruit prospect: apples, 25; pears, 75; peaches, 80; plums, 75. Very few currants and no raspberries grown. The normal cherry crop sold for 75 per cent prices. There is plenty of apple scab and peach leaf-curl in general. The gypsy moth is doing most injury. Summer spraying is done by a few growers, but not generally practiced. All crops are suffering for lack of rain. Apples are of very poor quality; other fruits are of fair quality, but of moderate yield. Young trees have made fine growth. Persistent spraying has checked the pear psylla.

NORFOLK COUNTY.

Westwood (H. L. CRANE). — Since June 26 there has been no more drop than ordinarily; the total drop is 50. Fruit prospect: apples, 60; peaches and plums, 90. Frost injured some varieties of currants, reducing the crop to 80 to 85 per cent of normal; prices realized showed an increase of about 20 per cent. The raspberry crop has been partly harvested; it is a 75 per cent crop, due to injury to the first blossoms by cool weather. The crop has sold for an increase of 25 per cent over usual prices. A limited amount of apple scab is present; webworms and cane borers are most troublesome. Summer and fall apples are a full crop, but winter apples only 40 per cent of normal. Not over 2 acres of raspberries and no blackberries, grown locally. This is not a large fruit-growing section.

Westwood (INGRAM I. MARGESON). — There has been much drop of fruit since last report; total drop is about 50. Fruit prospect: apples, 35; pears and peaches, 50; plums, 75; blackberries, 25;

blueberries, 75. May frosts, and rains at time of blossoming, reduced the currant crop to 75; 100 per cent prices have been realized. About 75 per cent of the raspberry crop has been harvested, and the prospect is for a 75 per cent yield; continued drought reduced it. Raspberries are selling for 125 per cent prices. Cherries yielded a normal crop and brought normal prices. Ten per cent of the apple trees are infected by scab, and 25 per cent of the peaches by leaf-curl. Pear psylla, San José scale and some aphids on young trees are prevalent; brown-tail and gypsy moths have been. Aphid is less troublesome than for the past three years. The late apple crop will be very light. Rain is much needed.

BRISTOL COUNTY.

Easton (WILMARTH P. HOWARD).— Considerable drop has occurred since June 26. Of fruit set, the total drop has been 50. Fruit prospect: apples, 50; pears, 75; peaches, 50; plums, 50; blackberries, 80; blueberries, 80. The currant crop was reduced to 75, partially by currant worms; prices have been about the same as in previous years. A 75 per cent raspberry crop has been harvested, and has sold for 40 cents per quart. Birds and frost damaged the cherry crop somewhat; the yield was 50 per cent of normal, and the crop sold for 10 cents per quart,— same as usual. Constant spraying is getting apple scab under complete control. There is very little fire blight. In some places gypsy and brown-tail moths are doing damage, but sprayed sections are very clear from injurious pests. Blueberries have commanded the highest prices known in this section in recent years, selling for 17 cents a box wholesale, and retailing for 20 cents per box. Those fortunate enough to own land where this fruit is prolific have reaped a harvest, where marketed to best advantage. The contributing cause of the large yield is the burning over of the Cape berry district.

Acushnet (HENRY A. JACKSON).— The drop has been considerable since date of last report; total drop to date, 25. Fruit prospect: apples, 75; pears, peaches and plums, 100; blueberries, 75. A normal currant crop sold for 125 per cent prices. Raspberries are picked and have yielded 75, the falling off being due to dry weather; the crop sold for 125 per cent prices.

PLYMOUTH COUNTY.

Hingham (U. S. BATES).— There has been much drop since June 26; total drop, 50. Fruit prospect: apples and pears, 50; peaches, 10 to 20; blackberries and blueberries, 100. Both yield and prices of the currant crop have been normal. Raspberries, as grown for family use, are a good crop; the market price is 25 cents per basket, which is about normal. A small amount of apple scab and

some peach leaf-curl are apparent. The only summer spraying done is by the tree warden and on a few estates owned by wealthy people. The estimate of fruit applies only to such trees as have been cared for. There are no commercial growers near by. The trees of private families have been generally neglected, and consequently ruined by tent caterpillars. The eggs of these insects have been already laid in great numbers for next year.

Rochester (GEORGE B. ALLEN).—There has been considerable drop since last report. Fruit prospect: apples, 75; pears, 75; peaches, full crop; plums, 40; blueberries, 60. A light bloom resulted in a 60 per cent currant crop, but prices realized were 20 per cent above normal. A 40 per cent raspberry crop has been picked, the dry weather contributing towards the reduction of the yield; prices have been 120 per cent. The sour cherry crop was normal in both yield and prices realized. Peach leaf-curl is present where trees were not sprayed; the most troublesome insect at present is the codling moth. Brown-tail moth nests are taken off late in winter or early in the spring. Spraying with lime-sulphur exterminates the tent caterpillar. The peach crop in this town will be 1000 or more per cent, as many new orchards, and all older orchards, are bearing this year.

BARNSTABLE COUNTY.

Truro (M. F. COREY).—Quite a little drop has occurred since June 26. Of fruit set the drop has been 50. Fruit prospect: apples, 60; pears, 90; peaches, 75; plums, 25; blueberries, 60. No currants or raspberries raised. Cherry crop was normal in both yield and prices realized. There is a light infection of fruit trees by apple scab, and a very bad attack by peach leaf-curl. Aphis is doing the most damage.

SUMMARY OF MARKET-GARDEN CROP CONDITIONS.

In the circular to market-garden correspondents, returnable July 28, the following questions were asked:—

1. (a) Has the late asparagus beetle made its appearance? (b) What is being done to exterminate it? (c) If fought by spraying, what mixture is used and how strong?

2. (a) How does the crop of string beans compare with normal? (Give per cent.) (b) Of shell beans? (Give per cent.)

3. (a) Give prices received for beets. (b) How does the acreage of late beets compare with normal? (Give per cent.) (c) Give per cent of germination of late-sown beets and cause of any shortage.

4. (a) Compare present acreage of late cabbage with normal. (Give per cent.) With 1912. (b) Compare present condition with normal.

5. Compare acreage of late carrots with normal.

6. Give condition of cauliflower crop (100 representing normal).

7. (a) Compare acreage of late celery with normal. With 1912. (b) Give condition at present time (100 representing normal).

8. (a) Is dry weather affecting sweet corn? (b) Give condition (per cent) compared with normal.

9. (a) Has the onion crop made a normal growth to date? (b) Is there any indication of thrip? (c) To what extent have maggots done damage? (d) What is present condition of crop? (Give per cent.)

10. (a) Compare green-pea crop with normal. (b) Give average price per bushel for 1913: for 1912.

11. (a) What is present prospect for tomato crop? (Give per cent of normal.) (b) Are they fruiting as well as usual? (c) Has any fruit been gathered from out-of-door plants at present time?

12. Has there been any damage by hail storms?

13. Irrigation and drainage. (a) What crops have received the largest amounts of water? (b) Has the application paid well? (c) Has any method superior to the Skinner system been devised? If so, give particulars. (d) Are farmers in your locality planning to put in any tile drains? (e) If so, how deep and how far apart will tile be laid? (f) Is drainage or irrigation by means of open ditches being practiced?

Replies were received from 31 correspondents, and from these the following summary has been compiled:—

The late asparagus beetle has made its appearance in Westhampton, Hadley, East Longmeadow, Leicester, Bedford, Billerica, Concord, Melrose and Tewksbury; 45 per cent of the correspondents reporting on this insect declare that the beetle is at work. Spraying is the usual method of control, although two report that chickens are allowed to run in the asparagus. Handpicking and liming are also mentioned as methods of control. Arsenate of lead mixed with water in various proportions is the spray chiefly used. In one case dry Paris green is applied as heavy as possible when the dew is on, and in another a small amount of Pyrox is used where there are no chickens about.

The crop of string beans is 74.8 per cent of a normal for the State, the dry weather being given as the affecting cause of the low yield. The shell bean crop prospect is somewhat better, being 82.6 per cent.

Only 7 per cent less than a normal acreage of late beets was sown, the acreage in some instances exceeding normal. The seeds did not germinate very well, however, principally on account of dry weather. The percentage germination was 73.6.

Wholesale prices per bunch received for beets vary from \$0.02 to \$0.05; the absolute average is \$0.032.

The present acreage of late cabbage, as compared with normal, is 82.4; as compared with 1912, 82. The condition is 78.4.

The late carrot acreage is 91.7. One correspondent reports the soil as being too dry for sowing carrot seed.

Drought, cutworms and maggots have reduced the condition of cauliflowers to 69.7 as compared with normal. This crop needs abundant moisture.

The acreage of late celery is 86 as compared with normal, and 90.7, as compared with 1912. The condition of the crop is 84.6.

The continued dry weather is affecting sweet corn, according to all but one report. Short stalks and small ears are the ultimate results. The condition is 72.6.

According to 11, or 61.1 per cent, of the reports, onions have not made a normal growth. Reports of indication of thrip are about evenly divided. Maggots have done considerable damage, apparently, to this crop, the average percentage being 19 per cent, while heavy damage is reported in 4 cases. The condition is 76.8.

The green-pea crop is 80.7 as compared with normal, but prices have been better than in 1912. The present-year prices per bushel have ranged from \$1.40 to \$3, with an absolute average of $\$1.93\frac{7}{11}$. Peas in 1912 brought from \$1.20 to \$2.50 per bushel, the absolute average being $\$1.65\frac{1}{3}$.

The tomato crop prospect is 85.1. Of 24 correspondents reporting, 14, or 58.3 per cent, state that the crop is fruiting as well as usual. Very little fruit has been gathered from outdoor plants.

A little damage by hail is reported from Winchester and Braintree.

Irrigation of market-garden crops is confined principally to the eastern section of the State. Celery is the crop most irrigated, while other crops reported are: beets, cabbage, onions, peas, carrots, leeks, cauliflower, lettuce, strawberries, sweet corn, cucumbers, beans and tomatoes. One correspondent waters his carnations in the field by the Skinner system.

The application of water has paid well in every instance. No correspondent claims that any system is better than the Skinner, although one commends irrigation by open ditches as effecting a saving in piping; one describes the "tin can" method as being in vogue in melon patches in particular; and still another reports that on account of low pressure he is obliged to irrigate celery by turning a furrow away from the

plants, filling with water, and turning back again, and further says he prefers this to the Skinner system for celery.

Open ditches are used for drainage of meadows and as trunk lines in tile-drain systems. Another form in use is the ditch filled with field stone and covered with earth.

NOTES OF MARKET-GARDEN CROP CORRESPONDENTS.¹

[Returned to us July 28.]

W. D. FORBES, *Buckland (Franklin County)*. — The late asparagus beetle has not made its appearance. String bean crop, 75; shell bean crop, not yet ready. Late beet acreage, 100; per cent germination, 60, because of no rain. Late cabbage acreage, 75, as compared with both normal and with the acreage of 1912; condition, 60. Cauliflower crop condition, 40. Dry weather is affecting sweet corn; condition, 70. Onions have not made a normal growth; thrips are present; maggots have done more damage than usual; onion crop condition, 65. Green pea crop yield, 80; price per bushel, \$1.60; 1912, \$1.50. Tomato crop prospect, 90; fruiting as well as usual; no fruit gathered. Farmers are planning to put in a small amount of tile drains; the depth depends on the soil. The drains are usually laid so that the top of the tile is a little below the subsoil; drainage is in practice to a limited extent. Total rainfall in town for months of June and July to date, $\frac{3}{4}$ inches. Frost, July 11, damaged corn and garden crops badly in valleys. Cold nights, hot days, no rain and an unusual amount of wind from northwest, west and southwest. Maximum temperature in shade, $102\frac{1}{2}^{\circ}$ F., July 5. Minimum temperature, 78° F., July 12.

JOHN DALRYMPLE, *Plainfield (Hampshire County)*. — No late asparagus beetle apparent. String bean crop, 75; shell beans, 50. Late beet acreage, 50; per cent germination, 50, shortage being caused by lack of rain; no beets sold yet. Late cabbage acreage 25 as compared with normal and with 1912. Unless we have rain immediately the late cabbage crop will be a total failure. Late carrot acreage, 25. Cauliflower crop not likely to be 10. Very little late celery grown. Dry weather is affecting sweet corn; condition is 50. Green pea crop, 50; price per bushel, \$3; 1912, \$2.50. Tomatoes grown only for private consumption. All market-garden crops are suffering from want of rain.

W. H. CLOSSON, *Easthampton (Hampshire County)*. — Late asparagus beetle has not appeared. String bean crop about 75; shell bean, 80. Percentage germination of beets is 50, because of dry weather. Late cabbage acreage, 80 as compared with normal; 75

¹ Crop acreage estimates given represent percentage of normal acreage.

as compared with 1912; present condition, 70. Acreage of late carrots is 75. Fifty represents condition of cauliflower crop. The dry weather is very materially affecting sweet corn, its condition being 60. Onions have not made a normal growth; very little damage done by maggots; crop condition, 70. Green pea crop is very poor, 50; price per bushel, \$1.75; 1912, \$1.50. The tomato crop promises an 80 per cent yield; not fruiting as well as usual; no fruit gathered. No damage by hailstorms. Farmers are planning to put in tile drains 3 feet deep, 3 rods apart, or in low places where needed; drainage or irrigation not practiced by means of open ditches. Rain was never more needed in this section than now; very little has fallen since May.

A. J. RANDALL, *Hadley (Hampshire County)*.—The late asparagus beetle is in evidence, and spraying is being practiced to exterminate it, 8 pounds of arsenate of lead to 4 gallons of water being used. (We add 1½ pounds Reynolds' Paris green.) String bean crop, 90; shell beans, 70. Beets brought 5 cents per bunch; acreage of late beets, 70; there was a shortage in germination, due to the drought. Late cabbage acreage, 50; 40 as compared with 1912. Late carrot acreage, 100. Cauliflower crop condition, 80. Late celery acreage, 80; with 1912, 110. Growth of onion crop is normal; no indication of thrip; maggots have damaged 5 per cent of the crop; crop condition, 110. Green pea crop yield, 90; price per bushel, \$1.40. Tomato crop prospect, 50; not fruiting as well as usual; some fruit gathered. Farmers here are not planning to put in tile drains. We sprayed asparagus three times, thereby killing all beetles.

JOHN L. DAVIS, *East Longmeadow (Hampden County)*.—The late asparagus beetle has appeared, and nothing is being done to combat it. String bean crop, 70; shell beans, 70. Beets sold for 10 cents a dozen; late beet acreage, 100; per cent germination, 75; dry soil and cutworms being the contributing causes of shortage. As compared with normal the late cabbage acreage is 80; with 1912, 80; condition, 80. Late carrot acreage, 70. Late celery, 80; with 1912, 100; condition, 80. Dry weather is affecting sweet corn, its present condition being 75. Onion crop has not made normal growth; condition, 75. Green pea crop, 50; price per bushel, \$1.40; 1912, \$1.20. The tomato crop prospect is 80; not fruiting as well as usual; no fruit gathered. Drainage or irrigation not practiced, except on gardens in a small way, but the application has paid well. Farmers are not contemplating putting in tile drains. In some instances drainage and irrigation are practiced by means of ditches, which are filled with field stone, and covered.

JAMES E. HAMILTON, *Palmer (Hampden County)*.—String bean crop, 65; shell bean crop, 70. Beets have sold for 30 cents per dozen bunches: late beet acreage, 100; per cent germination, 85. Late cab-

bage acreage, 90 as compared with normal and with 1912; condition, good. Acreage of late carrots smaller than normal. Cauliflower crop condition, 70; sales made at \$1.85 per box. Acreage of late celery, 80 compared with normal, 75 as compared with 1912; condition, 80. Dry weather is affecting sweet corn, but its condition is normal. Onions have made a normal growth; maggots have done 10 per cent damage; condition of crop, 75. Green pea crop condition, 100; price per bushel, \$2.75; 1912, \$2.50. Tomato crop prospect, 100; fruiting as well as usual; few tomatoes have been gathered from early set plants. It has been very dry.

A. N. SOMERS, *Westborough (Worcester County)*.—String bean crop, 40; shell bean crop, 80. Beets have sold for 36 cents per dozen bunches; late beet acreage, 100; percentage germination was 95; some damage was done by a torrential rain late in June, before seed had sprouted. Acreage of late cabbage, 100 compared with normal and with 1912; condition, 95. Acreage of late carrots, 90. Cauliflower crop condition, 90. Late celery acreage, 100 as compared with both normal and 1912; condition, 95. Dry weather is affecting, to a limited extent, the earliest and latest sweet corn planted; condition, 95. Onion crop has not made a normal growth; condition, 50; green pea crop yield, 75; price per bushel, \$1.85; 1912, \$1.60. Tomato crop prospect, 100; fruiting as well as usual. Early plantings give promise of immediate ripening of choice fruit; very few tomatoes have been gathered. There is practiced no systematic application of irrigation, except the "tin can" or hill irrigation used by myself on an acre of melons. An old tin can with a hole in the bottom is filled and set firmly in the hill. It is filled by hand as often as moisture is needed, and it works well but consumes much time; yet an acre of fine melons has been saved by it. Open-ditch irrigation and drainage are practiced to a limited extent only.

CORNELIUS LEAFLANG, *Leicester (Worcester County)*.—Late asparagus beetle has appeared. It is combated by spraying with Paris green or arsenate of lead; the former is applied at the rate of 4 pounds to 50 gallons of water, the latter at the rate of $\frac{3}{4}$ pounds to 50 gallons of water. String bean crop, 100; shell bean crop, 100. Late beet acreage, 100; percentage germination, 80. Late cabbage acreage, 75 as compared with normal; 60 as compared with 1912; condition, 70. Late carrot acreage, 100. Cauliflower crop condition, 65 as compared with normal. The acreage of late celery is 90; as compared with 1912, 85; condition, 70. Sweet corn is very much affected by the dry weather; condition, 65. Onions have made a normal growth and their condition is 125. Green pea crop yield, 50. Tomato crop prospect, 70; not fruiting as well as usual. The drought has affected market-garden crops severely. Peas were very poor, cabbage plants died after being planted in spite of

watering, and tomato leaves are curling. To-day's shower relieved the situation somewhat.

GUSTAVE THOMMEN, *Billerica (Middlesex County)*. — Some asparagus beetle, but nothing done to exterminate it. Crop of string beans, 50, — too dry. Percentage of germination of late-sown beets, 75; the crop is doing well where watered. Acreage of late cabbage, normal; condition, 80. Cauliflower crop condition, 60, — doing well where thoroughly cultivated. Many fields of sweet corn have been ruined by the dry weather; condition, 35. Green peas were a failure, as they dried up; prices range from \$2 to \$3 per bushel. Tomato crop prospect, 75; plants are fruiting well, but no fruit has been gathered. No irrigation except in gardens, where it paid well. The Skinner system is O. K. I am using it for carnations in the field and it pays big. Where crops have been attended to in a slipshod manner, the grower will harvest nothing; some growers are dry mulching, and report crops "ripping good."

J. NEWTON FROST, *Bedford (Middlesex County)*. — Late asparagus beetle is present, and plants are being sprayed with arsenate of lead at the rate of 25 pounds to 400 gallons of water. Shell bean crop, 100. The acreage of late cabbage is 75 per cent as much as in 1912; condition, good. Dry weather is affecting sweet corn, and damage by partridges has been done to the extent of \$100. Green peas and tomatoes are grown for home use only.

H. M. HOWARD, *Newton (Middlesex County)*. — String bean crop, 50 per cent of normal. Beets sell for 2½ cents per bunch. Late beet acreage, 90; percentage germination, 90. Late cabbage acreage, 100 as compared with both normal and that of 1912; condition, 80. Late carrot acreage, 75. Cauliflower crop condition, 100. Late celery acreage, 100 as compared with both normal and that of 1912; condition, 90. Dry weather has shortened the sweet corn crop to 70. Green pea crop yield, 75; price per bushel, \$2.50; 1912, \$2. Tomato crop prospect, 90; very little fruit has been gathered, — a few bushels from earliest clusters. Lettuce, beets, celery, beans and tomatoes, in order named, have received the largest amounts of water by irrigation. The application has paid well. Drainage by open ditches is most common where large amounts of water have to be moved from grasslands.

ERNEST K. BALLARD, *Lexington (Middlesex County)*. — String bean crop, 65. Beets sell for 2 to 2½ cents per bunch or \$1 per bushel. Late beet acreage, 110; percentage germination, 80; it is too dry. Late cabbage acreage, 90; condition, 75. Late carrot acreage, 85; seeds did not come up well and some burnt off. Late celery acreage, 90 as compared with both normal and that of 1912; condition, 80. Sweet corn is feeling the effects of the dry weather; condition, 75. The onion crop growth is 90 per cent of normal for the date; condition, 90. Tomato crop prospect, 80; not fruiting

as well as usual. Carrots, beets and celery have received the most irrigation; the application has paid well; no method superior to the Skinner system has been devised. Low ground is tile-drained 3 to 4 feet deep, and this method is found to be much better than open ditches. Crops as a rule look poorly, and the yield will not be more than one-half or two-thirds where water could not be applied or the ground was low. Prices have ruled a little higher than last year.

HOWARD W. FOSTER, *Tewksbury (Middlesex County)*. — The late asparagus beetle is picked by hand. String bean crop, 75; shell bean crop, 75. Beets have brought 20 to 25 cents per dozen bunches, 4 in a bunch. Late beet acreage, 110; very few beets sown, as it is too dry. Late cabbage acreage, 75 as compared with both normal and that of 1912; condition, 75. It is too dry to sow late carrots. Cauliflower crop condition, 50. Late celery acreage, 50 as compared with normal and with that of 1912; condition, 40. Sweet corn is showing the effects of dry weather; condition, 40. Growth of onions has been normal; thrips are present; maggots have damaged the crop 20 per cent; condition, 60. Green pea crop yield, 75; price per bushel, \$1.40; 1912, \$1.25. Tomato crop prospect, 100; fruiting well. Some fruit has been gathered from outdoor plants. It is very dry, with no indication of rain.

E. W. HASKELL, *Merrimac (Essex County)*. — Chickens are allowed to run in the asparagus for the purpose of controlling the late beetle. String and shell bean crops, 90. Beets have been selling for 30 to 75 cents per dozen bunches. Late beet acreage, 125; the seed is germinating slowly on account of dry weather. Late cabbage acreage, 125 as compared with normal; 100 as compared with that of 1912; condition, 100. Acreage of late carrots is about normal; the crop is looking well and is beginning to be sold in bunches. Cauliflower seed did not come up well; the crop prospect is 50 at present, but may improve later. Late celery acreage, 150 as compared with normal; 125 as compared with that of 1912; condition, 100. Sweet corn stalks are short and ears are small; condition, 75. Onions have made a normal growth; condition, 125. Dry weather cut the yield of green peas 20 per cent; price per bushel, \$1.50; 1912, \$1.25. Tomato crop prospect, 90; fruiting as well as usual; no fruit has been gathered, but early plants are looking fine; late set plants have been more affected by dry weather. Celery and early cabbage are those mostly irrigated. The application has paid well. For celery I prefer, to the Skinner system, the following: turn furrow away from the plants, fill with water, and then turn back; for other crops the Skinner is to be preferred where there is sufficient water pressure. Farmers are doing some tile draining. My onions never looked better, but I have seen beds almost stripped

by maggots, where only 10 per cent of a normal crop will be gathered.

FRANK L. GOWEN, *West Newbury (Essex County)*. — Late cabbage acreage, 100 as compared with normal; 110 as compared with that of 1912; condition, below normal. Cauliflower crop condition, 50; drought, cutworms and maggots have reduced the number of plants at least one-half since last report. Onions have not made a normal growth; thrip is present and the maggots have done more damage than usual; condition, 60; the small prospect is largely due to drought. Drainage is practiced to some extent. We have had no rain since May 29, and consequently all crops are much affected by the early and continuous drought.

WILLIAM P. NICKERSON, *Norwood (Norfolk County)*. — No late asparagus beetle as yet. String bean crop, 100; shell bean crop, 110. Beets have brought 50 to 60 cents per box of 18 bunches. Late beet acreage, 100; percentage germination 95, there having been little loss on account of dry weather. Late cabbage acreage, 80; it is too dry to transplant; as compared with that of 1912 the acreage is 78; the crop is later than normal. Late carrot acreage, 100. Cauliflower crop condition, 85; it is too dry for this vegetable. Late celery acreage, 100 as compared with normal; 100 as compared with that of 1912; condition, 95. Sweet corn is considerably burned; condition, 85. A normal growth of onions has been made; very little indication of thrip. Maggots have damaged the crop 5 per cent; condition, 80. Green pea crop yield, 100; price per bushel, \$1.75; 1912, \$1.65. Tomato crop prospect, 95; plants are fruiting as well as usual and a small amount of fruit has been picked from Earlianas. Celery and cabbage are the principal crops receiving irrigation. Meadow lands are drained by open ditches.

GEORGE A. ARNOLD, *Braintree (Norfolk County)*. — String bean crop, 60; shell bean crop, 85. Price received for beets has been 25 cents per dozen bunches. Late cabbage acreage, 125 as compared with both normal and that of 1912; condition, 100. Late carrot acreage, 100. Cauliflower condition, 100. Late celery acreage, 75 as compared with both normal and that of 1912; condition, 100. The onion crop has hardly made a normal growth; thrip is present; not more damage by maggots than usual; condition, 85. Green pea crop, 70; price per bushel, \$1.75; 1912, \$1.50. Tomato crop prospect, \$1.50; fruiting as well as usual. The season is backward, for last year bushels of tomatoes were picked on July 18, and this season none will have been picked before August 1. Slight damage by hail on July 10. Celery, beets, cabbages and cauliflowers were watered at transplanting time, and the application has paid well. We move our Skinner line bodily as we transplant, so that one line irrigates many acres. Tile drains are put in 2½ feet deep and 40

feet apart in heavy clay soil. Open ditches will be dug 100 feet apart for drainage of a reclaimed meadow.

N. A. HOWES, *Dennis (Barnstable County)*.—String bean crop is 90. Beets have brought 5 cents per bunch. Late cabbage acreage, 50 as compared with normal and with 1912; condition, 50. Sweet corn has suffered from drought to such an extent that its condition is only 60. The onion crop has not made a normal growth. Green pea crop, 70; price, per bushel, \$2; 1912, \$2. Tomato crop prospect, 80; no fruit has been gathered from outdoor plants. Lettuce planted just prior to the rain of last week is coming up.

W. E. EVERSON, *Hanover (Plymouth County)*.—String bean crop, 50; shell bean crop, 25; beets have brought 35 cents per dozen bunches; percentage germination of late-sown beets, 75. Late cabbage acreage, 60 as compared with normal, and below that of 1912; condition, good average. Late carrot acreage, 10 per cent less than that of 1912. Cauliflower crop condition, 90. No late celery here. Dry weather is affecting sweet corn to some extent; condition, 90. Onions have not made a normal growth; maggots have damaged the crop very heavily; condition, not over 40. Green pea crop, 80; price per bushel, \$2.10; 1912, \$1.70. Tomato crop prospect, 75; plants are not fruiting well, and no fruit has been gathered. No one here has as yet installed an irrigation plant, although there is some talk about the Skinner system. We will begin to pick green corn this week. All crops are quite late, but on the whole fairly good.

JOHN E. HOWLAND, *Tisbury (Dukes County)*.—We run chickens in asparagus beds and have no beetles. Where chickens are not allowed to run a small amount of Pyrox is used as a spray. String bean crop, 80; shell bean crop, 75. Beets have been selling for 6 cents per bunch, retail, and 4 cents per bunch wholesale. Late beet acreage, 100; percentage germination only 75 on account of dry weather. Late carrot acreage, 80. No cauliflower or late celery raised. Slight effects on sweet corn are noticeable from the dry weather; condition, 85. Onions have not made the usual growth; thrip is present, but very few maggots; condition, 80. Green peas have sold for \$2 per bushel; the 1912 price received was \$1.75. Tomato crop prospect, fair; plants are apparently fruiting as well as usual, but no fruit has been picked from outdoor plants to date. Beets and onions have been irrigated with profit.

SUMMARY OF CRANBERRY CROP CONDITIONS.

In the circular to cranberry crop correspondents, returnable July 26, the following questions were asked:—

1. (*a*) What is the prospect for crop at present time (100 representing normal)? (*b*) Does the dry weather appear to have reduced the crop prospect materially in your locality? (*c*) If so, what varieties seem to have been most affected? (*d*) Do the strictly dry bogs appear, as a rule, to be more affected than those which have had winter flowage?

2. Where water is available, are the growers in your locality irrigating their bogs by keeping the ditches full, or are they letting their bogs remain fairly dry during the dry weather?

3. (*a*) How did the bloom compare with normal? (Give per cent.) (*b*) Was there much blasting of the blossoms? (*c*) Has fruit set well? (Give per cent of blossoms set.) (*d*) Do Early Blacks or Late Howes promise better at the present time?

4. (*a*) Has there been a good growth of new uprights on bogs in your locality this season? (*b*) How does this compare with that of last year at this time?

5. (*a*) Is the wet-bog fireworm (blackhead cranberry worm) very abundant this season in your locality? (*b*) Did the first brood of this insect do extensive injury? (*c*) What percentage of the acreage in your vicinity seems to be affected by this insect?

6. (*a*) Has the fruit worm done as much injury as usual at this time? (*b*) What other insects have been particularly noticeable on cranberry bogs in your locality this season? (*c*) How have these insects been combated, and with what success? (*d*) Has the gypsy moth appeared in numbers on any of the bogs?

7. (a) Was there much "false blossom" on the bogs in your section during May and June? (b) If so, what varieties were most affected by it?

8. (a) Has there been an increase over last year in the amount of spraying for fungous diseases in your locality? (b) Has there been an increase in the number of growers who fertilize their bogs? (c) What kinds of fertilizers have been used?

9. Have wild bees (bumblebees, etc.) been plentiful this season?

10. (a) Has labor been scarce or plenty this year? (b) Has this factor influenced bog operations to any considerable degree?

Returns were received from 36 correspondents, and from these returns the following summary has been compiled: —

PROSPECT.

The first definite crop prospect estimate of the season places the crop at 86 per cent of a normal. The dry weather seems to have reduced the crop somewhat, more especially in Barnstable county. The late varieties have been the worst sufferers, according to 54.2 per cent of those reporting; 20.8 per cent state that the drought damage is about equally divided. The strictly dry bogs appear, as a rule, to be more affected by the lack of rain, but even so, these have the larger crop of berries. Damage to the highest and driest portions of one bog is put at 50 per cent. Plants on bogs where water was held late in the season are still partly in bloom, and the crop offers the poorest prospect.

IRRIGATION.

The general practice where water is available is to keep the ditches partially filled. In the case of peat bogs a continuous water supply is necessary and ditches are kept half full. Sixteen correspondents report the use of water; 12, very little irrigation or that the bogs are kept dry, or fairly dry; and 2 state that half the growers are irrigating and half

allowing their bogs to remain fairly dry; 2 that some bogs are kept wet and some dry; and 1 that a variety of practices exists.

BLOOM.

The bloom reports range from 75 to 150 per cent, and average 106.4 for the cranberry district. The bloom was above normal in Middlesex, Bristol and Plymouth, and about normal in the other counties. Reports of blasting of the blossoms are about evenly divided, but two of those in the affirmative state that considerable damage was done, and one correspondent places the amount of blossoms blasted at 25 per cent. The percentage of blossoms set is 68.3. It appears that the excessive use of water in the protection of bogs from frost, and the cold nights, was detrimental in many instances to a fuller set. At present, for the district at large, Early Blacks promise better than the Late Howes, 17 correspondents reporting thus, 2 favoring Late Howes and 11 declaring that the prospect is even.

NEW UPRIGHTS.

There has been an excellent growth of new uprights, better than last year, the average percentage comparison being 101.4.

Were the reports of "better," "some better" and "much better" expressed in figures, the higher average would more nearly represent the true growth as compared with that of one year ago.

WET-BOG FIREWORM.

This insect, otherwise known as the black-headed cranberry worm, is reported as very abundant by 16, or 44.4 per cent, correspondents; about as usual by 10, or 27.7 per cent, correspondents, and not very abundant by 10 correspondents. The first brood did some injury locally, apparently only where not held in check by spraying and flooding. This pest is generally under better control than formerly, owing to the wider adoption of combative measures. Whereas no direct comparisons can be made, it would seem that the infestation of 37.5 per cent of the cranberry bog acreage compares favor-

ably with former years, before the work of insect control was scientifically taken up by the Massachusetts Agricultural Experiment Station.

OTHER INSECTS.

The fruit worm has not done the usual amount of injury, according to 23 correspondents, 9 of whom report that, as yet, it has not appeared. The yellow-headed cranberry worm seems to be the next most troublesome pest, particularly on dry bogs. Other insects named are the false army worm, spanworm, budworm, cutworm and an unknown moth. Spraying, flowing, or both, are methods used to combat these insects. Fifteen correspondents report spraying; 3, water; and 2, flowing and spraying; while 1 states that nothing is done by way of protection from their depredations. Reports of success by these various methods are not very optimistic, and results appear to be only fair. The gypsy moth, fortunately, has not appeared in numbers on the bogs, only 3 out of 35 reports being to this effect. Much respecting insect control has yet to be learned, but even more of that already known to be practicable has yet to be faithfully applied by a greater number of cranberry growers.

FALSE BLOSSOM.

There was not much "false blossom" on bogs in general. Of 30 reports, 7 are "considerable," "much," "very much" and a "great deal;" 7 are of "some," "a little" and "very little;" while 16 are in the negative, meaning "not much false blossom." Late varieties were most affected, the Howes being mentioned by 4 correspondents; 3 report that all varieties were equally affected.

SPRAYING AND FERTILIZING.

There is very little increase over last year in the amount of spraying against fungous diseases, except in one case where a marked increase is noted. Eight correspondents report an increase; 29 report no increase. A similar proportion is had in the reports of advance in the application of fertilizers, 10

correspondents replying in the affirmative and 24 in the negative; of those declaring an increase, 4 state that there has been a little increase and 1, very little increase. From the meager returns it appears that nitrate of soda is the most popular fertilizer, being named by 8 correspondents. Other kinds used are: ammoniated bone, bone phosphate, acid phosphate, different brands of phosphates, special cranberry, potato fertilizers, potash, dried fish, any hill and drill commercial, and nitrate of soda mixed with potash.

WILD BEES.

Wild bees have been plentiful, in fact, more than usual in some places; one report reads "more than for three years." The reports are divided as follows: plentiful, 20; not plentiful, 6, with 1 report of "few;" same as usual, 9.

LABOR.

Help on the bogs has been rather scarce, which fact may have curtailed the building of some new pieces. In general, however, the supply of labor does not appear to have influenced bog operations to any considerable degree. The reports are divided as follows: scarce, 15; enough, or normal, 5; plentiful, 10. Of those reporting on the influence of the supply, $\frac{3}{4}$ declare none, or not much effect, on bog work.

NOTES OF CRANBERRY CROP CORRESPONDENTS.

H. S. TRUEMAN, *Somerville (Middlesex County)*.—Prospect for the crop is 75 per cent of normal, the dry weather having materially reduced it; late berries most affected; dry bogs more affected than those which had winter flowage. Growers held the water up when possible. Bloom is normal; considerable blasting of blossoms, and only 75 per cent blossoms set. The wet-bog fireworm is not abundant, and has done no extensive damage, only a small percentage of the acreage in this vicinity being affected by this insect. Gypsy moths have not been numerous on bogs. There was much "false blossom" on the bogs during May and June, which affected the late blooms. There has been an increase over last year in amount of spraying for fungous diseases, and also an increase in number of growers who fertilize their bogs. Wild bees have not been plentiful. Labor has been scarce, and bog operations have thereby been in-

fluenced to some extent. Early bloom was extra good, but dried up and dropped off. Early Blacks are better than the late berries.

NATHANIEL P. SOWLE, *Freetown (Bristol County)*.—Crop prospect is normal, dry weather not having materially reduced the crop. Growers are allowing their bogs to remain fairly dry. The bloom was normal, with very little blasting of blossoms; there was a 100 per cent set, and the prospects for early and late berries are about equal. There has been a good growth of new uprights,—about equal to that of last year. Very little damage from the wet-bog fireworm, and not much damage by the first brood. No apparent injury from fruit worm or other insects. Gypsy moths have not been numerous. Not much “false blossom” on the bogs. No increase in amount of spraying for fungus, nor in number of growers who fertilize their bogs. About the usual number of wild bees in evidence. Labor has been plentiful. Bogs in this vicinity are looking well, and present indications point to a fairly good crop.

MARCUS L. URANN, *Hanson (Plymouth County)*.—Crop prospect is 100. Crops in vicinity of Hanson and Wareham have not been materially reduced by drought, but those in Carver suffered, Early Blacks having been most affected. Dry bogs more affected than those having winter flowage. There was a bloom of 120; about 25 per cent of blossoms blasted; 75 per cent blossoms set. Howes promise better at this time. The growth of new uprights has been good, and is 110 as compared with last year. Wet-bog fireworm is very abundant; no extensive injury by first brood; 80 per cent of the acreage here is affected by this insect. The fruit worm has done the usual amount of damage, and the army worm has been especially noticeable on the bogs. Spraying for these pests has been practiced. The gypsy moth has not been numerous. Considerable “false blossom” on bogs, the Early Blacks being most affected. There has been no increase in the number of growers who fertilize. Wild bees have been plentiful. Labor has been plentiful, and bog operations have been affected thereby.

GEORGE EDWARD LEWIS, *Pembroke (Plymouth County)*.—Crop prospect at present is 100, not having been materially affected by the dry weather. Growers are letting their bogs remain fairly dry. Bloom was 120 per cent of normal, with considerable blasting; there has been an 80 per cent set, Early Blacks promising better than the late berries. The growth of uprights is good, about 110 compared with last year. Wet-bog fireworm is very abundant; the first brood did not do very much damage; 60 per cent of the acreage in this vicinity seems to be affected. Fruit-worm injury is now below normal; yellowheads and the army worm are quite noticeable; spraying destroys about 80 per cent of the insects; the gypsy moth has not appeared. There was very little “false blossom.” There has

been no increase in the number of growers who spray and fertilize. Wild bees are quite plentiful.

EDWIN A. STEVENS, *Duxbury (Plymouth County)*. — Crop prospect at present is 85, the dry weather having had quite noticeable effect; all varieties equally affected; very few dry bogs in this section. Growers are holding the water in the ditches quite high. Bloom was 110, with very little blasting; the set was 105, and both early and late berries promise about equal. The growth of new uprights is excellent, away ahead of last year. The wet-bog fireworm is not abundant, and a very small percentage of the acreage in this vicinity is affected. It is too early for fruit worm damage, and other insects have done very little injury. Insects in general have been combated with excellent success by flowing; no gypsy moths on the bog as yet. Very little "false blossom." No increase in spraying or fertilizing. Wild bees have been quite plentiful. Labor has been plentiful. At present there are many small berries, which will demand frequent rains and warm nights to develop.

HENRY J. THAYER, *Plymouth (Plymouth County)*. — Crop prospect is somewhat under normal, say about 90; dry weather has not been disastrous as yet; the strictly dry bogs, although getting quite dry, have not yet suffered greatly. Ditches are kept full where the supply permits. The bloom was fully 100, with considerable blasting; the set was about 75 per cent of the bloom. Early Blacks promise better than Howes. Growth of uprights has been excellent, better than last year. Wet-bog fireworm quite plentiful; first brood did little injury, spraying and flooding holding them in check; 50 per cent of the acreage affected to some extent. Fruit worms are ten days late this year; more insects on bogs than for several years; several varieties present and all have done some damage, but not usually great. Insects controlled successfully by flowing and spraying; no gypsy moths. There was considerable "false blossom" which affected all varieties equally. Very little increase in the amount of spraying or fertilizing; nitrates and phosphates used. Wild bees more plentiful than for three years. Help has been rather scarce, but this has not affected operations. A prominent factor at the present time is the large amount of very small fruit; at present it is uncertain whether it will ripen or die.

HENRY S. GRIFFITH, *South Carver (Plymouth County)*. — The crop prospect is 110, the dry weather probably having had some effect. Howes and Early Blacks have been most affected; strictly dry bogs not affected more than others. Tendency is to keep the water fairly high. The bloom was 125, with very little blasting; the set was 80 per cent of the bloom. The new uprights have grown fairly well, about the same as last year. The wet-bog fireworm has been quite abundant, about 10 per cent of the acreage being

affected; the first brood did very little damage. The fruit worm has been about the same as usual, and the yellowhead has done considerable damage; spraying is the most popular means of fighting these insects; no gypsy moths. Very little "false blossoms." The amount of spraying has increased this year; fertilization about the same. Wild bees quite plentiful. Labor has been ample. From 20 to 40 per cent of the bloom is stationary at present; whether it will develop is a question; the crop prospect, then, is perhaps 25 per cent less than a month ago. Bogs without water, or with water drawn early, look best.

T. T. VAUGHAN, *Carver (Plymouth County)*. — Crop prospect is 110; the dry bogs have the largest crops of berries. Early Blacks and Late Howes promise about equal. The growth of new uprights is good, better than last year. More wet-bog fireworms than usual, although the first brood did not do extensive injury; from 15 to 20 per cent of the acreage is affected. Too early for fruit worm; gypsy moth has not appeared in any numbers. The number of people spraying has not increased, although more are fertilizing. Wild bees more plentiful than last year. Bogs that were not flowed last winter, or were drawn off early, bloomed heavy, but the later they were drawn off, the poorer was the bloom. Fifty per cent of the blossoms are going to make berries.

GEORGE B. ALLEN, *Rochester (Plymouth County)*. — Crop prospect is 100, dry weather not having affected it. Growers used water when fruit was setting. Bloom was normal, with very little blasting of blossoms. Set is good. Growth of uprights has been good, being better than last year, as in 1912 it was very dry. The wet-bog fireworm is abundant, and on two or three bogs the first brood did extensive injury; a small percentage of the area in this vicinity seems to be affected by this pest. It is too early to determine injury done by fruit worm; the yellow-headed fireworms have been in evidence; spraying with arsenate of lead is the method used to combat these insects. There have not been many gypsy moths. Not much "false blossom." No increase in spraying or fertilizing. Wild bees have been as plentiful as usual. Labor has been scarce, but this had no effect on operations, as there was but a small acreage put in this season.

B. F. VOSE & SOX, *Marion (Plymouth County)*. — Crop prospect is 100, the drought not having affected it. Dry bogs do not appear to have been more affected than those having winter flowage. Growers are keeping their bogs fairly dry. Bloom was normal, there being but little blasting of blossoms; 90 per cent of blossoms set. Early Blacks promise better than the late berries. The growth of uprights has been good, — better than last year. The wet-bog fireworm is not abundant. The fruit worm has done the usual amount of damage, and some unknown moths have been noticeable

on the bogs. The gypsy moths have not appeared in any great numbers. There has been no increase in the amount of spraying and fertilizing. Wild bees have been very plentiful. Labor has been plentiful but costly, but operations have not been affected.

H. J. FRANKLIN, *Wareham (Plymouth County)*. — Crop prospect is 90, the dry weather having reduced the crop, and Howes being most affected. The winter-flowed bogs appear to have been more affected. There is a variety of practice in regard to flowing the bogs. Bloom was 120; considerable blasting; 20 to 40 per cent of blossoms set. Early Blacks promise better at the present time. The growth of uprights is good, about same as last year. The wet-bog fireworm appeared in about the usual numbers; no injury by the first brood. Fruit worm has not been as numerous as usual; spanworms were also in evidence. Insects have not been combated. Gypsy moths were numerous in some bogs. There was a little "false blossom," affecting Matthews, McFarlin and Howes. Increase in spraying has been marked, and there has also been a slight increase in the use of fertilizer, various kinds being used. Wild bees have been fairly plentiful this year. Labor has been scarce, probably influencing bog operations to some extent.

S. B. GIBBS, *Wareham (Plymouth)*. — Crop prospect is normal, dry weather not having noticeably affected it. Dry bogs do not appear to be more affected than those which had winter flowage. Growers allow their bogs to remain dry. Bloom was normal; no blasting of blossoms; 80 per cent of blossoms set. Early Blacks and Howes promise about the same crop. Growth of uprights has been good, 30 per cent more than last season. The wet-bog fireworm is not abundant, and the first brood did no appreciable damage. Fruit worm has not done much injury, and gypsy moths have not been numerous. Not much "false blossom." There has been an increase in number of growers who fertilize, phosphate and nitrate of soda, and ammoniated bone being used. Wild bees have been plentiful. Labor plentiful; bog operations not influenced. There are plenty of small berries mixed with larger ones, which will not mature owing to the cool nights.

W. E. R. NYE, *Bourne (Barnstable County)*. — Crop prospect is 85, having been reduced by the dry weather. Howes were most affected. Strictly dry bogs appear to have been more affected. Water raised in ditches for a few days for irrigation. Bloom was 90; a good deal of the fruit is pin-head size. Early Blacks promise better than Late Howes. The upright growth has been good, — better than last year. Wet-bog fireworm is not abundant, and no noticeable injury was done by the first brood. It is too early to determine injury done by the fruit worm; no other insects noticeable on the bogs; water has been used to combat the insects; gypsy moths not much in evidence. No increase in the amount of spraying or

in the use of fertilizers. Wild bees have been plentiful. The labor question has not influenced bog operations.

H. R. MASON, *Falmouth (Barnstable County)*.—Crop prospect is 75; dry weather did not materially reduce the crop. Growers keep their ditches fairly dry. About 75 per cent of blossoms set. Early Blacks promise better than Late Howes. Growth of uprights is good, same as last year. Wet-bog fireworm not very abundant; no extensive injury by first brood; about 10 per cent of acreage affected by this insect. Fruit worm has done about the usual damage; gypsy moth has not appeared in any numbers. There was not much "false blossom." Howes being most affected by it. No increase in amount of spraying; fertilizers supplying all the crop elements have been used. Wild bees were plentiful. Labor was scarce, but this did not affect bog operations.

WILLIAM F. MAKEPEACE, *Barnstable (Barnstable County)*.—Crop prospect is 90; dry weather reduced it; Early Blacks and Howes most affected; dry bogs not more affected than those which were flowed. Some growers keep their bogs dry, while others have them wet. Bloom was 150; considerable blasting; 50 per cent of blossoms set; Early Blacks promise better than late berries. The growth of uprights has been normal. The usual number of wet-bog fireworms appeared, and on some bogs the first brood did considerable damage; one-half to two-thirds of the acreage is affected by this pest. It is too early to determine fruit-worm injury; cutworms and false army worm were noticeable on the bogs; flooding and spraying are methods used to combat the insects. There was not much "false blossom." No increase in spraying or fertilization; such fertilizers as have been used are standard. Wild bees have been plentiful. Labor has been scarce, and this has considerably affected bog operations.

GERARD CHAPMAN, *Dennis (Barnstable County)*.—Crop prospect is about 60 in this locality, about one-third of the crop having been damaged by dry weather; late varieties most affected; dry bogs more affected than those flowed. Where water is available, it is held. Bloom was 100, and about 60 per cent of blossoms set. Early Blacks promise better than late berries. The growth of uprights has been about normal, and about the same as last year. The wet-bog fireworm appeared in about the usual abundance; no considerable damage done by the first brood; about 20 per cent of acreage affected by this insect. Fruit worm has done the usual amount of injury, and the false army worm has done a little damage; spraying has been practiced with fair success; gypsy moth has not been numerous. Only a small amount of "false blossom," which mostly affected the late varieties. No apparent increase in amount of spraying; small increase in use of fertilizers, ready mixed fertilizers and nitrate of soda being used. Wild bumblebees have been as plentiful as usual.

Labor has been rather scarce, but this factor has not much influenced bog operations. In this section there was an extra large crop last year, but there will be only about half as many this year, owing to dry weather, principally, and some winterkilling. The damage by frost was very little; worms did the usual amount of injury.

EMULOUS SMALL, *Harwich (Barnstable County)*. — Dry weather materially reduced the crop, most affecting the late varieties; dry bogs do not appear to have been more affected than those which had winter flowage. Growers are keeping their bogs fairly dry. The bloom was normal, not having been affected by blasting; about 75 per cent blossoms set. Early Blacks promise better than the late berries. The growth of uprights has been fair, about the same as last year. Wet-bog fireworm is quite abundant, but the first brood did no extensive injury; about 50 per cent of the acreage here is affected by this insect. The fruit worm has not yet appeared; some span worms are in evidence; gypsy moths have not been numerous. Not much "false blossom." No increase in amount of spraying or in the use of fertilizers. Wild bees have not been plentiful. In this vicinity the Early Blacks have set well, although fully 50 per cent of the berries are small, and it is a question whether they will mature or drop off. The late berries are not all out of blossom yet, so it is only guesswork to predict how they will turn out.

N. A. ELDRIDGE, *Chatham (Barnstable County)*. — Crop prospect is about normal; dry weather has materially reduced the crop, and both varieties have suffered considerably. I think on my land the dry bogs have stood the dry weather better than those that had water on them. Most growers keep the same amount of water on the bogs, irrespective of the weather. Bloom was normal; not much blasting; fruit did not set well. Early Blacks and Howes both suffered a good deal. The growth of uprights has been good, — much better than last year. The wet-bog fireworm is quite abundant, and some extensive injury was done by the first brood, 70 per cent of the acreage being affected by this pest. Up to the present time the fruit worm has not done much damage; the span worm has been in evidence. Spraying has been practiced to combat these pests, but with very little success; not many gypsy moths. There was not much "false blossom." No increase in spraying and fertilizing. Wild bees have been plentiful. I think if we had escaped the dry weather we would have had a large crop, but should say from the looks of things here that the crop would be about like the crop of the past two years.

JOHN E. HOWLAND, *Tisbury (Dukes County)*. — Crop prospect is 75, and was not materially affected by the dry weather. Growers are not holding water back. Bloom was 80; only slight blasting of blossoms; about 75 per cent of blossoms set. Early Blacks look best. The growth of uprights has been good, and fully equal to

that of last year. There has not been an abundance of wet-bog fireworms, and no apparent damage from the first brood; not more than 10 per cent of the acreage is affected by this pest. The fruit worm has not done much injury, and I have not noticed other insects on the bogs; no gypsy moths on the island. There was some "false blossom," Howes being most affected. No increase in amount of spraying or use of fertilizers. Bowker's Cranberry Fertilizer has been used. Labor has been scarce, but bog operations have not been influenced by this factor.

FRED B. MAGLATHLIN, *Nantucket (Nantucket County)*. — Prospect is for a two-thirds crop, dry weather having materially reduced it; all varieties suffered. Dry bogs seem to have suffered about the same as those which were flowed. Growers are keeping water in ditches. Bloom was above normal; not much blasting of blossoms; 80 per cent of the blossoms set. The outlook is about the same for Early Blacks and Howes. Wet-bog fireworm is abundant; no extensive damage by first brood. There were very few fruit worms, and only a few span worms appeared on the bogs. There was not much "false blossom." No increase in amount of spraying or use of fertilizers. About the usual number of wild bumblebees have been in evidence. There was every indication of a bumper crop of berries before this dry weather set in, but at the present time it looks as though the crop would be short. Berries set well, but the small berries dried up.

FRANKLIN E. SMITH, *Nantucket (Nantucket County)*. — The crop prospect is 75, dry weather having materially reduced it. Howes seem to have been most affected. Growers keep ditches half full, as is necessary in case of peat bogs when there is no rain. Bloom was normal; not much blasting; about 30 per cent of blossoms set. Early Blacks promise better than Late Howes. Growth of uprights has been good, although dry; better than last year. The wet-bog fireworm is abundant, but has been almost eliminated by the use of water; first brood did no extensive damage; 70 to 75 per cent of the acreage here affected by this insect. Fruit worm has not appeared, nor are other insects noticeable on bogs. There has been a slight increase in the amount of spraying, but none in the use of fertilizers. Wild bees have been plentiful. All necessary labor was obtainable; bog operations not influenced.

BULLETIN OF
MASSACHUSETTS BOARD OF AGRICULTURE.

CO-OPERATION.

SOME SUGGESTIONS TOWARD SOLVING ONE OF THE MOST VITAL
PROBLEMS OF THE PRESENT-DAY FARMER.

BY C. R. WHITE, PRESIDENT NEW YORK STATE VEGETABLE GROWERS'
ASSOCIATION, IONIA, N. Y.

At the present time, when there is so much discussion regarding co-operation, and when there is such an apparent need for a great advance along that line, as relief from labor stringency, and complex methods of distribution of the necessities of life, it is evident to all who have studied the question of co-operation from the practical standpoint that the greatest need of the time is to educate the public to a thorough understanding of what real co-operation is, and to impress upon the would-be co-operator the fact that to co-operate is more than to become a sort of half-hearted member of some association, with no real obligation on his part; and it is further important that a warning should be given so that the public may not become the victim of smooth-tongued promoters or over-zealous enthusiasts, who see great opportunities in co-operation, but who have not become familiar with the human equation involved, which can be worked out only by education of the individual co-operators, and is, therefore, a rather slow and tedious undertaking.

Viewing the possible ways in which co-operation can be of benefit, especially to the farmer, without relation to the difficulties of putting them into operation, the field is so vast and the apparent benefits so great that it is indeed disheartening when he realizes how slow must be the growth which will eventually plant thoroughly well-organized associations throughout our country, having a membership whose loyalty to their association will be second only to their loyalty to country.

Co-operative insurance has long since ceased to be but an experiment. Millions upon millions of dollars of fire insurance is carried throughout the country by such companies. Rates have been materially reduced, and adjustments are made upon merit and justice instead of by avaricious and technical methods.

The co-operative creamery in thousands of cases has been of greatest benefit, and when intelligently organized and conducted has almost invariably been successful; and right here let me mention a possible combination which can be carried on to great advantage with the creamery plant, where the same management, same steam plant and many other factors beside would work very auspiciously together. This combination is the co-operative bakery and the co-operative laundry. Why should not the overworked country housewives, where the help question is so hard of solution, be relieved by up-to-date bakery and laundry methods which are enjoyed in the cities? There are thousands of plants of this kind in operation in Europe where such co-operation is enjoyed.

Co-operative marketing is of the greatest importance if the "high cost of living," the now ever-present cry of the city consumer, is to cease. And yet at the same time there are many instances where the products of the farm waste in the field. Great savings can be made by co-operation in the purchase of supplies, and this can be worked to the greatest advantage in connection with the selling association, the same plants answering for both. By the combination of the two the association will be enabled to hire a competent manager, upon which so largely depends the success of all our efforts at co-operation.

Many States have enacted laws with the object in view of aiding co-operative efforts. In New York State a law for the incorporation of co-operative associations which is especially adapted to such organizations was enacted. Another act passed by the same Legislature authorized the Commissioner of Agriculture to appoint a superintendent of co-operation, whose duty is to assist in organization work. Such appointment was made, and the work is being carried forward in conjunction with the farm bureau. The New York State Grange Co-operative Committee are drafting plans of organization, and an organizer is to be appointed whose duty will be to assist local granges in organizing for co-operative work. Very many elaborate plans are being presented for bringing the producer and the consumer into closer relation, some of which have a great deal of merit. However, a word of warning should be given, for these schemes offer great opportunity for shrewd promoters to get rich at the expense of the would-be co-operators. In other cases, where there is no backing by those experienced in handling farm produce, so many difficulties are sure to arise with which the uninitiated will not be able to cope that their failure is certain. The

old adage, "Great oaks from little acorns grow," I believe to be a safe guide for the supporters of co-operation. Many small, well-organized associations, where the membership is in close touch with their organization and with each other, from which they can learn true co-operation, hold a close sympathetic relation with the individual members which is impossible with a large institution whose membership is widely scattered. But some one will say no small organization can stand the expense of doing business along lines which will bring greatest success. Very well. A large central organization can be formed, and in many cases has been formed, from the small organizations, each small organization becoming a stockholder in the central organization and each sending a delegate to the stockholders' meetings. This gives a strong central body made up of picked men from the many smaller bodies. Because of the large volume of business, such organizations are enabled to get the very best experts to handle it, and further, it is always sought by the very best houses. Their strength commands the respect of the transportation companies. It enables them to have representatives in the field both at the receiving point and at the point of delivery, thus assuring the proper handling of the business.

From the foregoing it is easy to see the latent possibilities of co-operation. Some of our weak-kneed brothers will say it is visionary. But this is not so. I have not mentioned a single thing which is not represented by a living, working, successful institution, ranging from the small co-operative store to the mammoth Rochdale system of England,—which grew from an organization of nine weavers to its present huge proportions; and the eminently successful credit associations of Europe,—which assist the farmers to finance the farms and the institutions connected directly therewith; and in America the great citrus and deciduous fruit associations of the west.

We Americans are strong individualists and it is hard for us to give up that individual independence which is so diametrically opposed to co-operation; but necessity is the father of many great advances, and it is gradually crowding us to the advance line. As it forced European countries to co-operate in order to feed the vast population from a small territory, as it forced the great fruit interests of the west to seek relief through a community of actions, so it will steadily but surely drive us all to an understanding of the great benefits which are to be derived from co-operative efforts. To be sure, as has been the case in the past when co-operation has become an accomplished fact, the road will be strewn with the wreckage of failure, but so is it also strewn with wreckage in all commercial undertakings, and because of the failures it behooves us and enables us to take advantage of the past, and so organize that the pitfalls which have caused disasters before shall be avoided.

When shall the work of organization be commenced? The answer is simple: when the condition exists in marketing, purchasing, in dairy work or fruit growing, or in any other line of effort which can be materially improved by the combined effort of the citizens of the community. How shall the work of organization be carried out? The organizers should first make themselves familiar with the particular line of co-operative work which it is proposed to accomplish. It is essential that every member join with a correct understanding of what is expected of him and of what he has the right to expect in return from the association. The initial work of organization is so important that it is hardly possible to lay too much stress upon it. Lay your foundation well. Be careful that there is a perfect understanding of conditions, requirements and probable results. Be careful of your membership. It is not difficult, when getting subscribers, to keep out those very objectionable classes who never agree, who always want to take advantage, are habitual fault finders, or are dishonest; and, further, under no circumstances allow any one to become a member whose natural interests are not in accord with the purposes of the organization or who has interests which might be antagonistic. No one who is seeking position for himself should be allowed to become a member; if he is worthy, hire him, but do not allow him a voice in the membership. It is not necessary to have a large number to start with. A well-selected, loyal membership, which will work together with a determination to succeed, is the most desirable, even though small. All organizations should be incorporated. The sale of stock should be primarily for the purpose of obtaining members, although sufficient capital must be raised to carry on the business. Stock should not be sold with the view of an investment; therefore, the dividends on stock should be limited to a very nominal rate. All stock should be redeemable by the association at par, and a provision to that effect should be printed on the certificate and become a by-law of the organization. This provision should be operative when stock is offered for transfer, thus guarding against the possibility of the stock being bought up for the purpose of control. Dividends other than the nominal dividends paid on the stock should be paid to the co-operators in proportion to the volume of business done by them with the association. Do not be stingy in hiring a manager, for while the cost may seem large it will pay in the long run to have a competent man.

When the association is finally ready to do business there are some rules which should be followed explicitly. Absolutely no favors should be shown; treat every one alike, rich or poor, black or white; otherwise sore spots are sure to be made which are hard to heal. The strictest honesty should be exacted from all; a contract should be made with the members of the association which should define

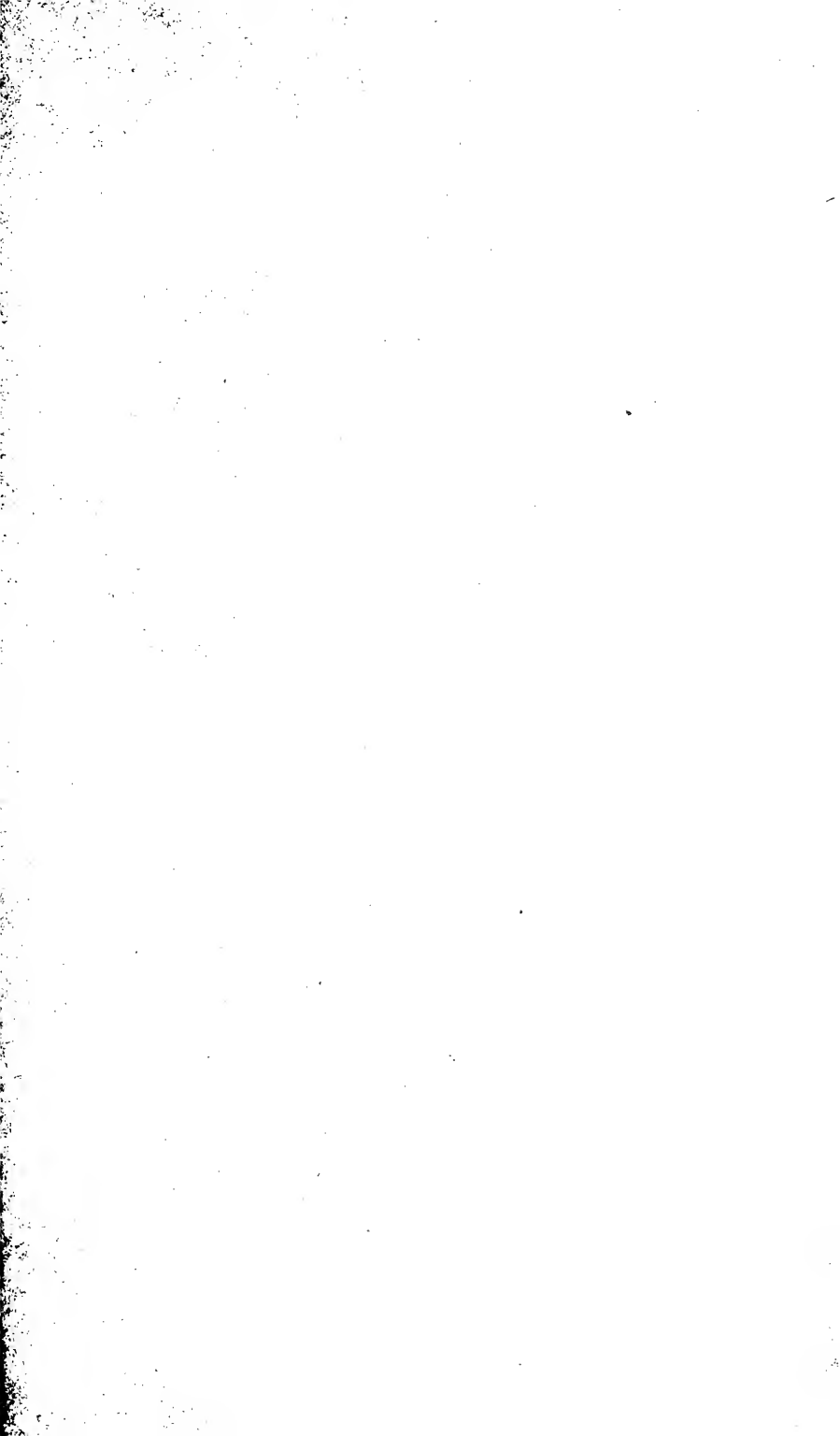
clearly and concisely what each party is to do for the other, upon what terms the transactions between the association and the individual are to be carried out, the amount of business to be transacted as near as possible and a forfeiture for breach of contract. In handling the transactions between members all contracts should be made the same as if no relation existed between them in the way of membership, and such contracts should be carefully drawn so as not to conflict with the anti-trust laws or with the decisions of the courts in relation to the restraint of trade. These contracts are very essential in order that the management may know what to expect, and after expenses have been incurred for the handling of the business of a member he should either produce the business so the profits will reimburse the association, or be compelled to make such reimbursement personally unless conditions which are beyond his control shall arise to prevent. It is extremely important that nothing shall be entered into in the way of a contract which can in any way be construed as seeking to restrain trade.

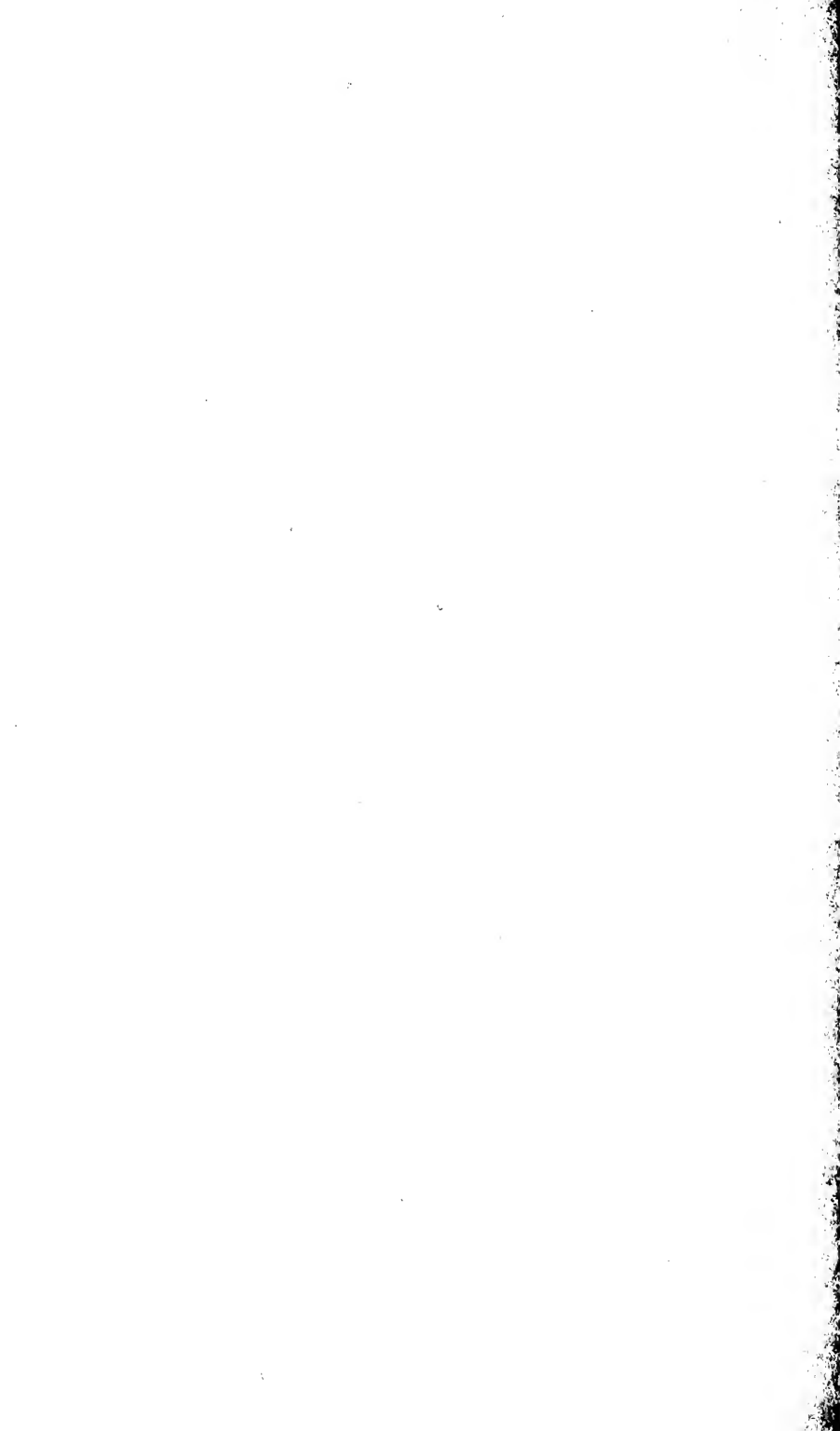
Many institutions have failed because they have anticipated their profits, paying upon estimates which proved to be too large and thereby exhausting the treasury. The most successful co-operative institutions do business with their members upon the market prices the same as they would with non-members, and, in fact, often transact business for non-members. At stated intervals, or when the business of a certain kind is closed up, the net benefits to which the members are entitled are declared as a dividend in proportion to the amount of business transacted with the individual members. This system has many advantages which will become apparent but which space will not permit of explanation here.

In handling of produce a system of pooling and insurance should be inaugurated so that the possible loss which is sure to come and is expected by all business houses will be distributed over the entire business, thus making what might be a heavy loss to the individual member practically nothing when borne by the entire membership thus co-operating to stand losses as well as to make profits.

In marketing produce I cannot too strongly urge the introduction of the packing-house system, each taking his product to the packing house or packing houses, which should be conveniently located and provided with proper facilities, and where trained, impartial packers pack every one's products to standard grades. High standard of quality should always be established and should be maintained at all times as to quality of product as well as to pack. Trade-mark brands should be used, so that the goods may become recognized in the market. A reputation is the most valuable asset in trade.

In conclusion, let me urge upon all co-operators to study well the methods used by the successful co-operative institutions, to be extremely careful in the introduction of innovations, for what may seem to be sure of success when viewed from the standpoint of our every-day competitive trade may fail absolutely when applied to co-operative work.





MASSACHUSETTS
CROP REPORT

FOR THE

MONTH OF AUGUST, 1913.

DIVERSIFIED FARM ACCOUNTING.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

WILFRID WHEELER, Secretary.

ENTERED JUNE 3, 1904, AT BOSTON, MASS., AS SECOND-CLASS MATTER,
UNDER ACT OF CONGRESS OF JUNE 6, 1900.

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THE STATE BOARD OF PUBLICATION.

CROP REPORT FOR THE MONTH OF AUGUST, 1913.

OFFICE OF THE STATE BOARD OF AGRICULTURE,
BOSTON, MASS., Sept. 1, 1913.

The following report for the month of August reflects the droughty conditions prevailing throughout the State up to the time of going to press. Recent, steady, penetrating rains have doubtless benefited Indian corn, rowen and late market-garden crops.

Owing to the lack of a sufficient appropriation to carry on the special crop reporting service, this work has been reluctantly discontinued for the present. The value of issuing special reports on those crops, in growing which large numbers of our farmers are engaged, has been sufficiently demonstrated to justify the resumption of the service another year, or as soon as funds permit.

In the special article on "Diversified Farm Accounting," the author, Mr. L. A. Sloman of Amesbury, furnishes much to think about. To pay, a business must be run by business methods. Farming is a business, and business men, running things in a business-like way, are making it pay. Mr. Sloman himself is a student of time and efficiency, and an expert in practical accounting for farms, country estates and agricultural school teaching.

WEATHER OF AUGUST.

The month was slightly warmer and much drier than the average August. The temperature conditions were a continuation of those that prevailed through July. There were a few very warm days, with the temperature 95° or above, but during the remainder of the month the daily maxima were unusually uniform, generally ranging well into the 80's. The night temperatures were very even, with minima round 60°.

The month as a whole was about 1° warmer than the average. The rainfall of the month was from 30 to 40 per cent below the normal for August. It was the result of showers that were well distributed through the month and in nearly all sections so that the droughty conditions were less unfavorable to agricultural interests than would have resulted had the precipitation occurred from a few storms. Rain fell on an average of nine days. Severe local storms were fewer than usual, although in a few instances considerable damage to property and some loss of life resulted from lightning. With an abundance of sunshine and seasonable temperatures the month as a whole was unusually pleasant. At the close there is much need in all sections of a general rain.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending July 28, 1913. — New England, Boston: Light showers were general about the middle of the week, but the drought is becoming severe. Temperatures were seasonable.

Week ending August 4. — New England, Boston: Copious showers occurred and relieved the droughty conditions. The temperature and sunshine were seasonable, and the weather was, as a whole, favorable.

Week ending August 11. — New England, Boston: Temperatures were moderate and there was about the average amount of sunshine. Only occasional light, scattered showers occurred during the week, and more rain is needed.

Week ending August 18. — New England, Boston: Rain is much needed as there were only a few scattered light showers. The temperature was low during the first few days.

Week ending August 25. — New England, Boston: Fair weather prevailed, except for showers the last of the week. Temperatures were moderate, the nights being cool.

PUBLICATIONS OF THE MONTH.

Circular No. 5. — The essay on "Pork Making for Massachusetts Farmers," by Dr. George M. Twitchell of Auburn, Me., originally published in the Crop Report for May, 1912,

has been reprinted as Circular No. 5. This article takes up types and breeds of swine, the utilization of forage crops for feeding, care of sow at farrowing time, care of young pigs, prevention of disease, elements of success and cost of production.

Judges. — A limited edition of a suggestive list of judges has been issued for the use of incorporated or other agricultural societies in connection with fairs or exhibits.

SUMMARY OF CROP CONDITIONS.

In the circular to general crop correspondents, returnable August 25, the following questions were asked: —

1. What is the condition of Indian corn? (Give per cent of normal.)

2. What is the prospect for rowen, as compared with a normal crop? (Give per cent.)

3. (a) What is the prospect for late potatoes? (Give per cent of normal.) (b) What percentage of the crop in your vicinity is affected by blight? (c) Have you noticed as much rot as usual?

4. What is the prospect for the following fruits (give per cent): apples, pears, peaches, plums, quinces, grapes, cranberries?

5. What is the condition of pasturage? (Give per cent.)

6. (a) How has oats yielded, as compared with normal? (Give per cent.) (b) How has barley yielded, as compared with normal? (Give per cent.)

7. If grown in your vicinity, what is the condition of celery? (Give per cent.) Of other late market-garden crops? (Give per cent.)

Special questions for correspondents in tobacco-growing districts: —

8. (a) How does the acreage of tobacco compare with normal? (Give per cent.) (b) How many acres of shade-grown tobacco are there in your town? (c) If you know of any other fields of shade-grown tobacco, give acreage and town in which located. (d) What is the condition of tobacco, as compared with normal? (Give per cent.) (e) Has harvesting commenced? If so, what percentage of the crop is being primed?

Returns were received from 124 correspondents, and from them the following summary was compiled: —

INDIAN CORN.

Many fields of corn, particularly on the lighter soils, are showing the effects of the drought in shorter stalks and smaller ears. Furthermore, the ears are not tipping well, and the kernels are not filling out as they should. The condition estimates from Berkshire are exceptionally uniform, there being 4 of 75 per cent and 6 of 80 per cent, while the remaining correspondent estimates the condition as 90 per cent. The average condition is: Dukes, 100;¹ Norfolk, 85.3; Bristol, 83.2; Hampshire, 82; Berkshire, 79.1; Worcester, 75.8; Franklin, 73.1; Plymouth, 71.2; Middlesex, 69.8; Essex, 68.8; Hampden, 60.7; Barnstable, 53.3; Nantucket, no report; the State, 74.3.

ROWEN.

Next to pastures, mowings have suffered most from the long drought. Grass on water-retentive soils in a state of high fertility is producing a fair second crop, but rowen as a whole will fall far below normal. The probability of occasional rains in September holds out some hope of a slightly better crop than now anticipated; otherwise rowen will yield as follows: Norfolk, 71.7; Bristol, 53.8; Dukes, 50;¹ Essex, 42.5; Plymouth, 37.1; Middlesex, 31.1; Hampshire, 23; Berkshire, 22.7; Barnstable, 21.9; Franklin, 21.3; Worcester, 20.6; Hampden, 10.5; Nantucket, no report; the State, 30.

LATE POTATOES.

The dry conditions prevailing in most sections throughout the month, while most unfavorable to the growth of blight and rot, did not allow normal development of potatoes. There is still time, however, for well-sprayed, healthy fields to make good growth under the influence of September rains. The prospect is: Norfolk, 90.8; Essex, 80; Bristol, 75.4; Dukes, 75;¹ Plymouth, 70.4; Middlesex, 69.2; Hampshire, 67.9; Worcester, 67.4; Berkshire, 66.1; Franklin, 65; Barnstable,

¹ One report.

64.5; Hampden, 57.7; Nantucket, no report; the State, 69. The crop will be largest where the blight is least prevalent, namely, in Norfolk. The percentage affected by blight is: Bristol, 30; Hampden, 29.5; Middlesex, 26.3; Worcester, 25.8; Berkshire, 21; Franklin, 19.2; Essex, 13.8; Plymouth, 13.1; Barnstable, 12.5; Hampshire, 11.7; Norfolk, 10; Dukes, but little; Nantucket, no report; the State, 20.7. The expression of one correspondent, "can't rot — too dry," characterizes the situation so far as rot is concerned. Potatoes will undoubtedly be a small crop of good quality.

FRUIT.

The crop prospect estimate for apples, peaches, quinces and grapes continues to decline, while that for pears and plums has increased several points each since July 26. Early varieties of apples are yielding better than will fall and winter varieties. Pears and peaches are comparatively heavy crops in Norfolk. Barnstable and Dukes show the best prospect for plums, although in these counties, as elsewhere, this fruit is not grown commercially to any extent. The cranberry crop estimate is hardly as reliable as that of last month inasmuch as fewer returns were had from the Cape Cod district.

Considering this area alone the crop will be 76.4 per cent of a normal. The following table gives the crop estimates as derived from general crop returns alone. The estimates of June 27 and July 24 are given for comparison: —

| | Berkshire. | Franklin. | Hampshire. | Hampden. | Worcester. | Middlesex. | Essex. | Norfolk. | Bristol. | Plymouth. | Barnstable. | Dukes. | STATE. | State, July 24. | State, June 27. |
|--------------|------------|-----------|------------|----------|------------|------------|--------|----------|----------|-----------|-------------|--------|--------|--------------------|--------------------|
| Apples, | 29 8 | 31 9 | 44 4 | 43 2 | 37 2 | 50 9 | 40 0 | 36 3 | 64 1 | 55 2 | 39 2 | 50 0 | 43 6 | 49 8 | 64 0 |
| Pears, | 49 2 | 79 0 | 85 8 | 81 0 | 79 9 | 85 6 | 81 3 | 103 3 | 88 1 | 81 4 | 62 5 | 50 0 | 81 4 | 71 1 | 77 0 |
| Peaches, | - | 47 5 | 53 1 | 50 7 | 65 0 | 66 4 | 63 8 | 97 5 | 87 7 | 88 1 | 57 5 | 25 0 | 62 2 | 63 2 | 70 0 |
| Plums, | 36 7 | 57 5 | 71 4 | 56 7 | 53 7 | 55 0 | 28 3 | 45 0 | 79 3 | 61 7 | 92 0 | 100 0 | 60 6 | 53 9 | 60 4 |
| Quinces, | - | 17 5 | 70 0 | 56 2 | 62 1 | 75 0 | 25 0 | 25 0 | 70 0 | 68 8 | 55 0 | - | 60 3 | 67 9 | - |
| Grapes, | 43 3 | 71 3 | 84 4 | 67 8 | 83 3 | 79 3 | 62 5 | 83 0 | 82 3 | 85 6 | 70 0 | 90 0 | 78 5 | 79 5 | - |
| Cranberries, | 50 0 | 20 0 | 50 0 | 60 0 | 32 5 | - | - | 70 0 | 83 8 | 85 7 | 60 0 | - | 68 4 | - | - |

PASTURAGE.

Pastures in most sections have practically ceased to furnish feed for stock. Several correspondents report that to keep up the flow of milk feeding at the barn is necessary. The value to the dairyman of the summer silo and of soiling crops cannot be overestimated.¹

As compared with normal, the general condition of pasturage has fallen off 25.4 points since July 24. The condition is: Dukes, 75;² Bristol, 58.2; Norfolk, 56.7; Plymouth, 55; Hampshire, 52.9; Essex, 48.8; Middlesex, 47.9; Franklin, 43.6; Berkshire, 41.1; Barnstable, 38.8; Worcester, 37.9; Hampden, 32.5; Nantucket, no report; the State, 46.

SMALL GRAINS.

Very little barley, apparently, was raised for grain. Reports of yield are scattering but quite uniform. County and State averages follow: Hampshire, 90.5; Hampden, 85; Franklin, 77.5; Berkshire, 75; Worcester, 66.8; the State, 78.1. The oat crop is reported from all counties as cut for green fodder, hay and grain, the average yields being: Berkshire, 83.5; Plymouth, 82.5; Hampden, 81.7; Hampshire, 76.4; Essex,² Barnstable³ and Dukes,² 75; Worcester, 73.7; Franklin, 72; Norfolk, 71.7; Bristol, 71; Middlesex, 65.8; Nantucket, no report; the State, 75.6.

CELERY.

Late celery was planted in a dry soil, and, except where irrigated, has had a dry soil in which to grow. One Berkshire correspondent reports that early celery is inclined to run to seed. This is an intensive market-garden crop, grown chiefly in deep, rich, moist, loose soils.⁴ The summary of scattering reports is: Berkshire, 80; Bristol, 76; Middlesex,² Essex,

¹ See separate No. 11, on "Soiling and Summer Silage," by Mr. H. O. Daniels, 1911, published by this Board.

² One report.

³ Two reports.

⁴ See separate No. 7, on "Celery Growing, Storing and Marketing," by Mr. H. M. Howard, 1910, published by this Board.

Plymouth¹ and Barnstable,¹ 75; Hampshire,² 73.8; Franklin,² 67.5; Worcester, 63.3; Hampden, 60; Norfolk, Dukes and Nantucket, no report; the State, 71.8.

LATE MARKET-GARDEN CROPS.

The composite condition of late market-garden crops other than celery is: Middlesex, 76.7; Bristol, 75.9; Berkshire, 75.8; Essex² and Plymouth, 75; Hampshire, 72.5; Norfolk, 71.7; Worcester, 60; Hampden, 57.5; Barnstable, 52.5; Franklin, 51.7; the State, 68.3. The drought cut all garden truck and made germination of late-sown crops difficult. The condition of specific vegetables are, for the State, as follows: beets, 71.7; cabbage, 62.8; carrots, 80;¹ mangel wurzels, 92.5;² onions, 80;¹ squash, 66.6; sweet corn, 78; tomatoes, 83.8; turnips, 70.

TOBACCO.

The tobacco acreage was increased above normal by 5 per cent in Franklin and Hampshire, and by 10 per cent in Hampden. There is some shade-grown tobacco in the town of Hatfield and some in Hampden County, but on account of the light demand for last year's crop the aggregate acreage has been decreased. The general condition of tobacco is 80 for the district; for Franklin, 75; Hampshire, 85; Hampden, 75.

Harvesting had commenced at time of making returns; only a small percentage is being primed. One correspondent reports that priming was tried by many big growers last year, but they lost money on hand-picked leaves; and that only one grower in his town is following the practice this year. He further states that the tobacco crop will run light in weight. It is bringing 12 to 17 cents per pound in the bundle.

¹ One report.

² Two reports.

NOTES OF CORRESPONDENTS.

[Returned to us August 25.]

BERKSHIRE COUNTY.

Cheshire (L. J. NORTHUP). — Condition of Indian corn, 80. There is no rowen. Late potato crop prospect, 50. Plum crop prospect, 75. Pastures are in poor condition. Barley yielded a 75 per cent crop. Crops as a whole are not even good; the dry weather seems to have been a detriment to fruit.

Windsor (HARRY A. FORD). — Condition of corn, 80. No rowen. Prospect for late potatoes, 50. Prospect for apples in some localities, 10; in others, 50. Pastures are in 50 per cent condition, — very dry. Oats yielded a 100 per cent crop.

Peru (F. G. CREAMER). — Indian corn is in 75 per cent condition. Rowen offers a 25 per cent prospect. Late potatoes will be a one-half crop. Apple prospect, 25. Pasturage is all dried up. Oats is looking well.

Stockbridge (F. A. PALMER). — Indian corn condition, 75. Rowen prospect, 25. Late potato prospect, 80. Fruit prospect: apples, 18; pears, 40; plums, 30. Pastures are so dry that there is no growth. Oats yielded an 85 per cent crop. Condition of celery, 90. It is so dry that apples are not growing as in a normal year. Dairymen are feeding in the barn the same as in winter, to keep up the flow of milk.

Lee (EDWARD J. NORMAN). — Indian corn condition, 75. Rain is very badly needed. Meadows are about dried up. Late potatoes offer a 75 per cent prospect, and on moist land are still growing; 50 per cent of the crop is affected by blight. Fruit prospect: apples, 10, looking very badly; pears, 75; grapes, 50. Condition of pasturage, 25. Mountain pastures and brooks are dried up. Oats yielded 80 per cent of a normal crop; straw was a little short, but the grain very good. Barley yielded a 50 per cent crop. Early celery is a little inclined to run to seed. General crop conditions, 60. Condition of other late market-garden crops, 75. Cabbage and root crops need rain to hurry them along.

Becket (WILLIAM H. SNOW). — Condition of corn, 80. Prospect for rowen, 60. The ground is so dry that late potatoes cannot

grow unless rain arrives; no blight to speak of. Fruit prospect: apples, 80; pears, 70; plums, 75; cranberries, 50. Condition of pasturage, 85. Yield of oats, 80. Condition of late market-garden crops, 85. It has been too dry and cold for best development of vegetables.

FRANKLIN COUNTY.

Rowe (HENRY D. WRIGHT).—Indian corn is in 60 per cent condition. Rowen crop prospect, 25. Prospect for late potatoes, 75. Apple prospect, 25. Pastures are in 50 per cent condition. The oat crop was 75 per cent of normal.

Shelburne (CYRUS S. BARDWELL).—Indian corn is in 90 per cent condition. No rowen. Prospect for late potatoes, 75; one-half the crop is affected by blight. Fruit prospect: apples, 50; pears, 90. Many pastures are entirely without feed; the condition of moist pastures is about 50. Barley yielded an 80 per cent crop. Wells and springs are nearly dry, and many farmers are carrying water for house and barn a long distance.

Conway (L. T. HOPKINS).—Condition of Indian corn, 45. No rowen. Late potato prospect, 50. Fruit prospect: apples, 40; pears, 70; quinces, 25; grapes, 75. Condition of pasturage, 40. Many people say they have never seen pastures so burnt as at the present time. Condition of tobacco, 60. It rained steadily for a few hours last night, which may make a big difference in the looks of things, but most crops are too far along to get a real benefit.

Sunderland (GEORGE P. SMITH).—Indian corn condition, 85. Rowen prospect, 70. Fruit prospect: apples, 40; plums, 90; grapes, 60. Condition of pasturage, 50; feed is short. Condition of celery, 85; of other late market-garden crops, 80. Acreage of tobacco, 105; condition, 75. Harvesting has commenced, and 25 per cent of the crop is being primed. Onions have been injured by the drought and thrip; there are some good fields, but many of the onions are small and will yield light crops. There have been only a few light showers since early in June.

Montague (A. M. LYMAN).—Condition of corn, 75. Prospect for rowen, 25. Late potato prospect, 50; 25 per cent of the crop is affected by blight. Have noticed black rot on 25 per cent of the early potatoes. Fruit prospect: apples, pears, peaches and plums, 25; quinces, 10; grapes, 50; cranberries, 20. Pastures are in 40 per cent condition. The yield of oats and barley was 75 per cent of normal. Celery and other late market-garden crops are in 50 per cent condition. Tobacco acreage, 110; shade-grown tobacco is raised in Hatfield; general condition, 90. Harvesting has commenced, but none of the crop is primed. A trip down one side of the river to Hartford, and back on the other, showed that crops are looking

better in Franklin County than elsewhere. Fruit, however, is better down the river.

Wendell (N. D. PLUMB).—Indian corn condition, 90. Rowen prospect, 25. Prospect is for 50 per cent of a normal crop of late potatoes; 40 per cent of the fields are affected by blight. Fruit prospect: apples, 30; pears, 100; peaches, 70. Pastures are in poor condition. Yield of oats, 60. Garden crops of all kinds will not average 25 per cent of normal.

New Salem (DANIEL BALLARD).—Indian corn condition, 50. Rowen will possibly be a 10 per cent crop. Late potato prospect, 40. Fruit prospect: apples, 25; pears, 110; grapes, 100. Pastures are in 25 per cent condition. Oats has yielded a 50 per cent crop; not much barley grown. We are in the midst of a severe drought, slightly broken by general rain on the night of the 22d. Brooks are nearly all dry and many pastures are without water.

HAMPSHIRE COUNTY.

Cumington (ANDREW A. SHAW).—Condition of corn, 100. Rowen offers the prospect for a 25 per cent crop. Late potato crop is about 75; not more than 25 per cent is affected by blight. Apple prospect, 50. Condition of pastures is not over 25,—very poor. Oats has been about a 75 per cent crop. The ground is very dry, and all crops are suffering for water. A spring which has not been dry in fifteen years has failed.

Middlefield (J. T. BRYAN).—Corn condition, 75. Rowen will be a 25 per cent crop. Late potato prospect, 25. Fruit prospect: apples, 25; pears, 100; plums, 100; grapes, 100; cranberries, 50. Pasturage condition, 75. Oats and barley have been normal crops. Condition of late market-garden crops, 50.

Chesterfield (HORATIO BISBEE).—Indian corn is in 90 per cent condition. Prospect for rowen, 10. Late potato prospect, 60; no blight yet. Fruit prospect: apples, 50; pears, 100. Pasturage condition, 50. On account of extreme drought crops are very light, and hardly any crop save corn is up to standard. Pastures are played out. Hay crop was light, but quality was good, and it is stored in good condition for the winter.

Westhampton (LEVI BURT).—Indian corn condition, 75. Prospect for rowen, 15. Late potatoes will be a 50 per cent crop. Fruit prospect: apples, 25; pears, peaches and quinces, 50; grapes, 75. Pastures are in 50 per cent condition.

Hadley (E. J. BURKE).—Condition of corn, 98. Rowen will be a 50 per cent crop. Late potatoes offer a 90 per cent crop prospect; 25 per cent are affected by blight. Fruit prospect: pears, 105; peaches and plums, 103; grapes, 100. Condition of pastures, 85.

Yield of oats, 90, and that of barley, 102. Less than an acre of celery grown here. Condition of late market-garden crops, 90. No shade-grown tobacco this year because there was no demand for last year's crop; general condition, 95. There is only one man in Hadley priming his tobacco; it was tried by many of the big growers last year, but they lost money on hand-picked leaves. The acreage of tobacco shows an increase of 5 per cent, but the crop will all run light in weight; it is bringing 12 to 17 cents in the bundle. The acreage of onions and potatoes shows a decrease.

Belchertown (ALMON L. PRATT).—Indian corn condition, 70. The rowen crop will be next to none. Late potato prospect, 80. Fruit prospect: apples, 50; pears, 100; peaches, 50; plums, 100; quinces, 90; grapes, 90. Pasturage condition, 70. Oat crop yield, 90. Barley yielded an 80 per cent crop. Condition of late market-garden crops, 80.

Enfield (D. O. CHICKERING).—Condition of corn, 100. Rowen prospect, 25. Late potato prospect, 50. Fruit prospect: apples, 10; pears, 100; peaches, 25; plums, 10; quinces, 50; grapes, 80. Condition of pasturage, 25. Oats was a 75 per cent crop. Market-garden crop condition, 75.

Ware (J. H. FLETCHER).—There is not as much Indian corn grown for grain as usual, as many of the farmers are putting it into the silo. Very little rowen. Prospect for late potatoes is not very good, and some fields are very poor. Fruit prospect: apples, not many; pears, very few; peaches, only a few; grapes, some wild ones. Pasturage is very poor and the farmers are feeding in the barn. Not much oats grown except for feed; some farmers are sowing barley for late feed. Late market-garden crops are not very good as we have had hardly any rain.

HAMPDEN COUNTY.

Tolland (E. M. MOORE).—Condition of Indian corn, 80. There will be practically no rowen. Late potato prospect, 60. Fruit prospect: apples, 40; pears, 90; cranberries, 60. Condition of pasturage, 25. Oats has yielded a 75 per cent crop and barley an 80 per cent crop. We have had the driest season ever known. A good many wells and springs have failed. Feed in pastures and fields has dried up. Where grass was cut the stubble is brown.

Blundford (ENOS W. BOISE).—Corn is in 75 per cent condition. Rowen prospect, 20. Prospect for late potatoes, 50. Fruit prospect: apples, 40; pears, 100; peaches, 75; plums, 75; quinces, 50; grapes, 80. Condition of pastures, 50. Oats and barley yielded 90 per cent crops. Condition of late market-garden crops, 80. Corn as well

as all crops are suffering from drought. Potatoes are small. Apples have fallen badly and are undersized.

Russell (E. D. PARKS).—Condition of corn, 85. Rowen will be a 50 per cent crop. Late potatoes will be a 90 per cent crop, and 35 per cent is affected by blight. Fruit prospect: apples, 90; pears, 100; peaches, 85; plums, 100; quinces, 80; grapes, 90. Condition of pasturage, 70. The oat crop was 80 per cent of normal, while barley yielded an 85 per cent crop.

West Springfield (N. T. SMITH).—Corn will not be over a 50 per cent crop. There is no rowen at present, but what a wet September may do is problematical. The crop of late potatoes will possibly be 60 per cent of a normal; blight has affected 40 per cent of the crop. Fruit prospect: apples, 25; pears, 100; quinces, very few; grapes, 80. There is practically no feed in the pastures, but they serve as exercising ground for the cows. But little oats is raised; the crop will be 60 per cent of a normal. Large quantities of celery are grown, but the yield will be only about 60 per cent as compared with normal, and the condition of other market-garden crops is about the same. Formerly, large quantities of tobacco were raised here; now there is none, market-gardening having taken its place. All crops are suffering severely from drought. On the night of August 22 less than one-half inch of rain fell. It came gently and revived vegetation slightly, but by the 24th the good results had vanished.

East Longmeadow (JOHN L. DAVIS).—Indian corn condition, 25. Rowen prospect, 10. Late potatoes will show a 40 per cent crop; have noticed some dry rot. Fruit prospect: apples, 40; pears, 100; peaches, 50; plums, 80; quinces, 70; grapes, 70. There is no pasturage. The yield of oats was 70 per cent of normal. Condition of celery and other late market-garden crops, 40.

Hampden (E. NORTON DAVIS).—Dry weather has ruined some fields of corn; condition is 75 to 80. Very few farmers here cut any rowen. Late potato prospect, 70 to 80; fully 50 per cent of the crop is affected by blight. Fruit prospect: apples, 40; peaches, 10; plums, 25; grapes, 90 to 95. Pastures are pretty well dried up; condition, 60 to 70. The crop of oats was 80 per cent of normal.

Brimfield (F. N. LAWRENCE).—Corn condition, 50. Rowen prospect, 10. Crop of late potatoes will be 50 per cent of normal; blight has affected 10 per cent of the crop. Fruit prospect: apples, 25; pears, 50; peaches, 25; plums, 10; grapes, 75. Condition of pasturage, 50. The oat crop was 80 per cent of normal. We have had some showers in the past two weeks, but they came too late to save most crops.

WORCESTER COUNTY.

Ashburnham (E. D. GIBSON). — Indian corn condition, 75. Crop of rowen will be 10 per cent of normal. Prospect of late potatoes, 40 to 50; 50 per cent were affected by early blight. Fruit prospect: apples, 25; pears, 50; grapes, 90. Pasturage condition, 25. Oats was all cut for hay, and yielded a 75 per cent crop. Late market-garden crops are in 60 per cent condition. The season has been generally unfavorable to all cultivated crops. Extreme drought, with many days of intense heat, has kept the ground very dry, and even corn is very backward.

Petersham (B. W. SPOONER). — Indian corn is late, and many fields are dried up. No rowen to be cut. Late potatoes offer a better prospect than early ones did; one-tenth of the crop is affected by blight. Fruit prospect: apples, very few; pears, plentiful; peaches, scarce; plums, light; grapes, normal. Pastures are all dried up. Oats is not yet harvested.

Hubbardston (CHARLES C. COLBY). — Condition of Indian corn, 80. Rowen will be a 50 per cent crop. Late potatoes offer the prospect for a 70 to 75 per cent crop; very few are affected by blight. Apple prospect, 30 to 40. Pasturage condition, 70. Oats and barley are grown mostly as forage crops. This has been a poor season for farmers, owing to late frosts and dry weather through the summer.

Dana (LYMAN RANDALL). — Many pieces of corn were entirely ruined by drought; condition, 40. Rowen crop is the smallest ever seen, and will not be more than 10 per cent of normal. Late potatoes will not be over a 50 per cent crop; no rot or blight, but they are burned and dried up. Fruit prospect: apples, 20; pears, 30; peaches and plums, 10; quinces, 50; grapes, 60; cranberries, 50. Condition of pasturage, 25. Oats has yielded a 70 per cent crop. Condition of late market-garden crops, 40. It is hard to report accurately as we have experienced the worst drought ever known. All crops are dried up, except where grown on very wet ground. Old fields will have to be ploughed and reseeded before they will produce grass again.

Barre (JOHN L. SMITH). — Ensilage corn is in 75 per cent condition; very little corn raised for grain. Rowen will be a 10 per cent crop. Fruit prospect: apples, 25; grapes, 100. Condition of pasturage is 50 per cent of what it should be, and 25 per cent poorer than in the last three years. Oats as a fodder crop yielded 75 per cent of normal. This is the hardest year for the farmer in my experience. Crops and pastures are poor on account of the dry weather, and hay was not over 75 per cent of normal. Frost damaged the apple crop considerably.

Oakham (JESSE ALLEN).—Corn condition, 90. No rowen. Late potato prospect, 75; 50 per cent of the crop is affected by blight. Fruit prospect: apples, 25; pears, 75; peaches, 10; quinces, 10; grapes, 25. Condition of pastures, 25.—badly dried up. The oats crop was 75 per cent of normal. Condition of late market-garden crops, 25.

Sterling (HENRY S. SAWYER).—Condition of Indian corn, 75. Rowen prospect, 50. Prospect for late potatoes, 90; very few cases of blight. Fruit prospect: apples and pears, 50; peaches and plums, 25; grapes, 50. Pastures are very dry. Oats yielded 75 per cent of a normal crop; the crop is cut for fodder. Drought has seriously injured many crops more or less.

West Brookfield (MYRON A. RICHARDSON).—Indian corn is 70 per cent of a normal crop, having been affected by dry weather. There will be no rowen. Prospect for late potatoes, 85. Fruit prospect: apples, 50; pears, 80; peaches, 85; plums, 80; quinces, 60; grapes, 100. Condition of pastures, 25. On account of dry weather cows are fed entirely at the barn. No oats raised in this section for grain. On account of drought all crops are backward. About 50 per cent of the apples set have fallen.

Warren (WILLIAM E. PATRICK).—Condition of Indian corn, 50. No rowen. Late potato prospect, 65. Fruit prospect: apples, 25; pears, 95; peaches, 90; plums, 80; grapes, 75. Condition of pasture, 20. Yield of oats, 60.

Leicester (H. H. KINGSBURY).—Indian corn is in normal condition. There will be no rowen. Late potato prospect, 75. Fruit prospect: apples, 60; pears, plums and grapes, 100. Condition of pastures, 5. The whole oat crop is cut for hay. Condition of celery, 50.

Auburn (WILLIAM GILBERT).—Indian corn is about 90 per cent of normal. There is no rowen worth harvesting. Potatoes promise a normal crop; it is a little early for rot. Fruit prospect: apples, 50; pears, 100. Pastures are all dried up: condition about 50 per cent of normal. Oat yield was good, about normal.

Millbury, (C. R. HARRIS).—Indian corn condition, 80; dry weather is preventing the filling out and tipping of ears. No rowen is being cut. The second crop of clover is very small. Late potato prospect, 50; nearly all the crop is affected by blight; normal amount of rot. Fruit prospect: apples, 50; pears, 125; grapes, 150. Condition of pastures, 50.—about the same as in the last four years. Soiling is necessary to keep the flow of milk up to normal. Oat yield has been normal. On low moist land celery looks about normal, but its general condition is 80. Late market-garden crop condition: cabbage, 100; turnips, 100; mangels, 100. Late sweet corn is about normal, but must have rain soon to fill out the ears.

Oxford (B. W. MORSE). — Condition of Indian corn, 80. Rowen will be a 25 per cent crop. Late potatoes will be a 60 per cent crop; blight has not appeared to any extent. Fruit prospect: apples, 25; pears, 95; peaches, 45; plums, 50; quinces, 75; grapes, 70; cranberries, 15. Pasturage condition, 25. Yield of oats, 85. Very little barley seeded. Market-garden crops grown for home use only. There was no rain between July 17 and August 20.

Southborough (E. F. COLLINS). — Condition of Indian corn, 95. Rowen will be a 90 per cent crop. Late potato prospect, 98. Fruit prospect: apples, 10; pears, 50; peaches, 90; plums, 100; quinces, 60; grapes, 100. Pasturage condition, 95. Oats yielded a 90 per cent crop. Condition of sweet corn, 80; tomatoes, 85.

MIDDLESEX COUNTY.

Dracut (B. A. CLUFF). — Not much Indian corn grown. Rowen is very poor. Prospect for late potatoes, 50; one-half the crop is affected by blight. Fruit prospect: apples, 40; pears, 60; peaches, 40. Pasturage is very poor. Late market-garden crops are likewise very poor.

Westford (J. W. FLETCHER). — Condition of corn, 50. No rowen. Late potato prospect, 25. Fruit prospect: apples, 50; pears, 75. Pastures are all dried up. Crop of oats is 75 per cent of normal.

Ayer (FRED A. SMITH). — Indian corn is one-third normal size. On land where last season corn was 15 feet high, it is now 5 and 6. Very few fields have any rowen whatever; general prospect is for one-half of normal or less. Late potatoes will be two-thirds of a normal crop; very little blight or rot noticed. Fruit prospect: apples, 50; pears, 100; peaches, 75; plums and quinces, 100; grapes, 75. Pastures are dried up and some are producing no feed at all. Yield of oats, 75. Dry weather cut everything short, even blueberries.

Stow (GEORGE W. BRADLEY). — Indian corn is very backward, and its condition is not over 50 per cent of normal. Rowen is mostly dried up; prospect, 25. Late potato prospect, 50. Fruit prospect: apples, 75; pears, 50; peaches, 75; grapes, 50. Pastures are very dry; condition, 25. Oat yield, about 50.

Maynard (L. H. MAYNARD). — Indian corn condition, 90. All corn is showing the effects of the dry weather, silo corn rolling badly. Rowen crop will be only 25 per cent of normal, owing to dry weather. Late potatoes on moist land are looking fine, with the prospect for a normal crop. Fruit prospect: apples, 40; pears, 75; plums, 25; quinces, 50; grapes, 100. Pastures are practically all dried up, and cattle are being fed in the barn. Oats and barley are not grown for grain. Considering the drought, celery and other market-garden crops are in very good condition.

Lincoln (C. S. WHEELER).—Corn is in 80 per cent condition. Late potato prospect, 75; very little blight noticed. Fruit prospect: apples, 50; peaches, 40; grapes, 60. Pastures have been burned by continued dry weather, and their condition is not more than 30. Oat yield, 75. Sweet corn condition, 80.

Weston (EDWARD T. RIPLEY).—Condition of Indian corn, 90. Rowen prospect, 80. Late potatoes will be an 80 per cent crop; 75 per cent is affected by blight. Fruit prospect: apples, early, 100; late, 80; pears, 100; peaches, 60; plums, 100. Condition of pastures, 100. Late market-garden crop condition, 90.

Marlborough (E. D. HOWE).—Indian corn condition, 90. Prospect for rowen, 10. Late potato prospect, 90. Fruit prospect: apples, 50; pears, 100; peaches, 75; plums, 40; quinces, 50; grapes, 100. Pasturage condition, 50. All crops are suffering from lack of rain.

Hopkinton (W. B. THOMPSON).—Corn condition, 100. The rowen crop will be 25 per cent of normal. Late potato prospect, 75; one-half the crop is affected by blight. Fruit prospect: apples, 25; pears, 100; peaches, very few; grapes, 100; cranberries, 100. Condition of pastures, 50. No oats or barley raised for grain. Condition of cabbage, 25; tomatoes, 75.

ESSEX COUNTY.

Methuen (FREDERICK A. RUSSELL).—Very little Indian corn raised; ensilage and sweet corn predominate: condition, 50. Rowen will be a 10 per cent crop. Late potatoes offer a poor prospect; none have been harvested; very little rot has been noticed. Fruit prospect: apples, 25; pears and peaches, 100; plums, 40. Condition of pasturage, 50. Very little oats and barley raised. Condition of celery, 75; beets, 50; cabbage, 25; onions, 80. The extremely dry weather is affecting late crops to such an extent that it is difficult to form accurate estimates.

Haverhill (MILTON A. CORLISS).—Condition of corn, 75. Rowen prospect, 75. Late potatoes will be an 80 per cent crop; 5 per cent of the crop is affected by blight; very little rot noticed, — not as much as usual. Fruit prospect: apples, 75; pears, 85; peaches, 50. Condition of pastures, 60. Oat yield, 75; barley yield, 80. Celery and other market-garden crops are in 80 per cent condition. Very dry.

Rowley (D. H. O'BRIEN).—Indian corn condition, 75. Rowen will be a 65 per cent crop. Late potato prospect, 85; 50 per cent of the crop is affected by blight. Fruit prospect: apples, 40; pears, 100; peaches, 70; plums, 25; grapes, 75; condition of pastures, 60. Celery and other late market-garden crops are in 70 per cent condition.

Hamilton (G. R. DODGE).— Condition of corn, 75. Rowen prospect, 20. Late potatoes offer the prospect of a 75 per cent crop. Fruit prospect: apples, 20; pears, 40; peaches, 35; plums, 20; quinces, 25; grapes, 50. Condition of pastures, 25. Oats and barley not grown for grain. Condition of cabbage, 50; turnips, 50.

NORFOLK COUNTY.

Millis (E. F. RICHARDSON).— Condition of corn, 70. Rowen will be a 70 per cent crop. Late potato prospect, 75. Fruit prospect: apples, 10; pears, 70; peaches and plums, 40; quinces, 25; grapes, 90; cranberries, 40. Condition of pasturage, 30. Late market-garden crop condition, 60.

Foxborough (WILLIAM E. PERKINS).— Condition of Indian corn, 90. Rowen offers the prospect for a normal crop. Late potatoes will be a 100 per cent crop; 50 per cent is affected by blight. Fruit prospect: apples, 25; pears and peaches, 100; plums, 50; grapes, 75; cranberries, 100. Condition of pastures, 50. Oat yield, 80. Condition of late market-garden crops, 80.

Avon (S. FRANK OLIVER).— Condition of corn, 80 to 90. Rowen is very light and in some cases there is none at all; condition as a whole, 60. Late potatoes have stood the dry weather well, and offer the prospect of a 75 to 85 per cent crop; very little blight noticed. Fruit prospect: apples, 90; pears, 100; peaches, plums, grapes and quinces all look well. Dry weather has affected the pastures very badly; condition is not over 60. Oats is raised only for green fodder, and is yielding a normal crop. Barley sown for later fodder has not started well owing to dry weather. Late market-garden crop condition: carrots, 80; turnips, 70; beets, 75; mangel-wurzels, 85; winter squash, 70.

Randolph (RUFUS A. THAYER).— Indian corn condition, 80. Rowen prospect, 50. Late potatoes offer the prospect of a 90 per cent crop. Fruit prospect: apples, early, 50; winter, 25; pears, 100; peaches, 50; grapes, 75. Condition of pastures, 50. Oats as forage yielded a 75 per cent crop. Market-garden crop condition: tomatoes, 90; corn, 80; cabbage, 100. We have had very little rain during the past month. Pastures and mowings are very dry except on low land, and there will be very little fall feed.

Cohasset (ELLERY C. BATES).— Indian corn condition, 90. Rowen offers the prospect of a 50 per cent crop. Late potato prospect, 100. Fruit prospect: apples, 25; pears, 100; grapes, 75. Pasturage condition, 50. Condition of late market-garden crops, 75.

BRISTOL COUNTY.

Easton (WILLIAM N. HOWARD).—Condition of corn, 90. Rowen prospect, 50. Late potato crop will be 90 per cent of normal; 50 per cent of the crop is affected by early blight. Fruit prospect: apples, 75; pears, 90; peaches and plums, 80; grapes and cranberries, 75. Pastures are in 75 per cent condition. Oat yield, 90. Late market-garden crop condition, 80.

Norton (ALDEN G. WALKER).—Condition of Indian corn, 110. Rowen will be a normal crop. The yield of late potatoes will be 75 per cent of normal. Fruit prospect: apples, 80; pears, 100; peaches, 90; plums and grapes, 100; cranberries, 90. Pasturage condition, 90. Oat yield, 70. Condition of late market-garden crops, 85.

Attleborough (ISAAC ALGER).—Corn condition, 75. Prospect for rowen, 80. Late potatoes will yield normally. Fruit prospect: apples, 50; pears and cranberries, 100. Pastures are in 90 per cent condition. Yield of oats, 85. Condition of late market-garden crops, 100.

Seekonk (JOHN W. PECK).—Condition of Indian corn raised for grain, 80; corn is raised mostly for the silo. Rowen prospect, 60. Late potatoes are much in need of rain, the prospect being for a 60 to 70 per cent crop; not over 10 per cent of the crop is affected by blight. Fruit prospect: apples, 40 to 50; pears, 100; peaches and plums, 75; quinces, 50; grapes, 90. Pastures are not over 40 per cent in condition. Oats and barley are raised only for green feed. Celery condition, 80. Condition of other late market-garden crops averages 75. It is hard to give accurate estimates, as a two days' rain might improve conditions materially. While neighboring towns have had heavy showers, we have had only a few very light ones.

Dighton (HOWARD C. BRIGGS).—Indian corn condition, 75. Rowen prospect, 75. Late potato prospect, 60; blight affected about 50 per cent of the crop. Fruit prospect: apples, 50; pears, 50; peaches, 150; plums, 75; grapes, 100. Pasturage is in 50 per cent condition. Condition of celery and other late market-garden crops, 75. All crops are suffering from the drought. Springs and wells are failing. There have been no heavy rains since May.

Fairhaven (D. W. DEANE).—Condition of corn, 40. Rowen prospect, 10. Late potatoes will be a 50 per cent crop, and all fields are affected by blight. Fruit prospect: apples, 35; pears and peaches, 75; grapes, 50; cranberries, 75. Pastures never looked worse,—all dead. Oat yield, 60. Celery condition, 50. Condition of other late market-garden crops, 40. No rain of any account has

fallen for a period of sixty days. Forage crops never suffered more, in my experience. There have been forest fires everywhere.

PLYMOUTH COUNTY.

Marshfield (L. C. BARTLETT).—Condition of Indian corn, 100. Rowen prospect, 50. The crop of late potatoes will be normal. There is some blight, but it is too early to report upon rot. Fruit prospect: apples and pears, 50; peaches, 100; plums, 50; grapes and cranberries, 100. Oats as a forage crop yielded normally. Late market-garden crop condition, 100.

Brockton (DAVIS COPELAND).—Indian corn condition, 75. Prospect is for a 50 per cent crop of rowen. Late potato prospect, 50. Fruit prospect: apples, 90; pears and grapes, 100. Pastures are all dried up. Oats and barley are not raised for grain. Celery and other late market-garden crops have looked well, but need rain. Neighboring towns have had rain, but we have had none for some time. Everything is dry.

Bridgewater (ROLAND CASS).—Condition of corn, 80. Rowen prospect, 50. Late potatoes offer the prospect for an 85 per cent crop. Fruit prospect: apples, 60; pears, 80; peaches, 90; plums, 50. Pastures are in 50 per cent condition. Oat yield, 70. Market-garden crop condition: winter squash, 80; cabbage, 70; turnips, 80.

Plympton (WINTHROP FILLEBROWN).—Corn condition, 90. Prospect is for a 50 per cent rowen crop. Late potatoes will yield an 80 per cent crop; 25 per cent is affected by blight. Fruit prospect: apples, 105; pears, 110; grapes, 80; cranberries, 100. Condition of pasturage, 70. Yield of oats, 85. Condition of late market-garden crops, 90. Fruit worms are at work on the cranberries; otherwise there will be an excellent crop.

Wareham (A. B. SAVARY).—Indian corn condition, 25. Rowen prospect, 5. Late potatoes will yield a 20 per cent crop; one-half the crop is affected by blight. Fruit prospect: apples, 10; pears, 70; cranberries, 60. Condition of pasturage, 5. Late market-garden crop condition, 10. This has been the driest summer ever known and about everything is dried up. Have had no rain to speak of for about two months.

Rochester (GEORGE H. RANDALL).—Condition of Indian corn, 50. Prospect for rowen, 40. Late potato prospect, 50. Fruit prospect: apples, 50; pears, 80; peaches, 75; plums, 80; quinces, 75; grapes and cranberries, 80. Condition of pastures, 40. Oats yielded a light crop; it is all cut for hay. Late market-garden crop seeds did not come up well on account of drought. Dry weather has ruined nearly all crops, although some lots of corn and potatoes on low ground are fairly good.

Mattapoisett (E. C. STETSON).—Condition of Indian corn, 75. Rowen will be a 25 per cent crop. Late potato yield will be 75 per cent of normal. Fruit prospect: apples, 50; pears, 75; peaches, 50; plums, 90; quinces, 75; grapes and cranberries, 85. Pasturage condition, 50. Oats yielded a 75 per cent crop.

BARNSTABLE COUNTY.

Barnstable (BILL and DANIEL).—Corn is worthless except for fodder: some is being shocked. There will be absolutely no rowen. Late potato prospect, 60 to 70. Pastures are entirely dried up. Farmers are feeding hay in many cases. Oats has not been threshed. Except in a few family gardens truck has been largely abandoned. We have had no rain of any consequence since June 6, and then only a light shower. There is not a silo in this section, and farmers are either feeding their corn green or their winter hay.

Dennis (JOSHUA CROWELL).—Condition of Indian corn, 60. There will be no rowen. Late potato prospect, 50; very little blight has been noticed. Fruit prospect: apples, 40; pears, 60; peaches, 70; plums, 75; grapes, 60; cranberries, 40. Condition of pastures, 50. Market-garden crop condition, 50. There has not been a good rain for three months and everything is suffering.

Eastham (A. L. NICKERSON).—Indian corn is in 90 per cent condition. Prospect for rowen, 40 to 50. There will be a normal crop of late potatoes. Fruit prospect: apples, 50; pears, 75 to 80; plums, 100; grapes, 80; cranberries, 75. Pasturage is completely dried up; condition is 50; perhaps less. Everything is completely dried up, as we have had only two very light showers for a long time.

Truro (JOHN B. DYER).—The yield of corn promises to be not over 75 per cent of normal. Owing to dry weather the rowen crop will not be over 50 per cent. Late potato prospect, 75; very little blight noticed. Fruit prospect: apples, 25; pears, 50; peaches, plums and grapes, 100; cranberries, 50. Upland pastures are in 25 per cent condition. Very little oats and barley raised. Condition of celery, 75; other late market-garden crops, 80. The growing season has been extremely dry, no rain of any consequence having fallen since June 8.

DUKES COUNTY.

West Tisbury (GEORGE HUNT LUCE).—Indian corn is in normal condition. Rowen offers the prospect for a 50 per cent crop. Yield of late potatoes will be 75 per cent of normal; but little blight has been seen. Fruit prospect: apples and pears, 50; peaches, 25; plums, 100; grapes, 90. Pasturage condition, 75. Oat yield, 75.

BULLETIN OF
 MASSACHUSETTS BOARD OF AGRICULTURE.

DIVERSIFIED FARM ACCOUNTING.

BY L. A. SLOMAN OF AMESBURY, MASS.

PREFACE.

It isn't knowledge we lack, it is application.

Keeping accounts doesn't take time, it saves time, which is money. But keeping accounts without proper system means more books, more writing and unnecessary figures, and yet doesn't give clearly the showing made by each department.

It takes but a few seconds to make an entry now; disputes can't arise if it is done. It is a matter of habit only, soon becomes automatic, and keeps customers satisfied, which is the cheapest advertising.

Knowledge of losses avails you nothing without prompt application of the remedies. To judge the efficiency of the remedy you must have figures to show the results in different methods of handling each department.

Neatly printed billheads and letterheads, on good quality paper, are an incentive to make out bills and correspond. Your personality is conveyed by the quality of your stationery and neatness of the heading.

If you can't answer inquiries the day received, acknowledge them, stating when you will give the desired information.

Bills and statements should be sent out regularly, whether due or not.

Working capital means money on hand and in the bank. Confine your business to the working capital at your disposal.

Fix a credit limit at below one-half your working capital and keep the total owed you by all customers within that amount. So sure as you trust out an amount in excess of your ready money,

percentage of profit will decrease. Failures often occur from just this reason.

Anticipate large future payments by installments set aside regularly from the time they were contracted.

Note the difference between elapsed time and actual time necessary to do a certain piece of work. It is loss in dollars and cents. Farm labor can be and should be accomplished on schedule time.

Don't expect your help to beat the sun two hours in the morning and still be in the middle of their afternoon's work when it sets. Allow them regular, reasonable hours; proper, airy quarters; good, wholesome food and plenty of it; and fair wages to boot. Overlook any one of these and the others go for naught. You can't obtain and keep good help without them all.

Skilled help turns out most work with least fatigue.

The most successful men never hurry. They plan ahead.

Chores aren't boys' work. Scientific balanced ration feeding means cheaper and full capacity production, materially reducing costs.

Results depend no more on what you are doing than on the things you are not doing, or doing wrong.

The kind of farming and breed of stock you like best will pay you the largest profits. It is not necessary to practice the kind followed by the majority.

You don't have to go to Aroostook to raise potatoes, or west to raise beef or mutton. Proper crop rotation will produce the potatoes, and soil cropping the pastures, will increase your milk, beef and mutton production.

New England farmers have the advantage of markets near by.

Statistics prove the trend of travel from the west and Canada to be towards and not from New England. Look well to your methods and opportunities as you are now located.

Convince yourself by proper accounting methods where your mistakes were: take a new lease on life and the Old Farm and you'll be surprised at the opportunities so long overlooked because they were near by.

In no other trade in this country to-day has the student the advantages of the farmer. Knowledge is yours for the asking, either of the department at Washington or state colleges and boards of agriculture.

It is vitally necessary that you have your name put on the mailing list. Address Division of Publications, Department of Agriculture, Washington, D. C. You then receive each month a list of pamphlets published, most of which are free, from which to select those applying to your needs. Write for it to-day.

Any man, however successful, who doesn't keep records and take

account of stock frequently, can be shown where he is losing money. He may show a large yearly profit, but in some department, were records kept, a loss would be shown that was greatly reducing his legitimate profit.

Well-kept accounts showing knowledge of details of your business constitute one of the strongest arguments you can present to the banker when in need of more capital.

SMALL FARM ACCOUNTS.

Principles only can be discussed with intelligence as individual needs require different methods even for the same kind of business.

Enlist the assistance of the young folks. It will increase their interest. Interest generates ambition which spells success.

Weigh your milk. Count your eggs. Milk weights and egg yields kept on weekly or monthly sheets may eliminate unnecessary entries.

Avoid details. Let the accounting system grow with your business.

Necessary to use: a multi-column journal and card index, or indexed bill-board file.

Credit columns or pages are right-hand; debits left-hand.

The many columns of the journal serve the purpose of different books in keeping the business of departments separate, at the same time showing practically the profits or losses of any department at a glance. Debit column shows pay-outs, credit column, receipts.

Cards or bills in your file may be used exactly as a page in a ledger and accounts opened for departments the same as for customers. Columns most frequently used should be nearest the name columns, except that column to post from should come first of all.

Column footings are carried forward from page to page, and those of the credit side added together should always equal those of the debit side.

Accounts thus kept, by a double-entry system, provide for a check on errors and proof of cash.

Prove your cash daily by comparing the count of the money with the difference between footings of the cash columns.

It is preferable that your cash columns include check account at the bank, though you may have separate columns for it if desired.

All entries must first be made in the journal.

Every time you credit or charge anybody or anything you must charge or credit somebody or something to balance.

A person's capital or assets consists of their possessions, real and personal, cash on hand and in the bank, plus what is owed them, less what they owe.

Profit or loss for an exact period is the difference between the net assets at the start and close of the period.

Departments of which the credit side is larger than the debit side make the amount of profit shown by the difference.

Those where the debit side is the larger lose the difference.

Sales for a given period consist of the money received plus what is owed you (bills, not accounts), less what was owed you at the start.

Purchases: the cash paid out plus what you owe (bills, not accounts), less what you owed at the start.

Bills due or payable are memorandum transactions that have not before appeared in the journal, and are put in in a lump sum to balance up, and then reversed and taken out to start the next period.

Accounts due or payable have already been entered, and the balances will appear on your resource and liability sheet or trial balance when books are closed and balanced.

Cash, file, inventory, entry and profit and loss columns are necessary in the journal. Also date and narrow column for checking postings.

Others are optional, as poultry, pigs, sheep, produce, fruit, grain, tillage, expense, labor, household, stable, improvements and whatever others you need.

Bills receivable taken into consideration when you start your books should consist only of good, live customers you are sure will pay; slightly doubtful ones may be carried in a suspense account. Poor ones should not enter your books at all, though a record may be kept for reference.

Labor should be charged with your time, the time of the hands and their board.

Labor may be credited regularly and departments charged in proportion as time was spent. This provides a way of keeping the time charged up though the hands are paid irregularly.

Charge yourself regularly with a certain amount of money. Keep it in a separate pocket from your business money. This does not intend to cover household expenses, but saves charging up small amounts spent for personal use.

Household may be charged with fuel, cash paid out for groceries, and products exchanged for supplies or consumed.

Simplest way is to charge up time, seeds, fertilizer, manure, etc., used on house garden instead of produce as used.

Household should be credited with board for the hands and such labor as is performed in caring for poultry, milk or butter.

It is not at all superfluous to keep track of the meals consumed at your table. When the cost is computed at the end of the year your small bank account may be the result of too much entertaining.

Live as you like and entertain as much as you wish, but know just what you can afford.

Silage, hay and other roughage may be credited to tillage and charged to fodder account at market prices, less manurial value if to be fed.

Fodder account may be credited and stock charged as fed.

Stock should be credited with manure. Government pamphlet for values.

Manure account may be credited and charged where used.

Cement manure pits pay 50 per cent dividends. In other words, extra value in two years' manure pays for cost of construction.

Stable may be credited and other departments charged with work done.

Stock to be fattened may be handled as follows: credit dairy and charge live stock; credit sheep, charge mutton, etc., weighing if possible at time of transfer and charging feed and care to new department to ascertain cost of fattening.

Date and customers' name columns may appear on either right or left page of journal as debits or credits permit of space.

Improvements should be kept track of in order to give a clearer idea of the selling value as well as to show where the profits go.

Expenses should be charged regularly with such amounts for taxes, insurance and interest (on money invested, even if no mortgage) as will anticipate them in full when due.

If you can't show profits besides wages for yourself and interest on the money invested, poor crops and accidental loss of stock may wipe out your living expenses even.

Charge expense regularly with depreciation in such amounts as will cover average expectation of life of the stock, usefulness of equipment and repairs of the buildings. You have thus set aside before drawing profits a fund out of which stock and implements may be replaced and repairs made. It is like putting money in the bank.

Should you wish to draw profits from the business it is well to open a surplus account and a percentage of each period's profits may be charged to it. This provides you with a steady drawing account when bad crops and losses cut profits, even when losing.

Keep your personal drawings and expenses within earnings.

Whether or not you have a dollar in the bank, if instructions are followed as outlined, it is in the business and you haven't become your own worst customer. You don't allow the hands overdrafts.

File columns are to provide a close watch on total amount of money owed you at any time. Check over customers' accounts occasionally and see that total amount agrees with difference between footings of journal file columns.

Customers' charge entries may be made thus: credit amount of sale in proper department column of journal, write customer's name

in name column, enter date (once for each day), and charge file column with amount of sale.

Head a bill for the customer (if a new one), post amount and put "F" in narrow column on debit side of journal. This shows you where to find account.

When payment is made on account, credit file column, enter customer's name and charge cash column. Post amount to bill and put "F" in narrow column on credit side, showing that credit has been given.

If payment is for full amount, bill may be destroyed or removed to dead index and returned to the live one when account is opened again.

Do not remove bills from file, except when paid in full, without leaving a memorandum thereon, though they may not be lost, as difference between file column footings is equal to total of all bills on file.

IN ORDER TO VERIFY, CLOSE AND BALANCE BOOKS.

List up the bills you owe (not accounts), enter lump through entry column credit side of journal, and post to resource and liabilities card. On debit side of journal charge subdivisions of this amount to departments as they owe.

Post difference of file column footings to resource and liabilities card.

Take an inventory of things susceptible to market fluctuations in value.

Inventory values should be purchase prices and not selling prices, else you are anticipating your profits and affecting next period's showing.

Post through entry column debit side to resource and liabilities card, and on credit side through department columns as they belong.

Expenses should be picked over and apportioned as they belong.

Credit inventory column and charge department columns with original inventory at start. Transfer differences in department column footings to profit and loss columns.

Post inventory, profit and loss column footings and cash and bank balance to resource and liabilities card.

All column footings now having been taken into consideration, your resource and liabilities card is now a complete statement showing condition of your business, and footings should balance. If not, look for errors in transferring amounts. If divisible by 9, without remainder, they are most likely transpositions of figures, such as posting 27 for 72, 35 for 53, or dollars for cents of same number.

TO RE-OPEN A SET OF BOOKS.

Return balances of cash, bank, file, and profit and loss to their proper columns in the journal.

Reverse the bills payable and inventory (taken at the close of the period) entries.

These reverse entries are necessary in order to keep payments of this period's cash for department bills owed last month from affecting last or next period's showing.

They enable you to show exact business and profits without regard to whether you owe or are owed more or less than at the start.

Note that inventory column leaves your department columns showing only receipts and expenditures, or, practically, your profits or losses at any stage of the period without necessitating balancing your books except for verification.

Entry columns are provided that you may watch more closely the amount owed you by all customers (by the file columns) than if department entries were made through these columns.

Profit and loss columns are provided that you may not have to open accounts for each department.

Resource and liabilities card takes place of cards for all.

The principles being explained the application rests with you according to your requirements.

Summing up the principles you will probably note that many things enter into the cost of production that you may not have considered before. Does your selling price allow margin enough to cover them?

Price is easily obtained. It's quality that is hard to get.

Watch your quality and demand the price. The higher the quality the more trouble you will have in keeping up with your orders.

Time spent on accounts will pay you more money than any department of your farm. Only a few minutes a day are necessary. Let them go and you have to wait for your memory. A memory that you think is infallible may cause you most loss, both in money and trade.

A customer lost isn't replaced by a new one gained. The lost one has reasons which do not make good advertising copy.

You may keep accounts on the barn door and be successful, but keep them you must or your stable may eat up the profit made by the much-despised hens.

LARGE FARM ACCOUNTS.

Necessary to use: multi-column journal, small ledger and indexed bill-board file.

The accounts kept in the ledger on diversified farming are generally as follows:—

| | |
|--------------------|---------------------|
| Capital. | Produce. |
| Personal. | Pasturage. |
| Bill account. | Taxes. |
| Inventory account. | Insurance. |
| Profit and loss. | Dairy. |
| Stable. | Sheep. |
| Utensils. | Pigs. |
| Implements. | Poultry. |
| Household. | Improvements. |
| Fodder. | Depreciations. |
| Tillage. | Manure. |
| Grain. | Wood lot. |
| Labor. | Land and buildings. |

Instructions for small farm accounts apply except as noted below.

All entries must first be made in the journal.

Inventory, entry and profit and loss columns in journal are unnecessary and are covered by the ledger account columns.

File and file columns are now used only for short-time customers and customers with small accounts, larger and long-winded accounts being carried in the ledger.

Unnecessary to have columns on both sides for some departments, only on the side where you have frequent entries, entries on the other side being made through the ledger account columns to the department account in the ledger.

Entries made in the ledger account columns should be immediately posted to their account in the ledger. When posted put the ledger page in the narrow column for reference.

You may have milk, cream and butter columns in the journal and all go to the credit of dairy in the ledger.

You may have department accounts in the ledger without any journal columns for them if entries are infrequent.

Do not post from any columns except ledger accounts' columns to the ledger, and from none but file columns to the file, except at closing.

You will have no resource and liability account in the ledger, as it is subdivided into accounts for each department.

Closing and reopening entries are made through ledger accounts' columns to accounts in the ledger.

CLOSING AND BALANCING BOOKS.

Take inventory. Subdivide expenses.

Take preliminary trial balance (consisting of credit balances in one column and debit balances in the other). This must take into consideration the footings of your journal columns, except ledger accounts' columns, as well as the ledger accounts. Footings of these columns should be equal.

Take into account bills payable and receivable.

Post footings of journal columns, except ledger accounts' columns, to the accounts in the ledger.

Make entries (through the journal) of balances of department accounts to profit and loss account.

Final trial balance will now prove your books and show your true standing.

REOPENING ENTRIES.

Bring file and cash accounts back to the journal.

Reverse inventory and bills payable and receivable entries.

Explanatory Entries. — Say land and buildings are worth \$1,000; cash on hand and in bank, \$550.76; bills receivable, \$83.60; bills payable, \$38.70; utensils and implements, \$278.90. Inventory shows: cows, \$75; hens, \$200; pigs, \$35; sheep, \$80; and produce, \$40.

Make entries as shown on accompanying pages. Capital account now shows your assets.

It is now necessary to reverse the bills payable entry so that when you pay out money in this period, for bills contracted in the previous one, your departments will have a credit to offset the charge against them of cash paid out for the last period's business.

Bills receivable entry is reversed that departments may have a charge against them to offset money received this period that was due to last period's business.

Individual stock or pen records should be kept in order to keep the departments up to their fullest capacity for business.

Entries in the usual course of business may be made as follows: —

George Jones buys a can of cream, \$8; you bring back from him 3 cans of skim milk for the pigs, value, 25 cents. Stable is credited 50 cents for hauling the cream. You exchange a case of eggs, \$6, for 4 bags of grain worth \$6.25, and pay 25 cents cash to the miller. Charles Murphy pays \$10 he owed for a pig sold previously to starting your accounts.

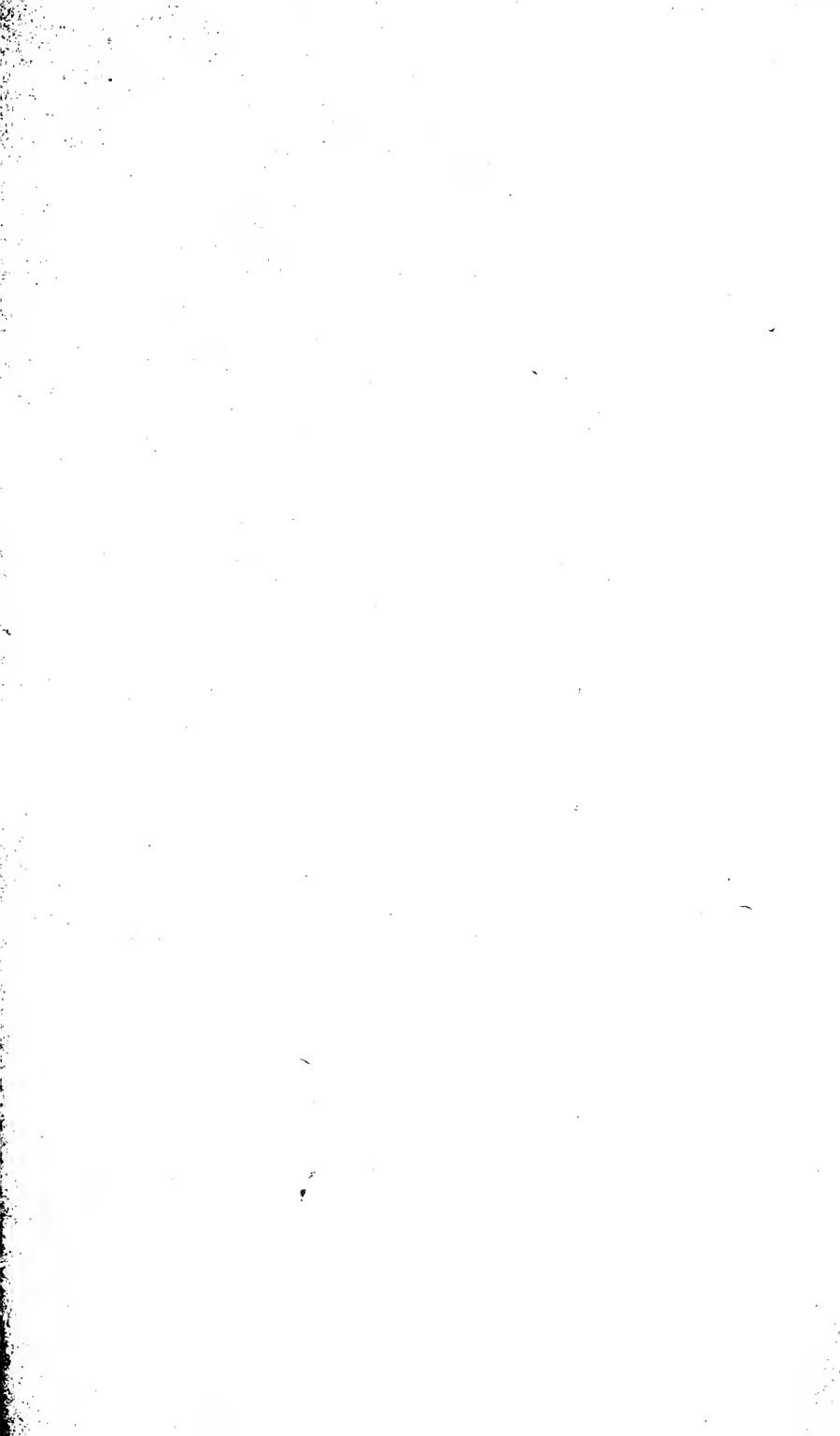
These explanations, by the changing of column or department headings, are of use for any and all kinds of business. They are not given with the intention of making you a bookkeeper. Stick to

your last (as the cobbler says), call in clerical assistance. It will pay big.

It is very necessary, however, that you understand the principles of accounts if not the methods. You can't expect employees to do your thinking. If they were capable of it they wouldn't be employees long.

Make sure that everything that enters into the cost of production is taken into consideration. This must be personal knowledge.

Be unhampered by tradition. If you can't make a department pay after trying different methods drop it in favor of another.





MASSACHUSETTS
CROP REPORT

FOR THE

MONTH OF SEPTEMBER, 1913.

FARM ICE HOUSES.

ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.

WILFRID WHEELER, *Secretary.*

ENTERED JUNE 3, 1904, AT BOSTON, MASS., AS SECOND-CLASS MATTER,
UNDER ACT OF CONGRESS OF JUNE 6, 1900.

BOSTON:
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1913.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

CROP REPORT FOR THE MONTH OF SEPTEMBER, 1913.

OFFICE OF THE STATE BOARD OF AGRICULTURE,
BOSTON, MASS., Oct. 1, 1913.

The report on crop yield, quality and prospect, and weather, for the month of September is presented herewith. The arrival of rain early in the month inspired the hope that perhaps the effects of the long drought would be offset to some extent. Such hope was immediately dispelled, however, by the occurrence of damaging frosts throughout the State.

In the special Bulletin on "Farm Ice Houses," Prof. B. S. Pickett, the author, explains briefly the use to which an ice supply may be put, and describes four types of ice-storage plants in sufficient detail for any one to build.

Our farmers produce beef, milk, butter, poultry, eggs, apples and small fruits, the marketable qualities of which are improved by proper icing, and in addition there is the financial advantage accruing from the ability to hold these products for the highest market prices.

WEATHER OF SEPTEMBER.

The weather of the month was near the seasonal average, the temperature and the rainfall departing but little from the September normals. There was a rainy-spell, with moderate rainfall, from the 18th to the 22d, inclusive, but during the rest of the month the precipitation was the result of local showers. Generally speaking, the rainfall for the month ranged from 10 to 30 per cent below the September average. The month as a whole was slightly cooler than the average, the monthly temperatures over the State ranging from one-half to one degree below the normal. The daily maxima and minima temperatures were quite even, there being no very warm days or unseasonably cold nights. The

day temperatures ranged well into the 80's on several dates and dropped to near 40° or somewhat below on a number of nights, but there were but few localities that experienced freezing temperatures. The winds were generally light to moderate, with the prevailing direction from the southwest. There was the average amount of sunshine. The month was well suited to harvesting, seeding, fall plowing and to general outdoor pursuits.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending September 1. — New England, Boston: There were copious showers, heavy in places, which were decidedly beneficial, relieving the drought. The temperature and sunshine were seasonable.

Week ending September 8. — New England, Boston: The week was favorable, seasonable conditions prevailing. Occasional showers occurred, giving moisture sufficient for current needs.

Week ending September 15. — New England, Boston: The rainfall, as a rule, was small, temperatures were prevailing low, and killing frost was general on the morning of the 15th in the interior.

Week ending September 22. — New England, Boston: Showers were frequent, and the week's rainfall was above normal. Temperatures were seasonable.

Week ending September 29. — New England, Boston: There were copious rains during the first part of the week. Afterward the weather was fair. Temperatures were seasonable and conditions were favorable.

PUBLICATIONS OF THE MONTH.

"Useful Birds and their Protection." — The fourth edition of "Useful Birds and their Protection." by Edward Howe Forbush, State Ornithologist, is now ready for distribution through this office. The book has been partially revised by the author, and there has been added an illustrated appendix explaining some of the latest European

methods of attracting and protecting birds — methods which should be widely adopted in this country. The volume, bound in red cloth, contains 451 pages, and is fully illustrated. The price of the new edition is \$1, and the purchaser must pay cost of transportation. This is 37 cents by mail. The book will be sent by express, charges collect, if desired. The work itself is a complete treatise on the common and useful species of Massachusetts. It contains chapters on the value of birds to man; the utility of birds in woodlands; birds as destroyers of hairy caterpillars and plant lice; the utility of birds in field and garden; and means of attracting and protecting useful birds.

The companion book entitled, "A History of Game Birds, Wild-fowl and Shore Birds of Massachusetts and Adjacent States," by the same author, published in December, 1912, is a book of over 600 pages, bound in green cloth and fully illustrated. The price is \$1, with 40 cents additional to cover transportation charges. Copies may be sent by express, charges collect, if so desired. Make checks for either book payable to Wilfrid Wheeler, Secretary, State Board of Agriculture, 136 State House, Boston, Mass.

Crop Report for August. — The monthly report for August contained a special article on "Diversified Farm Accounting," by Mr. L. A. Sloman.

FALL EXHIBITIONS.

New England Fruit Show.

The third biennial New England Fruit Show will be held at Horticultural Hall, Boston, Wednesday to Sunday, Nov. 12 to 16, 1913, inclusive. The success of previous shows, and the steady increase in quality of the fruit exhibited at both the New England and Massachusetts Fruit Shows, clearly demonstrate the results to be achieved whenever persistent well-directed efforts are applied to any profitable agricultural industry.

The premium list is unusually attractive, and there are several innovations. The establishment of an ideal size for each variety of apple will materially assist one in selecting

specimens for exhibits. These tables were decided upon after prolonged study, and many apples were measured to arrive at each result. Of course the apples from Maine will tend toward the smaller size, while Connecticut apples will run larger, but the quarter-inch leeway makes it fair to all, and at once throws out the over-large specimens which have been thought by new exhibitors in the past to be the prize winners.

On Thursday afternoon there will be the intercollegiate apple-packing contest, teams from the New England agricultural colleges competing. On Friday and Saturday afternoons lectures, with discussions, on live fruit topics will be given by experts.

With the co-operation of the fruit growers of New England this show is bound to be the biggest and best yet held, and we believe this support will be forthcoming, not alone for the prizes to be won, but for the glory of old New England.

Premium lists and entry blanks may be obtained from Wilfrid Wheeler, Secretary, New England Fruit Show, 136 State House, Boston, Mass. If you have fruit that you think will make a good showing, enter it, if only for the experience. A visit will repay any one interested at all in fruit.

The show opens Wednesday noon, November 12, and is open daily from 10 A.M. to 10 P.M.; Sunday, 2 to 10 P.M.

Public Winter Meeting.

The public winter meeting of the State Board of Agriculture for lectures and discussions will be held at the Municipal Building, Springfield, Mass., Tuesday, Wednesday and Thursday, Dec. 2, 3 and 4, 1913. The first day will be devoted to poultry and fruit, the second day to farm management and dairying, and the morning of the third day to alfalfa. The full program will be published in the October Crop Report.

Added interest is given the meeting this year because of the simultaneous holding of a dairy show, a corn show, the

State exhibit of products from children's gardens, and an exhibit of milk sediment samples taken, and awards made, in the "clean milk contest," conducted by the Board through the Dairy Bureau.

Corn Show. — A corn show will be held at the Municipal Building, Springfield, Dec. 2 and 3, 1913. A total of \$312 in prizes, in four classes, is offered by the Board. The show is open for exhibits of corn grown in Massachusetts in 1913. Entries close November 20. Premium lists and entry blanks may be secured from Wilfrid Wheeler, Secretary, State Board of Agriculture, 136 State House, Boston, Mass.

Dairy Show. — A competitive exhibit of milk, cream and butter will be held by the Massachusetts Dairymen's Association at the Municipal Building, Springfield, Dec. 2 and 3, 1913. This promises to be the biggest dairy show Massachusetts has ever seen. Premium lists and entry blanks may be had by addressing Prof. W. P. B. Lockwood, Secretary, Massachusetts Dairymen's Association, Amherst, Mass., or Mr. J. A. Gamble, chairman of the local committee, 137½ State Street, Springfield, Mass.

Children's State Exhibit. — The first State-wide exhibit of the products of children's gardens to be held in Massachusetts will be staged at the Municipal Building, Springfield, Dec. 2 and 3, 1913. The Legislature of 1913 granted the Board authority to expend annually a sum not exceeding \$1,000, to be used for the purpose of stimulating interest and activity in agriculture among the children. Under the guidance of Prof. O. A. Morton the work has developed rapidly, and a creditable exhibit is assured. Premium lists and entry cards may be had on application to Prof. O. A. Morton, State agent in charge of club work, Amherst, Mass., or Wilfrid Wheeler, Secretary, State Board of Agriculture, 136 State House, Boston, Mass.

Clean Milk and Protection from Flies Contest Exhibit. — At the Municipal Building, Springfield, on Dec. 2 and 3, 1913, the Dairy Bureau will announce the names of prize winners in the western section, and the sweepstakes prize winners, in the "clean milk contest," as well as the names

of contestants to whom shall have been awarded prizes for dairies best protected from flies. The winning sediment-test cottons and corresponding ribbons will be shown, while charts will furnish many valuable hints and data for the purpose of instructing visiting dairymen in methods of keeping dirt out of milk and preventing the breeding of flies.

SUMMARY OF CROP CONDITIONS.

In the circular to general crop correspondents, returnable September 25, the following questions were asked:—

1. How does the yield of Indian corn compare with normal as a grain crop? As a fodder and ensilage crop?

2. (*a*) As compared with normal, what is the yield of rowen? (Give per cent.) (*b*) What is the condition of fall feed? (Give per cent.)

3. (*a*) Has the usual amount of fall seeding of the following crops been done? (Give per cent of normal.) Clover, grass, rye, rye and vetch, vetch. (*b*) Are farmers in your locality showing more interest in alfalfa growing? How many acres in your town have been sown to alfalfa this year? What is the approximate number of acres in alfalfa in your town?

4. How does the onion crop compare with a normal? (Give per cent.)

5. (*a*) How do potatoes compare with normal in yield? (Give per cent.) In quality? (Give per cent.) (*b*) What per cent of those harvested is affected by rot?

5. What is the prospect for the following late market-garden crops? (Give per cent of normal.) Beets, cabbage, carrots, cauliflower, celery, parsnips, squash, turnips.

7. As compared with normal, what is the yield of the following fruits? (Give per cent.) Apples, fall varieties, pears, peaches, grapes, cranberries.

8. What crops have been most benefited by recent rains? (Name in order of greatest benefit derived.)

9. (*a*) On what dates did frost occur? (*b*) What crops were most affected by frost? How much damage was done by frost? (If possible, give per cent value of crops damaged of value of all crops.)

Special questions for correspondents in tobacco-growing districts: —

10. (a) How did tobacco yield, as compared with normal? (Give per cent.) (b) How do prices offered for tobacco compare with normal? (Give per cent.) .

Returns were received from 122 correspondents, and from them the following summary was compiled: —

INDIAN CORN.

The corn crop was much benefited by the rains occurring late in August and early in September and, in spite of the heavy frosts, the yield estimate of the entire crop shows an advance of .8 of a point over the condition estimate of August 25. Owing to the immaturity of most Indian corn when caught by frost the grain crop yield estimate for the State is 8 points further from normal than the fodder and ensilage crop yield estimate. The food value of the frosted fodder is much impaired, however, and the amount of silage put in is doubtless much below normal. The yield of corn as a grain crop is: Dukes, 100; ¹ Bristol, 87.7; Plymouth, 76; Norfolk, 75.8; Barnstable, 74.4; Middlesex, 73; Essex, 71.7; Worcester, 66.7; Berkshire, 66.3; Hampshire, 65; Hampden, 64.7; Franklin, 63.9; Nantucket, no report; the State, 71.1. The yield of corn as a fodder and ensilage crop is: Dukes, 100; ¹ Bristol, 92.7; Plymouth and Norfolk, 85; Franklin, 83.2; Hampshire, 80.3; Berkshire, 78.9; Hampden, 77.5; Worcester, 77.4; Barnstable, 75.8; Middlesex, 73.5; Essex, 41.5; Nantucket, no report; the State, 79.1. The average of the grain and fodder and ensilage crop yield estimates is 75, as compared with 88 per cent, the crop prospect estimate of Sept. 23, 1912.

ROWEN AND FALL FEED.

Grass, after a withering summer, responded more than any other crop to September rains, but the injury done the roots by the recent and preceding summers' droughts was too great to admit of any great progress of the rowen crop toward normal. The yield estimate exceeds the prospect estimate

¹ One report.

of August 25 by 8.8 points, thus reflecting the influence of the belated though copious showers. The rowen yield is: Norfolk, 65.7; Bristol, 62.3; Barnstable, 58.3; Plymouth, 52.5; Middlesex, 47.3; Hampshire, 30.6; Hampden, 29.5; Berkshire, 28.8; Essex, 27.5; Worcester, 25.6; Dukes, 25; ¹ Franklin, 18.8; Nantucket, no report; the State, 38.8.

Pastures have been helped by the rains even more than has rowen, and the favorable weather conditions existent subsequent to date of filing returns should make it unnecessary for farmers to draw very heavily as yet upon their scant store of hay and ensilage. Condition of fall feed is: Dukes, 110; ¹ Barnstable, 87.8; Norfolk, 80.7; Plymouth, 80; Bristol, 79.5; Hampden, 78; Worcester, 63.9; Middlesex, 63.5; Franklin, 59.5; Hampshire, 58.6; Essex, 53.8; Berkshire, 53.2; Nantucket, no report; the State, 69, as compared with 46 on August 25.

FALL SEEDING.

The amount of seeding done altogether aggregates 79.7 per cent of normal. The weather has been favorable to the germination of all fall-sown forage crops, and the condition is undoubtedly better than one year ago. Estimates for the several crops most grown follow: Vetch: Barnstable, 100; ¹ Middlesex, 75; ¹ other counties, no report; the State, 87.5. Grass: Essex, 93.8; Bristol, 93.6; Plymouth and Hampshire, 86.7; Barnstable, 84.3; Norfolk, 82; Worcester, 81.3; Middlesex and Franklin, 80; Hampden, 79.4; Berkshire, 62.9; Dukes and Nantucket, no report; the State, 82.8. Rye: Middlesex, 96.3; Hampshire, 95; Barnstable, 93.3; Norfolk, 92.5; Plymouth, 91.3; Bristol, 88.6; Franklin, 88.3; Essex, 87.5; ² Worcester, 77.5; Berkshire, 70.6; Hampden, 59; Dukes, some; ¹ Nantucket, no report; the State, 82.4. Rye and vetch: Barnstable, 100; ¹ Middlesex, 75; ¹ Norfolk, 60; ¹ other counties, no report; the State, 78.3. Clover: Bristol, 80; Hampshire, 79; Berkshire, 78.8; Middlesex, 75; Hampden, 68.8; Plymouth, 66.7; Franklin, 65.8; Worcester, 63.6; Barnstable, 61.3; Norfolk, 50; ² Essex, Dukes and Nantucket, no report; the State, 70.4.

¹ One report.

² Two reports.

Several correspondents state that more rye will be sown later. Wheat is reported from Berkshire by one correspondent.

ALFALFA.³

To the question as to whether farmers are showing more interest in alfalfa growing, 40 correspondents answered in the affirmative, and 65 in the negative. The greatest comparative increase in interest appears to have been taken by the farmers of Hampden, Middlesex, Essex, Norfolk and Plymouth.⁴ An estimated acreage of 71.3 has been sown to alfalfa this year in the 98 towns heard from, and there is a total of 194.8 acres in this crop. As there are 354 towns and cities in the State it may be assumed that there are not far from 300 acres of alfalfa growing on Massachusetts soil.

ONIONS.

The onion crop is far below that of last year, which was normal, or slightly above. Thrips have greatly injured the crop and drought has reduced the size of the onions. Frost damage is reported from Middlesex. The quality is such as to insure a well-cured product. Prices are normal or better. A report from the center of the onion belt (Franklin and Hampshire counties) places the production per acre at 300 to 400 bushels. The yield estimates are: Bristol, 88.3; Berkshire, 76.3; Hampden, 74; Norfolk, 71.3; Hampshire, 70.8; Middlesex, 69; Plymouth, 66.7; Franklin, 65;² Essex, 61.3; Barnstable, 60; Worcester, 50;¹ Dukes and Nantucket, no report; the State, 72.4.

¹ One report.

² Two reports.

³ Bulletin No. 3, on "Grasses and Forage Crops," containing an article on "Alfalfa as a Crop in Massachusetts," is in press. When issued, copies will be sent to all applicants.

⁴ One hundred and fifty persons, representing a wide range of interest, organized at Medfield on July 3, 1913, a New England Alfalfa Growers' Association. This association will hold its next meeting at Springfield on Dec. 4, 1913, when under the auspices of this Board, Mr. Joseph Wing, editor of the "Breeder's Gazette," will speak on alfalfa growing.

A Worcester County Alfalfa Club has been organized, and the formation of others is contemplated.

POTATOES.

The crop of late potatoes is slightly larger than anticipated on August 25, but much smaller than that of 1912. The quality is excellent, with remarkable freedom from rot. The eighteen estimates of per cent of potatoes harvested affected by rot range from less than 1 to 10, and 90 correspondents report no rot whatsoever. Following are the comparative yield estimates, in order of size, succeeded in each case by the corresponding quality estimate: Dukes, 90,¹ 100; ¹ Norfolk, 82.9, 89.2; Bristol, 82, 97; Hampshire, 78.1, 95; Essex, 76.3, 96.3; Plymouth, 74.3, 95.5; Middlesex, 69.8, 97.9; Worcester, 69.5, 94; Hampden, 67.5, 96.3; Berkshire, 66.7, 96.5; Barnstable, 65.6, 94.3; Franklin, 62, 98; Nantucket, no report; the State, 71.5, 95.2.

LATE MARKET-GARDEN CROPS.

The composite prospect for the principal late market-garden crops is 75.9 per cent of normal. Beets will be the best crop, with parsnips and carrots closely following. Frost, probably more than any other factor, is responsible for the position of squash as the smallest crop. The table below gives the crop prospect estimates in detail for the several late garden crops, by counties as well as for the State: —

¹ One report.

| | Berkshire. | Franklin. | Hampshire. | Hampden. | Worcester. | Middlesex. | Essex. | Norfolk. | Bristol. | Plymouth. | Barnstable. | Dukes. | Nantucket. ³ | State. |
|------------------------|------------|-------------------|-------------------|-------------------|------------|------------|-------------------|-------------------|----------|-------------------|--------------------|------------------|-------------------------|--------|
| Beets, | 85.0 | 71.7 | 90.0 | 84.4 | 81.1 | 72.0 | 68.3 | 84.3 | 87.0 | 88.8 | 91.0 | 100 ¹ | - | 83.4 |
| Cabbage, | 80.0 | 70.0 | 70.0 | 69.1 | 75.3 | 72.5 | 58.8 | 73.6 | 80.5 | 80.0 | 84.2 | 100 ¹ | - | 75.6 |
| Carrots, | 90.6 | 65.0 | 63.3 | 82.5 | 80.0 | 79.2 | 68.3 | 82.9 | 83.5 | 88.0 | 86.7 | 100 ¹ | - | 81.8 |
| Cauliflower, | 65.0 | 17.5 ² | 50.0 ¹ | 72.5 ² | 80.0 | 77.5 | 77.5 ¹ | 71.3 | 71.7 | 87.5 ² | 68.3 | - ³ | - | 69.3 |
| Celery, | 75.8 | 60.0 | 85.0 ² | 82.0 | 88.3 | 89.0 | 83.3 | 72.5 ² | 76.3 | 90.0 ¹ | 100.0 ¹ | - ³ | - | 80.8 |
| Parsnips, | 95.8 | 63.8 | 55.0 | 82.5 | 81.1 | 85.0 | 87.5 ² | 83.8 | 88.0 | 81.7 | 95.0 ² | - ³ | - | 82.2 |
| Squash, | 67.5 | 31.7 | 62.0 | 55.0 | 53.2 | 50.0 | 70.0 | 63.3 | 69.4 | 65.0 | 91.0 | 75 ¹ | - | 61.3 |
| Turnips, | 95.0 | 78.8 | 78.8 | 43.1 | 80.6 | 78.0 | 66.7 | 84.2 | 82.8 | 83.1 | 58.7 | 100 ¹ | - | 74.2 |

¹ One report.

² Two reports.

³ No report.

FRUITS.

By far the largest fruit crop harvested during the month was pears, with Norfolk, Hampshire and Bristol in the lead. Winter pears are not yet picked. Fall apples are only a little above a one-half crop. The peach crop is above normal in Norfolk and Plymouth counties, owing chiefly to lack of frosts. The crops of the greatest peach-producing counties, namely, Middlesex, Worcester and Hampden, are much below normal. The fruit yield estimates are given in the subjoined table: —

| | Berkshire. | Franklin. | Hampshire. | Hampden. | Worcester. | Middlesex. | Essex. | Norfolk. | Bristol. | Plymouth. | Barnstable. | Dukes. | Nantucket. ³ | State. |
|------------------------|------------|-----------|------------|----------|------------|------------|--------|----------|----------|-----------|-------------|-----------------|-------------------------|--------|
| Fall Apples, | 34.1 | 49.5 | 61.3 | 51.7 | 38.8 | 65.0 | 53.8 | 57.2 | 75.5 | 58.9 | 77.1 | 50 ¹ | - | 53.5 |
| Pears, | 74.5 | 89.4 | 92.5 | 97.0 | 82.7 | 94.0 | 92.5 | 97.9 | 95.0 | 92.5 | 86.3 | 75 ¹ | - | 88.9 |
| Peaches, | 46.7 | 60.0 | 65.6 | 68.8 | 67.3 | 80.6 | 82.5 | 118.0 | 92.2 | 101.4 | 83.6 | 50 ¹ | - | 78.7 |
| Grapes, | 62.1 | 62.5 | 79.0 | 51.8 | 73.7 | 80.0 | 80.0 | 84.3 | 83.0 | 76.4 | 85.8 | 50 ¹ | - | 73.3 |
| Cranberries, | - | - | - | - | - | - | - | - | 81.4 | 95.0 | 69.6 | 75 ¹ | - | 81.7 |

¹ One report.³ No report.

BENEFIT FROM RAIN.

The returns relative to the crops most benefited by rains occurring subsequent to date of the last report have been tabulated. Sixty-one, or just one-half the correspondents, report benefit to grass; 30, or one-fourth, benefit to cabbage; 26, turnips; 24, corn; 23, fall feed; 16, potatoes; 15, all late garden crops; 11, beets; 10, celery; 9 each, fall seeding, cauliflower and apples; 8, carrots; and nearly every late crop is named a lesser number of times. Scattering reports from Berkshire, Franklin, Hampden, Middlesex, Plymouth and Barnstable indicate that no rain fell until either frost had damaged crops or growth had ceased. Rain without frost would have increased the value of late crops tremendously, since few had made normal growth during the long drought.

FROST.

Frosts were general between the 9th and 16th, inclusive, throughout the five western counties. The frosts of the early part of the week were comparatively light, injuring crops only on low land, but the damage done on the 14th, 15th and 16th was severe and widespread, being reported from every county. In some places the temperature fell to 28° F., and shallow pools were skimmed with ice. Locally, frosts occurred from the 1st to the 18th, with one in Hampshire on the 23d.

The loss by frost, in dollars and cents, is placed at 30 per cent of the value of all crops. For the State the greatest damage, in order, was done to corn, tomatoes, squash, beans, potatoes, cranberries, millet and melons.

The damage to specific crops was great in certain localities, of no consequence in others, and, in fact, so variable as to make futile an attempt to estimate from the scattered returns at hand the real injury done.

TOBACCO.

Tobacco is 79 per cent of a normal crop, and prices offered are .7 per cent above normal. Yield estimates are: Hampden, 87.5; Hampshire, 81.5; Franklin, 71.7. As compared with normal, prices are estimated as follows: Hampshire, 102.5; Franklin and Hampden, 100. Frost caught a number of fields, but most of the crop was cured in good condition. It seems to run a little light in weight.

NOTES OF CORRESPONDENTS.

[Returned to us September 25.]

BERKSHIRE COUNTY.

Williamstown (G. A. HICKOX). — Condition of Indian corn: as a grain crop, 50; as a fodder and ensilage crop, 60. Rowen yield, 30. Fall feed condition, 30. Per cent of fall seeding: clover, 100; grass, 50; rye, 70. There are 20 acres of alfalfa in town. Potato crop is 60 per cent of normal in yield, and 100 per cent in quality. Late market-garden crop prospect: beets, 60; cabbage, 50; carrots, 60; parsnips, 50; squash, 25; turnips, 60. Fruit yield: apples, fall varieties, 50; pears, 60; grapes, 70. Grass has been most benefited by recent rains. Frosts occurred from the 9th to the 15th; 40 per cent damage was done. Three-fourths of the corn in some fields was ripe, while other fields were caught in the milk, and still other fields had no ears whatever. If the weather continues warm, with plenty of rain, fall seeding will be in normal condition.

North Adams (C. M. OTTMAN). — Yield of Indian corn: as a grain crop, 75; as a fodder and ensilage crop, 90. Rowen yielded a 60 per cent crop. Condition of fall feed, 50. Per cent of fall seeding: clover, 85; grass, 90; rye, 90. There are 3 acres of alfalfa in town. Onion crop is 80 per cent of normal. Potato yield, 75; quality, 90. Late market-garden crop prospect: beets, 75; cabbage and carrots, 85; cauliflower, 50; celery, 65; parsnips, 85; squash, 75; turnips, 90. Fruit yield: fall apples, 10; pears, 90; peaches, 10; grapes, 75. Cabbage, beets and carrots have been most benefited by recent rains. Frosts occurred from the 12th to the 14th, and damaged: tomatoes, 75; cucumbers, 90; squash, 50.

Lanesborough (W. E. FOSTER). — Corn yield: as a grain crop, 70; as a fodder and ensilage crop, 80. Yield of rowen, 40. Condition of fall feed, 50. Per cent of fall seeding: clover, 50; grass, 50; rye, 50. Interest in alfalfa growing is increasing, but none is grown in town. Very few onions grown. Potato yield, 60. Late market-garden crop prospect: beets, fair; cabbage, good; carrots, fair; cauliflower, good; celery, fair; parsnips, good; squash, poor; turnips, good. Fruit yield: pears 75; grapes, 40. Potatoes, corn and cabbage have derived most benefit from recent rains. Frosts occurred on the 10th, 14th, 15th and 16th, and damaged corn most: total damage, 40.

Washington (E. H. EAMES). — Condition of Indian corn: as a grain crop, 80; as a fodder and ensilage crop, 80. No rowen. Fall feed condition, 90. No fall seeding has been done. Potatoes yielded an 85 per cent crop; quality, 100. Late market-garden crop prospect: beets, 100; cabbage, 100; carrots, 100; cauliflower, squash and turnips, 100. Fall apple condition, 75. Fall feeding, both in meadows and pastures, has been most benefited by recent rains. Frosts occurred on the 14th and 15th, and damaged corn to the extent of \$500 to \$600.

Stockbridge (F. A. PALMER). — Indian corn condition: as a grain crop, 80; as a fodder and ensilage crop, 90. Rowen yield, 40. Condition of fall feed, 70. Per cent of fall seeding: clover, 80; grass, 90; rye, 60. Potato yield, 70; quality, 110. Late market-garden crop prospect: beets, cabbage and carrots, 90; squash, 100. Fruit prospect: fall apples, 20; pears, 80; peaches, 90. Pastures, meadows and millet have been most benefited by recent rains. Frost occurred on the 13th and 14th, and damaged corn, beans and millet; estimated damage, 10. With the fine rains, meadows and pastures are taking on new life and look well, as does fall seeding.

Becket (WILLIAM H. SNOW). — Condition of Indian corn: as a grain crop, 70; as a fodder crop, 80. Yield of rowen, 50. Condition of fall feed, 80. Per cent of fall seeding: grass, 60; rye, 75. There are 2 acres of alfalfa in town. Very few onions raised. Potato yield, 80; quality, 95. Late market-garden crop prospect: beets, 90; cabbage, 75; carrots, 100; cauliflower, 100; celery, 90; parsnips, 100; squash, 50; turnips, 90. Fruit yield: fall apples, 50; pears, 75. The recent rains have benefited corn, buckwheat, grass and potatoes. Frost occurred in June, July, August and September, and injured corn, tomatoes, beans, cucumbers, pumpkins and squashes severely. The damage done by frost is hard to estimate, as it varied on high and low lands.

Monterey (JARED B. THOMSON). — Indian corn yield: as a grain crop, 60 to 70; as a fodder, 75 to 80. No rowen. Fall feed condition, 90. Per cent of fall seeding of rye, 100. More interest is being shown in alfalfa growing, 1½ to 3 acres being sown this year, making a total of about 4 acres in town. The yield of potatoes is 50; quality, 100. Late market-garden crop prospect: cabbage, 90; carrots, 100; cauliflower, 50; celery, 50; squash, 75 to 100. Fruit yield: fall apples, 60; pears, 80; grapes, 70. Frost occurred on the 10th (light), 14th and 15th. Per cent of damage done by frost: ensilage corn, 10; grain, 25; buckwheat, 75; gardens also affected. It has not rained enough yet to start the springs.

Alford (LESTER T. OSBORNE). — Condition of Indian corn: as a grain crop, 75; as a fodder and ensilage crop, 80. Yield of rowen, 10. Fall feed condition, 25; many cows have been fed at the barn for more than a month. Amount of fall seeding: clover, very little;

rye is yet to be sown. Alfalfa growing has met with little success. Onion crop yield, 50. Potato yield, 50: tubers, small, and the vines frost-bitten. Fruit prospect: fall apples, 25; winter apples, 25; pears, 100. Apples, pastures and last spring's seeding have derived the most benefit from recent rains. Hard frosts occurred on the 10th, 11th and 15th, the ground being frozen. All crops were damaged.

New Marlborough (E. W. RHOADES).—Indian corn yield: as a grain crop, 50; as a fodder and ensilage crop, 90. Rowen yield, 25. Fall feed condition, 25. Per cent of fall seeding: grass, 40; rye, 40. Farmers are not taking much interest in alfalfa growing. Onion crop yield, 75. Yield of potatoes, 50; quality, 80. Late market-garden crop prospect: beets, carrots and parsnips, 100; cabbage and cauliflower, 30; celery, 75; turnips, 45. Fruit yield: fall apples, 20; pears, 100; peaches, 40; grapes, 50. Frosts occurred on the 15th and 16th and damaged corn 10 per cent.

FRANKLIN COUNTY.

Rowe (HENRY D. WRIGHT).—Indian corn as a grain crop is a failure; as a fodder and ensilage crop, 50. No rowen. Fall feed condition, 50. Yield of potatoes, 75; quality, 100. Fall apple yield, 15. Corn was damaged by frost on the 10th and 15th.

Colrain (W. H. DAVENPORT).—Indian corn yield: as a grain crop, 30; as a fodder and ensilage crop, 65. Rowen yield, 10. Fall feed condition, 25. Per cent of fall seeding: clover, 100; grass, 100. No onion crop of any account raised. Potato yield, 50; quality, 100. Late market-garden crop prospect: beets, 75; cabbage, parsnips and turnips, 40; cauliflower and squash, 10; celery, 45. Fruit yield: fall apples and pears, 100; peaches and grapes, 25. The rains came too late to help crops other than beets and fall seeding. Frost occurred about the 15th, ruining melons and squashes. Crops were so belated by dry weather that frosts had little to injure. Apples this year are the one success of Colrain farms.

Leyden (FRANK R. FOSTER).—Yield of Indian corn: as a grain crop, 60; as a fodder and ensilage crop, 90. Yield of rowen, 20. Condition of fall feed, 50. The usual amount of fall seeding has been done in clover, grass and rye. Potato yield, 75; quality, 100. Late market-garden crop prospect: beets, carrots and parsnips, 50; cabbage, 100; turnips, 100. Fruit yield: fall apples and grapes, 75; pears, 100; peaches, 90. No rain since May, to do any good. There were frosts on the 9th, 10th, 13th, 14th and 15th, which damaged corn 50 per cent, and affected potatoes and all gardens.

Gill (F. F. STOUGHTON).—Indian corn yield as a fodder and ensilage crop, 75. Condition of fall feed, 100. Four acres have been sown to alfalfa this year. It is too early to ascertain the qual-

ity of potatoes. Spring frosts ruined fruit. Corn and grass have been much benefited by the recent rains. Frost damaged corn to a great extent.

Buckland (EUGENE D. GRISWOLD).—Yield of Indian corn as a grain crop, 70; as a fodder and ensilage crop, 85. Rowen yield, 5 to 10. Fall feed condition, 60. Per cent of fall seeding: clover, 75; grass, 75. Very little increased interest is being shown in alfalfa growing; there are two or three acres here. Condition of potatoes, 45; quality, 90. Fruit yield: fall apples, 60; pears, 90. The recent rains benefited pastures, but came too late to improve the crops. Corn was very badly damaged in some places by frost on the 10th.

Shelburne (C. S. BARDWELL).—Indian corn yielded 70 per cent of a normal crop. Condition of fall feed, 75. No fall seeding done as yet. Potato yield, 75; quality, 100. Fall apple yield, 25. Grass and potatoes were most benefited by the recent rains. Corn was damaged 35 per cent by frosts on the 11th, 15th and 16th.

Conway (S. T. HOPKINS).—Indian corn yield: as a grain crop, 60; as a fodder crop, 50. Fall feed condition, 50, grass looking better. Per cent of fall seeding: clover, 25; grass, 50. Farmers are talking about alfalfa, but none is being grown here. Potato yield, 50; quality, 100. Fruit yield: fall apples, 25; pears, 75; grapes, 85. The rain came too late for the hoed crops, but the grass is being benefited. Frosts occurred on the 11th and 16th; in some places it is claimed that there were frosts every month, damaging corn most seriously. It is impossible to estimate the damage done by frost, as it skipped some fields and stripped others. Tobacco yield, 65; prices, normal.

New Salem (DANIEL BALLARD).—Condition of Indian corn: as a grain crop, 65; as a fodder and ensilage crop, 75. Rowen yield, 10. Condition of fall feed, 40. Per cent of fall seeding: clover, 50; grass, 50. Very little interest is being shown in alfalfa; there are one or two acres here. Onions are raised only for family use. Potato yield, 50; quality, 100. Late market-garden crops are raised only for family use. Fruit yield: fall apples, 30; pears, 100; peaches, 50; grapes, 80. Fall feed and pastures have been much improved by the recent rains. Frosts occurred on the 9th and 10th, damaging corn, tomatoes, melons and beans; per cent damage, 25 to 30.

HAMPSHIRE COUNTY.

Plainfield (C. A. WILLIAMS).—Yield of Indian corn: as a grain crop, 70; as a fodder and ensilage crop, 85. Rowen yielded a 20 per cent crop. Condition of fall feed, 90. Per cent of fall seeding: clover, 20; grass, 50. Potato yield, 90; quality, 100; 5 per cent is affected by rot. Late market-garden crop prospect: beets, 90; cabbage, 50; carrots, 25; cauliflowers, 50; parsnips, 95; squash, 50.

Fruit yield: fall apples, 70; pears, 80; peaches, 25; grapes, 70; cranberries, 50. Recent rains helped to start the grass roots, as well as cabbage and cauliflower. Frost damaged corn, potatoes, squash, beans and millet, on the 14th and 15th, certainly 50 per cent.

Cumington (ANDREW A. SHAW).—Indian corn yielded a 50 per cent grain crop, and a 100 per cent fodder and ensilage crop. Rowen yield, 50. Condition of fall feed, 20. Per cent of fall seeding: clover, 75; grass, 100. Practically no onions grown. Potato yield, 75; quality, 100. Late market-garden crop prospect: beets, 100; cabbage, 100; squash, 50; turnips, 100. Fruit yield: fall apples, 50; pears, 75. Late potatoes is the only crop benefited by recent rains. A hard frost on the 12th killed ensilage corn and potatoes. We have had a bad year for crops, the frost early in the month completing the damage done by the drought.

Westhampton (LEVI BURT).—As a grain crop, Indian corn yielded a 50 per cent crop; as a fodder and ensilage crop, 75. Rowen yield, 25. Condition of fall feed, 50. Per cent of fall seeding: clover, 100; grass, 100; rye, 100. Farmers are showing more interest in alfalfa. Potato crop condition, 60; quality, 100. Fruit yield: fall apples, 50; pears, 90; peaches, 25. Rowen was most benefited by recent rains. Corn and all other garden crops were damaged by the frosts of the 15th and 16th; all vegetation except grass was killed. Alfalfa grown here is in little patches on trial plots.

Hadley (E. J. BURKE).—Indian corn yield: as a grain crop, 75; as a fodder and ensilage crop, 80. Yield of rowen, 50. Per cent of fall seeding: clover, 100; grass, 100. Next year several people will grow alfalfa, co-operating with the Massachusetts Agricultural College and the United States Department of Agriculture; none was sown this year, the land not being in proper condition. Onion crop yield, 25; quality and prices good. Yield of potatoes, 95; quality, 85. Late market-garden crop prospect: beets and celery, 90; cabbage and carrots, 75; parsnips, 60; squash, 80; turnips, 50. Fruit yield: fall apples, 85; pears and grapes, 90; peaches, 101. Corn, grass and garden truck were much benefited by the recent rains. Tomatoes, corn, squash and melons were damaged by frost on the 10th, 11th and 23d. Yield of tobacco, 78; price, 105; quality good, but will run light. Practically all tobacco and onions have been sold.

Belchertown (ALMON L. PRATT).—Indian corn yield: as a grain crop, 80; as a fodder and ensilage crop, 75. Rowen yielded a 5 per cent crop. Condition of fall feed, 40. Per cent of fall seeding: grass, 80; rye, 90. Potato yield, 80; quality, 100. Late market-garden crop prospect: beets, turnips and carrots, 90; cabbage, 75; parsnips and squash, 80. Fruit yield: fall apples, 80; pears, 100; peaches, 75; grapes, 100. The recent rains benefited potatoes, corn and fall feed. Garden crops suffered most from frost.

Enfield (D. O. CHICKERING).—Rowen yield, 50. Condition of fall feed, 75. Per cent of fall seeding of grass, 100. Potato yield, 75; quality, 90. Late market-garden crop prospect: beets, 80; cabbage and squash, 50; turnips, 75. Fruit yield: fall apples, 25; pears, 100; grapes, 50; peaches, 75. Grass and potatoes were most benefited by recent rains. Corn was most affected by frosts, which occurred on the 8th, 9th, 15th and 16th.

Prescott (W. F. WENDEMUTH).—Yield of Indian corn: as a grain crop, 80; as a fodder and ensilage crop, 60; most fodder was frosted. Rowen yield, 15; few fields yielding rowen because of the dry weather. Fall feed condition, 75, having been improved by the rain. Per cent of fall seeding: clover, sown only in the spring; grass, 100. Market-garden crops are not grown for market here. Fruit yield: fall apples, 70; pears, 105; peaches, 90 to 95; grapes, 85. Rowen and fall feed were improved by recent rains. Frost occurred on the 10th, 15th and 16th, and injured corn, late potatoes, garden crops, grapes and several fields of millet; damage by frost was great, but I do not feel competent, with present information, to place it.

HAMPDEN COUNTY.

Tolland (EUGENE M. MOORE).—Indian corn yield: as a grain crop, 75. Rowen yield, 25. Yield of potatoes, 60; quality, 100. Late market-garden crop prospect: beets and carrots, 60; cabbage, 80; squash, 50; turnips, 75. Fruit yield: fall apples, 40; pears and grapes, 100; cranberries, 40. Rowen has been most benefited by the recent rains. Frosts damaged corn 25 per cent.

Southwick (L. A. FOWLER).—Indian corn yielded a 50 per cent grain crop and a 75 per cent fodder and ensilage crop. Practically no rowen. Fall feed has much improved by recent rains, and is now nearly normal. Per cent of fall seeding, 100. Potato yield, probably 50; in some localities the yield is fair, in others small. It is impossible to state the amount of rot, as many acres have not yet been dug. Recent rains have helped the late tobacco, corn fodder and ensilage. Light frosts occurred on the 10th; hard frosts on the 14th and 15th, damaging all vegetation, especially tobacco and corn. Tobacco yield, 85; prices, normal.

West Springfield (T. A. ROGERS).—Yield of Indian corn: as a grain crop, 50; as a fodder and ensilage crop, 90. Rowen yield, 20. Condition of fall feed, 75. Per cent of fall seeding: grass, 75; but little rye sown. Very few onions were raised, but those grown did well. Potato yield, 75; quality, 100. Late market-garden crop prospect: beets, parsnips and squash, 75; cabbage and celery, 100; carrots, 80; cauliflower and turnips, 50. Fruit yield: fall apples, 75; pears, 100; peaches, 110; grapes, 25. Rains helped fall seeding and

fall feed. Frosts came on the 15th and 16th, damaging ensilage corn, late sweet corn and tomatoes. Tobacco yield, 90; not much change in price during last three years.

Chicopee (ADDISON H. SMITH).—Indian corn yield: as a grain crop, 75; as a fodder and ensilage crop, 90. Rowen yield, 40. Condition of fall feed, 80. Per cent of fall seeding: grass, 90; rye, 80. Farmers are showing more interest in alfalfa growing. There are about 30 acres of alfalfa grown in this locality. Onion crop yield, 70; injured by drought. Yield of potatoes, 70; quality, 85. Late market-garden crop prospect: beets, 85; cabbage, 50; carrots, 90; cauliflower, 95; parsnips, 90; celery, 95; squash, 60; turnips, 40. Fruit yield: fall apples, 40; pears, 100; peaches, 125; grapes, 90. Celery, root crops, cabbage and grass were much improved by the recent rain. Frost occurred on the 9th and 15th, injuring tomatoes, sweet corn, beans, squash, peppers and lettuce. The early frost shortened the growing season by two weeks, and damaged 15 per cent of the crops.

Ludlow (CHARLES B. BENNETT).—Yield of Indian corn: as a grain crop, 80; as a fodder and ensilage crop, 60. Yield of rowen, 25. Condition of fall feed, 50. Per cent of fall seeding: grass, 50; rye, 25. Potato yield, 80; quality, 90. Prospect for late market-garden crops: beets, 100; cabbage, 50; carrots, 110; squash, 50. Fruit yield: fall apples, 10; pears, 100; peaches and grapes, 50. Recent rains have helped late corn and potatoes and have freshened pastures and meadows. Frosts occurred on the 8th, 9th and 13th, injuring corn, squash, tomatoes and all tender plants, 50. Few silos will be full, and the silage is very poor owing to the three frosts. Very few potatoes are dug. Feed will be short this winter, and hay will be worth \$22 a ton.

East Longmeadow (JOHN L. DAVIS).—Indian corn yield: as a grain crop, 40; as a fodder and ensilage crop, 60. Rowen yield, 25. Fall feed condition, 50. Per cent of fall seeding: clover, 50; grass, 70; rye, 50. The interest in alfalfa growing is increasing, 2 acres being sown this year; about 10 acres had been sown, but the seed died out. Onion crop yield, 60. Potatoes show a 60 per cent crop; quality, 100; less than 1 per cent show rot. Late market-garden crop prospect: beets and cabbage, 75; carrots and parsnips, 60; celery, 50; turnips, 40; squash, 25. Fruit yield: fall apples, 50; pears, 100; peaches, 70; grapes, 25. Grass, cabbage and turnips have been benefited by recent rains. Frosts occurred on the 12th and 13th, injuring corn, 30; late potatoes, 50; gardens, 25.

Monson (F. D. ROGERS).—Yield of Indian corn: as a grain crop, 50; as a fodder and ensilage crop, 75. Yield of rowen, 50. Fall feed condition, 75. Per cent of fall seeding, 100. Farmers are showing an interest in alfalfa growing, a few trial plots being sown. Very few potatoes dug yet, but quality is normal. Fruit yield:

pears, 100; peaches, 15; grapes, 10. Grass, potatoes, apples, pears, peaches and all late garden crops were much benefited by the rains. Frost occurred on the 10th, 11th, 15th and 16th, damaging silage corn most; potatoes, tomatoes and beans were also injured. Much field corn was not ripe enough to cut.

WORCESTER COUNTY.

Royalston (C. A. STIMSON). — Indian corn yield: as a grain crop, 70; as a fodder and ensilage crop, 85. Yield of rowen, 25. Fall feed condition, 50. About one-half acre of alfalfa has been planted in this locality. Potato yield, 50; quality, 90. Late market-garden crop prospect: beets and turnips, 90; cabbage and squash, 70; carrots, 75; celery, 85; parsnips, 80. Fruit yield: fall apples, 40; pears and grapes, 90; peaches, 70. The rains came too late to benefit crops other than grass. Frosts occurred on the 9th and 10th, and killed everything.

Fitchburg (Dr. JABEZ FISHER). — Condition of fall feed, 75. Two acres of vetch planted this fall. Late market-garden crop prospect: parsnips, 100; squash, 20; turnips, 50. Fruit yield: fall apples, 50; pears, 100; grapes, 90. The rains came too late to be of much benefit. Frosts occurred in low lands on the 15th and 16th.

Gardner (W. E. KNIGHT). — Yield of Indian corn: as a fodder and ensilage crop, 75. Yield of rowen, 10. Condition of fall feed, 50. Per cent of fall seeding: grass, normal; rye, normal. One-half acre of alfalfa has been sown this year, making a total of 1 acre planted here. Potato yield, 75; quality, 100. Late market-garden crop prospect: cabbage, 50; carrots, 75. Fruit yield: fall apples, 25; pears, 50. Grass has been much benefited by recent rains. Frost did little damage.

Templeton (LUCIEN GOVE). — Yield of Indian corn: as a grain crop, 70; as a fodder and ensilage crop, 80. Yield of rowen, 25. Condition of fall feed, 85. Per cent of fall seeding: clover, 10; grass, 25; rye, 75. Potato yield, 65; quality, 97. Late market-garden crop prospect: beets, 80; cabbage and turnips, 90; carrots, 85; squash, 60; parsnips, 80. Fruit yield: fall apples, 40; pears, 100; grapes, 85. Grass, garden vegetables, potatoes to some extent, and fall seeding have been most benefited by the rains. Frost occurred on the 15th, damaging corn, 20; tomatoes, 25; squash, 50; potatoes, 30.

Phillipston (A. D. CLIFFORD). — Yield of Indian corn: as a grain crop, 50; as a fodder and ensilage crop, 75. Yield of rowen, 80. Condition of fall feed, 100. Some interest is being shown in alfalfa growing, but none sown yet. Potato yield, 50; quality, good. Late market-garden crop prospect: beets, 50; cabbage, 40; carrots, 75; cauliflower, 10; parsnips, 60. Fruit yield: fall apples, 40; pears,

80; peaches, 100. All late crops have been benefited by the recent rains. Frosts damaged tomatoes, squash, corn, beans, etc., on the 11th, 12th and 15th.

Dana (LYMAN RANDALL).—Indian corn yield: as a grain crop, 40; as a fodder and ensilage crop, 60. Rowen yield, 10. Fall feed condition, 60. Per cent of fall seeding: grass, 50. Alfalfa does not flourish in this vicinity. Onion yield, 50. Potato yield, 50; quality, 90. Late market-garden crop prospect: beets, 90; cabbage, 40; carrots, 75; parsnips, 50; squash, 25; turnips, 80. Fruit yield: fall apples, 25; pears, 30; peaches, 15; grapes and cranberries, 50. Grass, late potatoes and late garden crops have been most benefited by recent rains. Frost occurred on the 10th and 16th, injuring corn, potatoes and late garden crops. There was a hard freeze on the 16th which put a stop to all growth. It is hard to estimate the damage.

New Braintree (CHARLES D. SAGE).—Indian corn yield: as a grain crop, 75; as a fodder and ensilage crop, 80. Rowen yield, 5. Condition of fall feed, 50. Per cent of fall seeding of rye, 50; very little seeding of other crops. Potato yield, 75; quality, 80. Late market-garden crop prospect: beets and turnips, 50; cabbage and celery, 75; carrots and parsnips, 60; squash, 40. Fruit yield: fall apples, 40; pears and grapes, 80. Grass, corn and all kinds of late garden crops have been benefited by the rains. About the middle of September several killing frosts occurred which injured corn and tomatoes. It is impossible to estimate the damage. The very dry year has prevented the growth of rowen and fall feed, and has also made the plowing for fall seeding very late.

Oakham (JESSE ALLEN).—Yield of Indian corn: as a grain crop, 75; as a fodder and ensilage crop, 80. Rowen yield, 20. Fall feed condition, 50. Per cent of fall seeding of grass, 75. Interest in alfalfa growing is increasing, 2 acres having been sown this year, making a total of 5 in this locality. Potato yield, 75; quality, 100. Prospect for late market-garden crops: beets, cabbage and turnips, 80; carrots, 75; squash, 50. Fruit yield: fall apples and grapes, 25; pears, 100; peaches, 50. The recent rains have improved the grass, apples and fall seeding. Frost on the 15th damaged corn, tomatoes and late potatoes, 25.

Princeton (A. O. TYLER).—Yield of Indian corn: as a grain crop, 50; as a fodder and ensilage crop, 60. Rowen yield, 10. Condition of fall feed, 75. Per cent of fall seeding: clover, 75; grass, 100; rye, 100. Potato yield, 50; quality, 100. Late market-garden crop prospect: beets, 80; cabbage and turnips, 75; carrots, 60; squash, 25. Fruit yield: fall apples, 50; pears, 80; peaches, 90; grapes, 75; cranberries, 40. Grass has been most improved by the recent rains. Corn, beans, tomatoes, squash and melons were injured by frosts.

Lancaster (J. F. BROWN).—Yield of Indian corn: as a grain crop, 80; as a fodder and ensilage crop, 80. Rowen yield, 50. Condition of fall feed, 50. Per cent of fall seeding: clover, grass and rye, 50. There are 5 acres of alfalfa in this vicinity. Potato yield, 75; quality, 80. Prospect for celery and squash, good. Fruit yield: fall apples, 50; pears and grapes, 90; peaches, 80. The recent rains improved the grass. Frosts on the 10th and 11th damaged corn, tomatoes, squash and melons, 50, and also hurt garden crops not growing on high land.

North Brookfield (JOHN H. LANE).—Indian corn yield: as a grain crop, 50; as a fodder and ensilage crop, 60. Rowen yield, 10. Condition of fall feed, 20. Per cent of fall seeding of grass, 120. Potato yield, 33; quality, 100. Fruit yield: fall apples, 10; pears, 60; grapes, 33. Rains improved the grass and corn fodder. Frosts damaged corn, beans, tomatoes and potatoes, 25. Very little corn will mature, and will be cut mostly for silage. Potatoes are very late, and the frosts cut short the growth.

Sturbridge (FRANK T. HAYNES).—Indian corn yield, 75. Yield of rowen, 30. Fall feed condition, 100. Per cent of fall seeding of clover, grass and rye, 100. Two acres of alfalfa were sown this year, making a total of 4. Potato yield, 80; quality, 80. Late market-garden crop prospect: beets, cabbage, carrots and parsnips, 100; cauliflower, 90; celery, 80; turnips, 70; squash, 50. Fruit yield: fall apples, 60; pears, peaches and grapes, 100. Recent rains benefited grass, corn and potatoes. Frosts came on the 10th and 15th, damaging corn and potatoes 10, and squash, 25.

Sutton (H. L. RAY).—Yield of Indian corn: as a grain crop, 50; as a fodder and ensilage crop, 75. Rowen yield, 10. Condition of fall feed, fair. Per cent of fall seeding of grass, 90. Potato yield, 90; quality, 100. Prospect for late market-garden crops: beets, 85; cabbage, 75; cauliflower and turnips, 100; carrots, 85; squash, 65. Fruit yield: fall apples, 40; pears and grapes, 100; peaches, 25. Frost occurred on the 15th and damaged most corn, tomatoes, squash and late potatoes.

Uxbridge (EVERETT D. ROBINSON).—Indian corn yield: as a grain crop, 60; as a fodder and ensilage crop, 80. Rowen yield, 40. Fall feed condition, 40. Per cent of fall seeding: grass, 100; rye, 75. Very little interest is shown here in alfalfa growing. This crop does not seem to thrive on the clay subsoil; 5 or 6 acres planted in this locality. Potato yield, 90; quality, 88; rot affects 2 per cent of the crop. Prospect for late market-garden crops: cabbage, carrots and cauliflower, 100; squash, 60; turnips, 80. Fruit yield: fall apples, 65; pears, 85; peaches, 90; grapes, 70. Apples, grass and fall seeding have been benefited by recent rains. On September 11 there was a light frost, and a heavy frost on the 15th which damaged corn, tomatoes, squash and grapes.

MIDDLESEX COUNTY.

Dunstable (HARRY S. SWALLOW). — As a grain crop, Indian corn yielded 50, and as a fodder and ensilage crop, 75. Rowen yield, 50. Condition of fall feed, 50. The usual amount of fall seeding of grass has not been done. No potatoes have been dug. Prospect for squash, 80. Fall apple yield, 50. Fall feed and rowen have been most benefited by rain. Frost occurred on the 8th and 15th, injuring corn, beans, squash and tomatoes. Damage is estimated at 50 per cent of value of all crops.

Ayer (FRED A. SMITH). — Indian corn yield: as a grain crop, 75; as a fodder and ensilage crop, 50. Rowen is yielding a 50 per cent crop. Fall feed is in very poor condition. Per cent of fall seeding: clover, 50; grass, 75. Potatoes are showing a 50 to 75 per cent crop of normal quality. Fruit yield: fall apples, 75; pears, 100; peaches, 75. Grass, cabbage, turnips and grains have derived most benefit from recent rains. Frost occurred on the 5th, 6th and 7th, affecting most, corn, beans, tomatoes and all vines. The least hardy vines were wiped out.

Westford (J. W. FLETCHER). — Corn as a grain crop yielded 40; as a fodder and ensilage crop, 50. The crop of rowen is 25 per cent of normal. Fall feed is in 50 per cent condition. One-half the usual amount of fall seeding of grass has been done. The potato crop is 40 per cent of normal in yield; in quality, 75. Fruit yield: fall apples, 75; pears, 90. Corn and potatoes were worst injured by frost. Corn was damaged 25.

Billerica (EDWARD F. DICKINSON). — Indian corn yield: as a grain crop, 65; as a fodder and ensilage crop, 80. A 35 per cent crop of rowen has been harvested. Fall feed condition, 50. Per cent of fall seeding: clover, 50; grass, 65; rye, 100; rye and vetch, 75; vetch, 75 (not much raised). Onions yielded a 65 per cent crop. Potato yield, 60; quality, 75. Late market-garden crop prospect: beets, 60; cabbage, 60; currants, 75; cauliflower, 80; celery, 75; parsnips, 90; squash, 60; turnips, 65. Fruit prospect: fall apples, 60; pears, 90; peaches, 40; grapes, 65. Apples, and root crops of all kinds, were most benefited by rains. Frost on the 14th, 15th and 16th damaged corn, squash and tomatoes, 25. The hardest season in years for farmers is drawing to a close. Its one saving feature in eastern Massachusetts, at least, has been the prevailing good prices for most garden and orchard products.

Maynard (L. H. MAYNARD). — Corn yielded 75 per cent of a normal crop. Up to the 15th rowen had not yielded more than 10 per cent of a normal crop. Fall feed condition, 25. The usual amount of fall seeding of clover, grass and rye has been done. Onions are yielding a 75 per cent crop; considerable damage was

done by frost. The potato crop is normal in both yield and quality. Late market-garden crop prospect: beets, 100; cabbage, 50; carrots, celery and parsnips, 100; squash, 25; turnips, 100. Fruit yield: fall apples and pears, 75; peaches, grapes and cranberries, 100. Rowen and pasture lands have been most benefited by recent rains. On the 15th and 16th the mercury went to 28° F., damaging most, corn, potatoes, squash, tomatoes, melons, cucumbers, grapes, cranberries and, in fact, everything that could freeze. Loss by frost is impossible to estimate; some crops were a total loss.

Lexington (HOWARD M. MUNROE). — Corn as a grain crop yielded 85; as a fodder and ensilage crop, 75. Rowen crop is 40 per cent of normal. Condition of fall feed, 75. Per cent of fall seeding: clover, 100; grass, 100; rye, 110. Farmers are showing more interest in alfalfa growing; there are 15 acres of alfalfa in town, 10 of which were sown this year. Onion yield, 75. Potato yield, 85; quality, 110. Late market-garden crop prospect: beets, 75; cabbage, 85; carrots, 75; cauliflower, 60; celery, 100; parsnips, 85; squash, 60; turnips, 75. Fruit yield: fall apples, 65; pears, 120; peaches, 110; grapes, 85. Most benefit from recent rains was derived by celery, spinach, cauliflower, cabbage, beets, turnips and fall seeding. Frosts occurred on the 9th and 10th and until the 16th, with the thermometer as low as 28° F. Crops on hills were as badly affected as those on lowlands. Ensilage corn, late sweet corn, late beets, tomatoes, peppers and peaches were worst affected. The frost damaged some crops 25 per cent, while others were nearly a total loss. Per cent value of crops damaged of value of all crops, 50.

Winchester (S. S. SYMMES). — No corn raised for fodder or ensilage. Rowen crop is 80 per cent of normal. Condition of fall feed, 80. Per cent of fall seeding: clover, 50; grass, 50. There are approximately 6 acres of alfalfa in town. Onions are one-half a normal crop. Potato yield, 50; quality, 80. Late market-garden crop prospect: beets, 50; cabbage, 90; carrots, 50; cauliflower, 90; celery, 90; parsnips, 50; squash, 50; turnips, 50. Fruit yield: fall apples, 50; pears, peaches and grapes, 75. Most benefit by recent rains has been done to cabbage and celery. Frosts injured squashes, cucumbers and tomatoes on the 14th, 15th and 16th. Damage to the extent of 25 per cent in some localities, and 10 per cent in other localities, was done.

Newton (G. L. MARCY). — Corn as a grain crop yielded 80: as a fodder and ensilage crop, 75. Rowen crop is 50 per cent of normal. Condition of fall feed, 80. Potato yield, 50. Tomatoes have been only about a one-half crop, including those damaged by frost and recent rain. Fruit yield: fall apples, 50; pears, 100; peaches, 100 (few grown); grapes, 40. Grass has derived most benefit from rains. Frosts occurred on the 14th and 15th, affecting corn and garden truck. Crops were damaged 30 to 40 per cent.

Weston (EDWARD P. RIPLEY).—Yield of Indian corn, 100. Rowen yield on newly sown fields, 100; on old mowings, 60. Condition of fall feed, 100. The usual amount of fall seeding of clover, grass and rye has been done. Farmers are showing more interest in alfalfa growing, having established trial patches. Potato yield, 75; quality, 90; 1 per cent of those harvested was affected by rot. Late market-garden crop prospect: beets, 75; cabbage and carrots, 100; cauliflower and celery, 80; parsnips, 100; squash, 50; turnips, 100. Fruit yield: fall apples, pears, peaches and grapes, 100; cranberries, 50. Recent rains have benefited most, rowen, cabbage, cauliflower, mangel-wurzels and celery. Frost damaged crops 10 per cent, affecting most, sweet corn, squashes, melons and tomatoes.

Marlborough (E. D. HOWE).—Indian corn as a grain crop yielded 50; as a fodder and ensilage crop, 80. Rowen crop is 25 per cent of normal. Condition of fall feed, 25. Seventy-five per cent of the usual amount of fall seeding of rye has been done. More interest is being taken in the growing of alfalfa; there are 10 acres in town, 3 of these having been sown the present year. Onions yielded an 80 per cent crop. The potato crop is 75 per cent of normal in yield, and 90 per cent in quality. Fruit yield: fall apples, 50; pears, 90; peaches, 50; grapes, 75. Rain came too late to benefit this year's crops. Frost on the 14th did the greatest injury to squashes, tomatoes and corn. Damage to all crops is estimated at 25.

ESSEX COUNTY.

Methuen (FREDERICK A. RUSSELL).—Very little Indian corn raised as a grain crop. Yield as a fodder and ensilage crop, 33. Yield of rowen, 10. Condition of fall feed, 75. Per cent of fall seeding: clover and rye, very little; grass, 100. Farmers are showing but very little interest in alfalfa growing. Onion crop, 60. Potato yield, 75; quality, 100; very little rot. Late market-garden crop prospect: beets, cabbage and carrots, 25; celery and parsnips, 75; squash and turnips, 25. Celery, fall feed and fall seeding have been much improved by the recent rains. Frosts occurred on the 10th, 15th and 16th, injuring squash, ensilage corn, tomatoes and peppers.

Haverhill (MILTON A. CORLISS).—Indian corn yield, as a grain crop, 85. Yield of rowen, 50. Condition of fall feed, 50. Per cent of fall seeding: grass, 75; rye, 75. Onion crop, 50. Yield of potatoes, 80; quality, 85. Late market-garden crop prospect: beets and carrots, 80; cabbage, 70; celery and squash, 75; turnips, 60. Fruit yield: fall apples, 60; pears, peaches and grapes, 90. The rain has much improved grass, barley and rye. On the 15th and 16th frost damaged most, corn, tomatoes, squash and melons, and all crops 75. There has not been much fall seeding on account of unfavorable weather.

Newbury (GEO. W. ADAMS). — Indian corn yield, as a grain crop, 90. Rowen yield, 40. Condition of fall feed, 70. Per cent of fall seeding of grass, 100. The farmers are showing more interest in alfalfa and have made a few small experiments. There are 1 or 2 acres of alfalfa in this locality. Onion crop, 60. Potato yield, 80; quality, 100. Late market-garden crop prospect: beets, carrots, celery and parsnips, 100; cabbage and turnips, 90; cauliflower, 75 to 80. Fruit yield: fall apples, 75; pears, peaches and grapes, 100; cranberries, 80. Pastures, recent grass seedings and late market-garden crops have been much improved by recent rains. Frost occurred on the 12th and 15th, and very seriously damaged everything except cabbage.

Topsfield (B. P. PIKE). — Indian corn yield: as a grain crop, 40; as a fodder and ensilage crop, 50. Rowen yield, 10. Fall feed condition, 20. Per cent of fall seeding: grass, 100; rye, 100. One acre of alfalfa has been sown, making a total of 3 acres in this town. Onion crop, 75. Potato yield, 60; quality, 100. Late market-garden crop prospect: cabbage, 50; squash, 75. Fruit yield: fall apples, 60; pears, 80; peaches, 40; grapes, 50; cranberries, 10. The rains benefited everything not damaged by frost. Frosts came on the 15th and 16th, injuring cranberries 75 and corn fodder 50. The thermometer reached 26° F. on September 15.

NORFOLK COUNTY.

Dover (L. B. PAINE). — Yield of Indian corn: as a grain crop, 65; as a fodder and ensilage crop, 70. Rowen yield, 90. Condition of fall feed, 90. Per cent of fall seeding: clover, 50; grass, 60. Farmers are showing some interest in alfalfa growing, and are planting a few experimental plots; there are 5 or 6 acres in this locality. Onion crop yield, 75. Potato crop yield, 75; quality, 80; per cent of rot, 5. Late market-garden crop prospect: beets, 95; cabbage, cauliflower and squash, 80; carrots and parsnips, 90; celery and turnips, 75. Fruit yield: fall apples, 60; pears, 85; peaches, 90; grapes, 80. Beets, carrots, parsnips, cabbage, turnips and fall feed have been much improved by recent rains. On the 14th a frost killed all tender crops except those in sheltered places.

Millis (E. F. RICHARDSON). — Indian corn yield: as a grain crop, 60; as a fodder and ensilage crop, 80. Yield of rowen, 40. Condition of fall feed, 90. Per cent of fall seeding: clover, 50; grass, 70; rye and vetch, 60. Some interest is being shown in alfalfa growing; 1 acre was sown this year, making a total of 1½ acres. Onion crop, 60. Yield of potatoes, 80; quality, 70; 10 per cent was affected by rot. Prospect for late market-garden crops: beets and cauliflower, 50; cabbage, 75; carrots, 60; celery and parsnips, 70; squash, 90; turnips, 80. Fruit yield: fall apples, 50; pears and peaches, 100;

grapes, 90; cranberries, 20. Rowen, corn and late vegetables have been much benefited by recent rains. Frost occurred on the 15th and 16th, injuring corn, 20; millet, 10; beans and tomatoes, 40; grapes, 10.

Wrentham (JEREMIAH A. COBB).—Yield of Indian corn: as a grain crop, 80; as a fodder and ensilage crop, 100. Rowen yield, 100. Condition of fall feed, 100. Per cent of fall seeding: grass, 100; rye, 100. Potato yield, 80; quality, 100. Late market-garden crop prospect: beets and turnips, 100; cabbage, 50; carrots, 75; squash, 80. Fruit prospect: fall apples, 30; grapes and cranberries, 100; pears, 150; peaches, 200. The rains have benefited grass, grain, fruit and potatoes. Frost occurred on lowlands on the 10th, and there were general frosts on the 15th and 16th, injuring corn, as a grain crop, 10 to 15 and, as a fodder crop, 25.

Foxborough (WM. E. PERKINS).—Yield of Indian corn, 100. Yield of rowen, 100. Condition of fall feed, 100. Per cent of fall seeding: grass, 80; rye, 90. Potato yield and quality, 100. Late market-garden crop prospect: cabbage, 75; carrots, 100; cauliflower, 80; squash, 40; turnips, 100. Fruit yield: fall apples, 60; pears, peaches and cranberries, 100; grapes, 65. Carrots, cabbage and cauliflower have derived most benefit from recent rains. Frosts on the 11th, 14th, 15th, 16th and 17th injured most, corn, tomatoes, beans and squashes. About 75 per cent of the corn fodder was frozen.

Canton (EDWIN V. KINSLEY).—Yield of corn: as a grain crop, 75; as a fodder and ensilage crop, 85. Rowen yield, 50. Condition of fall feed, 90. More interest in alfalfa growing is being shown by farmers. Onion crop yield, 75. Yield of potatoes, 90; quality, 100. Late market-garden crop prospect: beets, cabbage, carrots, parsnips and turnips, 100; squash, 70. Fruit yield: fall apples and pears, 75; peaches and grapes, 100. Rains have most benefited cabbages, turnips, beets, carrots and parsnips. A very heavy frost on the 15th did 25 to 35 per cent damage to corn, squash and tomatoes.

Aron (S. FRANK OLIVER).—Indian corn yield, as a fodder and ensilage crop, 85,—hurt slightly by the early frost. Rowen crop, 50 to 60 per cent of normal. Fall feed condition, 65 to 75. Very little fall seeding of any kind has been done: some rye will be put in the first of next month. Potato yield, 80; quality, 85; very little rot reported. Prospect for late market-garden crops: beets, 70; cabbage, 60; carrots, 80; squash and turnips, 65; parsnips failed to germinate at all. Fruit yield: fall apples and pears, 100; grapes, 80. Root crops of all kinds, particularly turnips, mangel-wurzels and carrots, were most benefited by the rains. Frosts occurred on the 14th and 15th, damaging most, corn, squash and late millet. Total frost damage amounted to 15 to 20; this amount would not

have been so great if crops had not been held back by previous dry weather.

Cohasset (ELLERY C. BATES).—Indian corn yielded a 75 per cent crop. Yield of rowen, 25. Fall feed condition, 25. The usual amount of fall seeding of grass and rye has been done. Onion crop, 75. Potatoes have yielded a 75 per cent crop. Late market-garden crop prospect: beets, cabbage, carrots, cauliflower and parsnips, 75; squash and turnips, 50. Fruit yield: fall apples, 25; pears and grapes, 75. Recent rains have proved most beneficial to cabbage, cauliflower, late beans and turnips. Frosts occurred on the 15th and 16th, damaging crops 10 per cent, and affecting most, squash, tomatoes, beans and corn.

BRISTOL COUNTY.

Mansfield (E. JASPER FISHER).—Indian corn yield: as a grain crop, 80; as a fodder and ensilage crop, 100. Rowen yielded a 30 per cent crop. Fall feed condition, 30. Per cent of fall seeding: grass, 80; rye, 90. Very few onions raised. In yield, potatoes are a 75 per cent crop; in quality, 90. Late market-garden crop prospect: beets, 75; cabbage, 85; carrots, squash and turnips, 80. Fruit yield: fall apples, 40; pears, 80; grapes, 70; cranberries, 75. Corn, potatoes, cabbage and turnips derived most benefit from recent rains. Everything except cabbage and turnips was affected by frosts on the 14th, 15th, 16th and 17th.

North Attleborough (H. P. CALDWELL).—A normal crop of Indian corn has been harvested. Rowen has yielded a 40 per cent crop. Fall feed condition, 60. Per cent of fall seeding: clover and grass, 100; rye, 60. Farmers are showing more interest in alfalfa growing, there being about 5 acres in town. Onions and potatoes are normal crops; very few potatoes are affected by rot. Late market-garden crop prospect: beets, 100; cabbage, 80; carrots, 100; cauliflower, 60; celery and parsnips, 100. Fruit yield: fall apples, 80; pears and peaches, 100. Recent rains have proved most beneficial to cabbage, cauliflower and turnips. Sweet corn and millet suffered 30 per cent injury from the frosts of the 14th and 15th.

Norton (HENRY G. DANFORTH).—Yield of Indian corn: as a grain crop, 125; as a fodder and ensilage crop, 110. Rowen yield, 125. Condition of fall feed, 100. Usual amount of fall seeding of clover, grass and rye has been done. More interest is manifested in alfalfa growing; one-half acre has been sown this year. The potato crop is 85 per cent of normal in quantity, and 100 per cent in quality. Late market-garden crop prospect: beets, cabbage, carrots, parsnips, squash and turnips, 100. Fruit yield: fall apples, 100; pears, 110; peaches, grapes and cranberries, 100. Grass and corn

have been most benefited by recent rains. Frosts on the 14th and 15th injured cranberries, 50; corn fodder, 25; tomatoes, 25.

Rheboth (HAROLD A. GOFF).—Indian corn yield was normal. Rowen was a one-half crop. Fall feed is in poor condition. The usual amount of fall seeding of clover, grass and rye has been done. Farmers are showing no more interest in alfalfa growing than usual; 2 acres have been sown this year, and there are altogether 8 acres in town. Onion yield, 85. Potato yield, 100; quality, 90; 5 to 10 per cent (some, more) is affected by rot. Fruit yield: fall apples, 80; peaches and grapes, 100; cranberries, 80. The first hard frost came on the 14th and we have had several others since. Damage was done to all crops.

Dighton (HOWARD C. BRIGGS).—Yield of Indian corn, 75. Rowen crop, 75. Condition of fall feed, 75. Per cent of fall seeding: clover, 50; grass, 100; rye, 100. There is one small piece of alfalfa in town, but it does not thrive. Few, if any, onions raised for market. Potatoes are a 75 per cent crop, normal in quality; 5 per cent is affected by rot. Late market-garden crop prospect: beets, 75; cabbage, 25; carrots and cauliflower, 75; celery, parsnips and squash, 50; turnips, 75. Fruit yield: fall apples, 50; pears, 100; peaches, 125; grapes, 90. Crops most benefited by recent rains are: turnips, beets, cabbage and grass. Frosts occurred on the 12th, 13th, 14th and 15th, doing most damage to corn, tomatoes, beans, squash and peppers. Corn was damaged 50, and tender crops killed.

Freetown (GILBERT M. NICHOLS).—Corn yield, 75. Rowen yield, 20. Fall feed is in 90 per cent condition. Per cent of fall seeding: clover, 10; grass, 80; rye, 100. Not much more interest is being shown in alfalfa growing. The 2 acres in town were sown the present year. Blight prevented planting of onions. Potatoes are an 80 per cent crop, of 100 per cent quality. Late market-garden crop prospect: beets, cabbage, carrots and parsnips, 100; squash, 75; turnips, 90. Fruit yield: fall apples, 125; pears, 120; peaches, 60; grapes, 50 (damaged by frosts); cranberries, 100. Pastures, turnips, apples and carrots derived most benefit from rainfall. Frost, on the 14th, did most damage to corn, grapes, late potatoes and tomatoes. One-half the fodder and ensilage corn crop was frozen, and damage to all crops is estimated at 17.

PLYMOUTH COUNTY.

Marshfield (L. C. BARTLETT).—Corn was a normal crop. Rowen yield, 75. Condition of fall feed, 100. Per cent of fall seeding: grass, 100; rye, 100. Onions are a 50 per cent crop. Potato yield, 100; quality, 75; some scab. Late market-garden crop prospect: beets, cabbage, carrots and turnips, 100; squash, 50. Fruit yield: fall apples, 50; pears, 75; peaches, grapes and cranberries, 100.

Tomatoes and late sweet corn were damaged by frosts on the 15th and 16th. Damage to all crops is placed at 10 per cent.

Duxbury (HENRY A. FISH). — Indian corn yield: as a grain crop, one-half or less; as a fodder and ensilage crop, 75. Rowen yield, 25. Fall feed is in poor condition. Farmers are showing more interest in alfalfa growing, but only small patches are planted here. Onion yield, 80. Potato yield, 80; quality, 95. Late market-garden crop prospect: cabbage, 75; carrots and cauliflower, poor; celery and parsnips, good; squash, very poor; very few turnips raised this year. Fruit yield: fall apples, 50; pears, good; peaches, very good; cranberries, 75. Rains came too late to do any good. Frost on the 15th did most damage to cranberries. Per cent value of crops damaged of value of all crops, 10.

Hanson (A. W. GORHAM). — Indian corn yield: as a grain crop, 90; as a fodder and ensilage crop, 100. Rowen crop is 25 per cent of normal. Fall feed condition, 75. Per cent of fall seeding: grass, 110; rye, 90. More interest is manifested in alfalfa growing, but none sown as yet. Yield of potatoes, 50 to 75; quality, 110. Late market-garden crop prospect: beets, cabbage and squash, 100; turnips, 50. Fruit yield: fall apples, 50; pears and peaches, 100; grapes, 25; cranberries, 100. The recent rains arrived too late to benefit anything but grass. Frosts, on about the 7th and 8th, injured corn and squash to the greatest extent.

Halifax (Mrs. G. W. HAYWARD). — The crop of corn is 75 per cent of normal. Rowen yield, 50. Condition of fall feed, 50. A normal amount of fall seeding of clover, grass and rye has been done. Onion crop is 75 per cent of normal. Potato yield, 50; quality, 100. Late market-garden crop prospect: cabbage, squash and turnips, 50. Grass lands, particularly those just seeded, have been most benefited by recent rains. Frosts did considerable damage to cranberries, tomatoes, squash, corn and flowering plants.

Lakeville (NATHANIEL G. STAPLES). — As a grain crop, corn is 75 per cent normal; as a fodder and ensilage crop, normal. Rowen yield, 50. Fall feed condition, 100. The usual amount of fall seeding of grass has been done. Interest in alfalfa growing is increasing; there are 10 acres in town, all sown this year. Potato yield, 75; quality, 100. Cabbage prospect, 100; turnip prospect, 100. Fruit yield: fall apples, 50; pears, 100; peaches, 125; grapes and cranberries, 100. Grass and turnips in particular, and all crops not harvested in general, were benefited by the rains. Corn and tomatoes suffered most severely from the frosts on the 8th and 9th.

Carver (J. A. VAUGHAN). — The corn crop is 75 per cent of normal. Rowen yield and condition of fall feed, 75. Per cent of fall seeding: clover, 50; grass, 50. Yield of potatoes, 75; quality, 100. Fruit yield: fall apples and pears, 75; peaches, 100; grapes, 50; cranberries, 90. Recent rains have done most good to fall feed.

Light frost on the 15th and heavy frost on the 16th; the latter did most damage to cranberries, tomatoes, corn, beans and melons. the total damage to all crops being estimated at 20 per cent. Some cranberry bogs, and parts of bogs, were injured more than others; some of the berries are not worth picking, while those damaged slightly will lessen the market value of the crop. Corn and market-garden crops were so badly damaged by frost that the rains were of no benefit.

Rochester (GEORGE H. RANDALL). — Indian corn yield: as a grain crop, 50; as a fodder and ensilage crop, 90. Rowen yield, 50. Fall feed condition, 100. Per cent of fall seeding: clover, 50; grass, 100; rye, 100. Interest in alfalfa growing is on the increase; 5 of the 10 acres in town were sown this year. Onions is a one-half crop. Potato yield, 60; quality, 100. Late market-garden crop prospect: beets, 75; cabbage, 90; carrots and parsnips, 80; squash, 50; turnips, 100. Fruit yield: fall apples, 50; pears, peaches and grapes, 100; cranberries, 100 or more. Most benefit from recent rains by grass, millet, turnips and cabbage. Crops were damaged probably 25 per cent by frosts on the 15th and 16th; most damage was done to cranberries, corn and millet. Vetch is being tried on a few farms.

BARNSTABLE COUNTY.

Sandwich (H. F. HOXIE). — Yield of Indian corn as a grain crop, 80; as a fodder and ensilage crop, 90. Yield of rowen, 80. Fall feed condition, 80. There is some interest in alfalfa growing. Yield of potatoes, 80; quality, 100. Very few are affected by rot. Prospect for late market-garden crops: beets, 80; cabbage, cauliflower and squash, 75; carrots, parsnips and turnips, 90. Fruit yield: fall apples and peaches, 75; pears, 100; grapes, 85; cranberries, 80. Frost occurred on the 15th, affecting Indian corn and cranberries 10 per cent.

Barnstable (JOHN BURSLEY). — Yield of Indian corn as a grain crop, 75; as a fodder and ensilage crop, 65. Yield of rowen, 10. Condition of fall feed, 90; all grown since September 1. Per cent of fall seeding: clover, 90; grass, 90; rye, 80. There are 2 acres of alfalfa in town. Potato yield, 35; quality, 100; 1 per cent has been affected by rot. Late market-garden crop prospect: turnips, 50. Fruit yield: fall apples, 105; pears, 95; peaches, 90; grapes, 100; cranberries, 80. Fall feed and apples have been much benefited by rain. Cranberries were injured 10 per cent by frost on the 16th.

Yarmouth (E. W. ELDRIDGE). — Yield of Indian corn, as a grain crop, 50. Yield of rowen, 75. Fall feed condition, 80. Per cent of fall seeding of grass, 50. Onion crop, 25. Potato yield, 60; quality, 75. Turnip prospect, 50. Cranberry yield, 60. Frost occurred on the 16th, damaging cranberries to some extent.

Dennis (JOSHUA CROWELL). — Indian corn yield as a grain crop, 90; as a fodder and ensilage crop, 75. Rowen yield, 25. Condition of fall feed, 80. Per cent of fall seeding: clover, 100; grass, 100. Onion crop, 50. Potato yield, 60; quality, 100. Late market-garden crop prospect: cabbage, 50; carrots, 75; turnips, 30. Fruit yield: fall apples, 40; pears, 90; peaches, 100; grapes, 75; cranberries, 50. Cranberries, corn and turnips are much improved by the recent rains. Cranberries were injured 5 per cent by frosts on the 15th and 16th.

Wellfleet (E. JACOBS). — Indian corn yield as a grain crop, normal; very little is raised for fodder. Rowen yield, 5. Condition of fall feed, 105. Per cent of fall seeding: clover, 5; grass, 100; rye, 100. A little alfalfa is raised in this vicinity. Potato yield, 105; quality, good. Late market-garden crop prospect: beets, cabbage, parsnips, celery and cauliflower, 100; carrots, 105; squash, 98; turnips, 50. Fruit yield: fall apples, pears and grapes, 100; peaches, 105; cranberries, 97. Beets, parsnips, turnips, onions and rowen have been much improved by rain. Frost occurred on the 18th, injuring tomatoes slightly.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — Indian corn yield: as a grain crop, 100; as a fodder crop, 100. Rowen yield, 25. Condition of fall feed, 110. Not much fall seeding has been done, although a few farmers have sown rye and vetch. One farmer has sown 2 acres of alfalfa, which is doing well. Potato yield, 90; quality, 100. Late market-garden crop prospect: beets, cabbage, carrots and turnips, 100; squash, 75. Fruit yield: fall apples, peaches and grapes, 50; pears and cranberries, 75. The recent rains have improved turnips, grass, corn and trees. Light frost occurred about the middle of the month, doing slight damage.

BULLETIN OF
MASSACHUSETTS BOARD OF AGRICULTURE.

FARM ICE HOUSES.

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Massachusetts farmers in general are so familiar with the advantages in the use of ice on the farm during the summer that it is almost superfluous to call their attention again to these advantages. The use of ice for the cooling and preservation of milk, cream and butter has, however, been so long considered the principal object of ice-storage on the farm that it may not be out of place to call attention to some of the other advantages of having a supply of this cheapest of nature's refrigerating agents on hand.

The use of ice for the cooling of small fruits, including strawberries, raspberries, gooseberries and currants, has scarcely become, as yet, a general practice, other than as a means of holding them for a day or so for home consumption. Experiments in California, Ontario and in Australia have, however, indicated a great advantage in the precooling of many kinds of fruit as a means of improving their carrying capacity, and there is little doubt that the use of ice for the immediate cooling of fruits as they come from the plantations will come more and more into general use, particularly in a State like Massachusetts, where small-fruit culture must become of ever greater and greater importance in the fruit-growing industries of the State. A few of the larger producers of orchard fruits may also find it advantageous to use ice for the precooling, or even for the storage, of large quantities of fruit during the packing season, though the New England climate at this time of the year is, on the whole, rather favorable for the preservation of the orchard fruits until such time as they can be placed in regular city cold storage.

A convenient supply of ice on the farm provides also a good means of preserving butter, eggs and meats during the hot weather. It enables the farmer to market his perishable products at more convenient times, and sometimes enables him to avoid overstocked mar-

kets. It is a boon in case of sickness, and it is hardly necessary to say that it is almost an essential to the housewife in good house-keeping.

The numerous streams, ponds and lakes of Massachusetts provide, with the help of the winter climate, a sufficient supply of ice for summer refrigeration on the farm at little more than the cost of the labor in harvesting the ice crop. With this readily available supply, and an appreciation of the advantages of storing sufficient for the summer's needs, the principal question in the minds of Massachusetts farmers will be in what manner to store the ice rather than whether or not storage is desirable. This article will, therefore, deal more directly with the types of storage houses than with theoretical considerations of the value of the ice during the summer season.

The earliest form of ice-storage in use was the cave or pit. Historical records show that both the Persians and the Romans made use of ice brought from mountain caves to cool their beverages during the summer, and the practice of storing in such places has continued to the present time. Caves and pits have the advantage of protection from the direct rays of the sun, and of a comparatively steady temperature throughout the entire season. They have, however, the very serious disadvantages of poor drainage, inaccessibility and inconvenience in storing, removing or sometimes in both storing and removing, the ice. Fig. 1 illustrates a comparatively modern

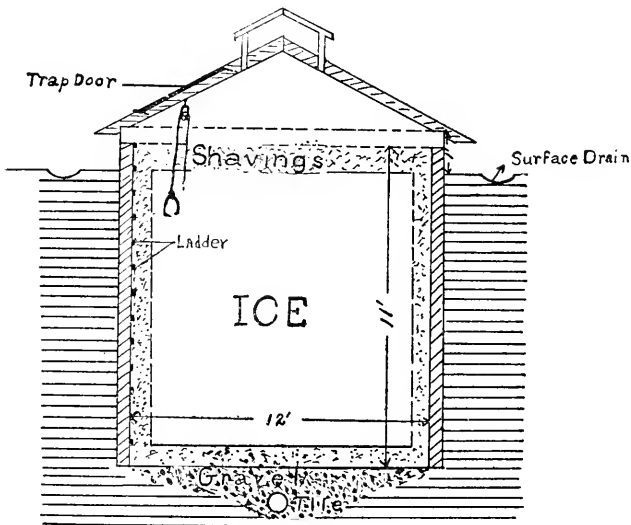


FIG. 1. — Ice pit.

type of ice pit, showing how it is provided with artificial drainage and with insulation, with a roof as an additional protection against the loss of ice.

Of comparatively recent introduction, but of almost equal primitiveness in construction, is the use of the ice stack. This method of storing ice is extremely simple and may be explained in a few words. In a shaded place on a gentle northern slope a rough floor of rails, rough boards or logs is laid as nearly flat as the materials used will permit. These floor materials should be laid parallel with the slope so that the spaces and irregularities between them will provide drainage down the slope. Over these rough boards should be placed 8 inches of sawdust or mill shavings, or 12 inches of wild hay. The ice is then stacked up as squarely as the blocks will permit, and to a height about equal to the rectangular dimensions of the pile if the quantity to be stored is small, or to as great a height as can conveniently be handled in case the quantity is very large. The nearer cubical the whole pile, up to a convenient height for handling, the less the loss from melting will be. The whole pile must then be covered with sawdust, shavings or wild hay, and the top protected by a cover which will turn the rain. Usually there is a sufficient supply of used lumber about a farm for this purpose, but a canvas cover can be used if desired. Fig. 2 shows one method of covering an ice stack

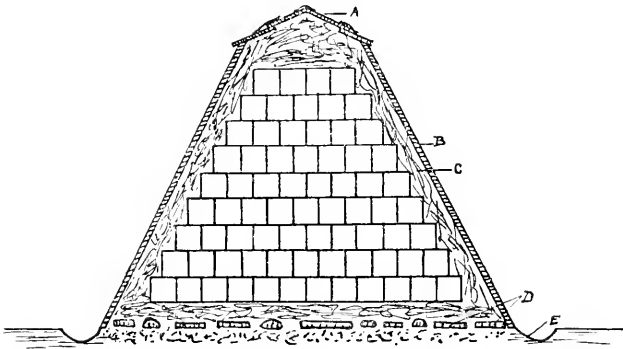


FIG. 2.—Ice stack. A, capboards held together by wire and staples; B, side boards standing on end and leaning against ice stack; C, wild hay; D, rough flooring; E, surface drain.

stack. Among the disadvantages in the use of the ice stack are the great waste in ice which must accompany the poor character of the insulation, and the difficulty of getting sufficient material to cover the entire stack. This latter difficulty is sometimes met by planting posts the height of the pile at its four corners at a distance of 8 to 10 inches from the corners of the stack, nailing on a few rough boards and confining the insulating material to the space between the boards and the ice. When this practice is followed, however, it will be seen that one is approaching the true building, or ice house, and it is practically a foregone conclusion that it would be much cheaper and more satisfactory in the long run to build a permanent rather than a

temporary structure for the purpose. The ice stack is also likely to be inconvenient in location. A satisfactory place for it may not be available near the buildings. It is unsightly in appearance, and if located at some distance from the house and barns it will not give the service desired. The ice stack is, however, of value as a means of supplementing an inadequate home supply during the early part of the season. This is particularly likely to be true on large dairy farms where the ice house is not of sufficient capacity to carry a full summer supply. Under these conditions an ice stack built near the pond where the ice is gathered, or at some place convenient to the barns, may have its place of usefulness.

The third type of farm ice-storage may be termed the makeshift ice house. It consists in the appropriation, for the purpose of storing ice, of one end of the woodshed, a box stall in the stable, a corner in a leanto shed, the tool house or an abandoned chicken house. Occasionally such a makeshift ice-storage may be satisfactory and hold as much ice as is needed. The probabilities are, however, that it will not permit of adequate insulation, and that it will not carry sufficient ice to supply the farm needs through the summer. Not being constructed for the immediate purpose of storing ice it will not be adequately drained or ventilated, and if located in a conspicuous part of the farmyard it may prove to be a very unsightly part of the farm equipment. If ice is stored in a makeshift house care must be taken to see that there is no danger from fire as a result of spontaneous combustion in the insulating material.

Of storage houses there are many sizes, forms and methods of construction. The essentials of an ice house are: first, capacity large enough for its purpose; second, good insulation so as to prevent rapid loss of the ice through melting; third, drainage to carry away the water from the bottom of the pile of ice, as it melts; fourth, ventilation at the top of the ice pile; fifth, convenience of location; sixth, an appearance that does not detract from the general attractiveness of the farm buildings; seventh, reasonable cost.

The size of the ice house must be calculated in cubic feet of capacity, allowing 45 to 50 cubic feet of space for each ton of ice to be stored. A house 12 feet square and 11 feet high will hold approximately 25 tons of ice, — sufficient to supply a moderate-sized farm where the consumption of ice for milk cooling is not exceptionally large. — allowing space for the insulating material.

The most effective insulating materials available are dead air, wood and paper. Brick, stone, earth and concrete are fair conductors of heat, and are therefore not desirable for insulating purposes, though brick, stone and concrete may in some cases be desirable as outside walls, either for the sake of their superior lasting qualities or because they may correspond to the materials used in other buildings on the farm in question. Since wood is the only

material available for construction among those named as desirable for insulation, it is recommended as the most generally satisfactory material for the construction of ice houses. Dead-air spaces may be formed by an extremely careful construction of walls, but this would be entirely impractical in a farm ice house, and if dead air is to be used as an insulating material it must be obtained by the use of sawdust and shavings, both of which materials are fairly available to Massachusetts farmers. When tightly packed between the ice and the walls of the storage house, shavings and sawdust enmesh in their crevices large quantities of air which is practically immovable in character, or dead, as storage-house constructors speak of it. Considerable air is also contained in the pores of the sawdust and shavings, and it is this immovable air, even more than the material itself, which makes of sawdust and shavings good insulating materials. Hay is less desirable than sawdust or shavings because the air enmeshed in it is not so finely divided, and may circulate to some extent. It takes a larger quantity of hay, and hence more space between the ice and the walls of the building, to give the same amount of protection with this material as with shavings or sawdust. For the most perfect result from the use of hay, sawdust and shavings the material must be dry, as any of these materials when wet are fairly good conductors of heat. For the best result at least 8 inches of well-packed sawdust or shavings should be used between the ice and the walls, and the top of the ice should be covered to a depth of 10 inches. If hay is used at least 12 inches should be allowed between the ice and the walls, and 14 or 15 inches on the surface of the ice.

Drainage is necessary because the water from the melting ice is a good conductor of heat, and if it accumulates in the bottom of the ice house and stands up about the lower tiers of ice it will cause a rapid loss. It will, moreover, soon soak the insulating material and thus permit rapid conduction of heat directly from the walls to the main stack of ice. It is also unsanitary, and will cause a rapid rotting of the timbers in the ice house.

Drainage is secured by the selection of a well-drained site, or by placing a tile beneath the ice house. Where the house must be constructed on a soil which does not drain well naturally, an excavation should be made the size of the house and 12 inches in depth. In the center of this excavation should be placed a row of tile leading to a satisfactory outlet, and the entire excavation filled in covering the tile with coarse gravel or cinders.

Ventilation should be arranged for over the top of the ice stack. Where the building is completely closed, the air above the ice beneath the roof becomes highly heated and causes a rapid loss by direct radiation of heat to the ice. Reliance for insulation is placed on the sawdust, shavings or hay which immediately covers the ice, rather

than upon the main body of air above this insulated covering. By placing a ventilator in the ridge of the roof, and leaving a 6-inch opening below the plates all around the side of the building, a sufficient circulation of air will be secured.

The farm ice house should be located convenient to the buildings and in as inconspicuous a spot as can be selected. It is a common practice to locate the ice house close to the milk room for the sake of convenience in handling the ice. Occasionally the ice house is located near the pond where the ice is obtained, but unless this is

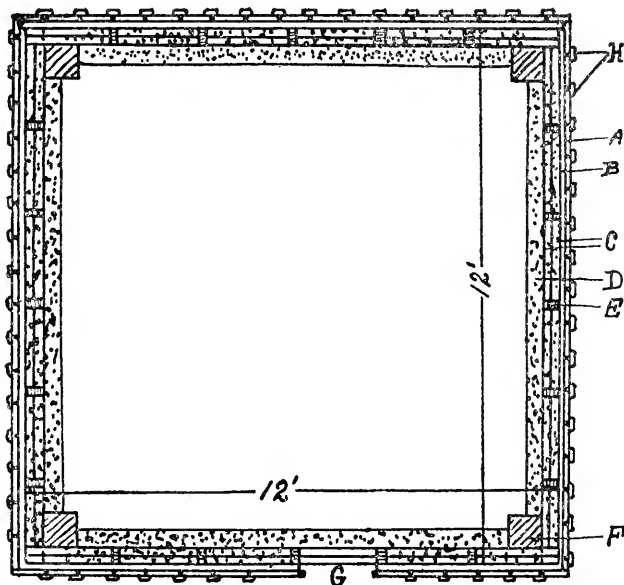


FIG. 3. — Well-built farm ice house plan. A, siding placed vertically; B, inside layer of boards placed horizontally; C, siils and plates made of two 2 by 4's spiked together; D, sawdust; E, 2 by 4 studs on 24 inch centers; F, posts about 7 by 7, 3 feet in ground and 11 feet above ground; G, opening for ice full height of house, and closed by boards placed in groove, constructed as shown in drawing; H, battens.

immediately accessible to the buildings the farmer will fail to make as much use out of the stored ice as he would if it were located within convenient reach.

The appearance of the ice house must be left to the judgment of the constructor. Nothing more can be said than to indicate that it should be in keeping with the other buildings on the farm. The ice house is for an extremely utilitarian purpose, and ornate ornamentation on a structure of this kind is uncalled for and usually entirely out of place.

Ice houses that will carry ice satisfactorily through the summer may be built at very small cost. The framework may well consist of roughhewn posts gathered from the farmer's wood lot. No floor is necessary. A double ribband of 2 by 4's securely spiked to the posts will provide both plates and sills. The studding should consist of 2 by 4's on 24-inch centers. The walls may be built of a single layer of rough boards nailed to the outside of the studding, or, if a better construction is desired, with better appearance, building

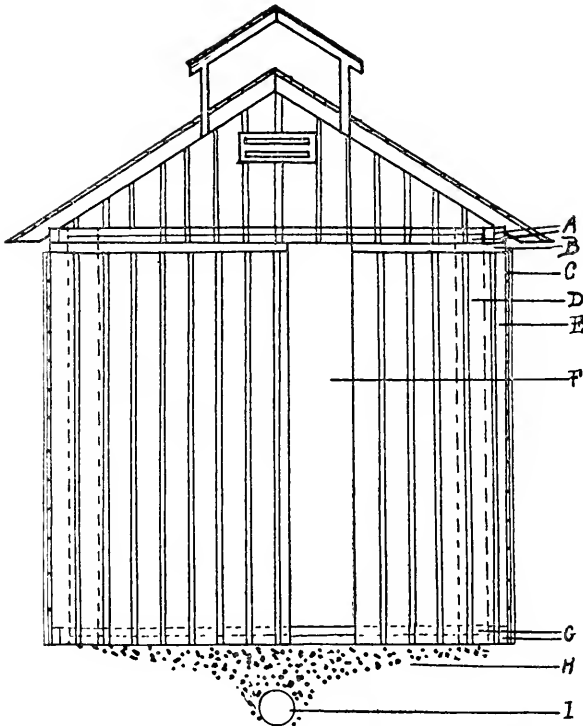


FIG. 4.—Well-built farm ice house. Elevation: A, plates; B, 6-inch open space between weather boarding and plates; C, weather boarding; D, posts (shown in dotted lines); E, studs; F, opening for ice; G, sills; H, gravel for drainage, I, tile.

paper may be used over this first layer of boards, and a second layer of boards, planed on one side and matched for size, may be nailed vertically over the first layer, this second layer to be battened with $1\frac{1}{4}$ -inch battens, breaking all the joints. The latter type of construction, while much neater and more lasting, is but little more effective in the preservation of the ice, provided sufficient insulation is used between the walls and the ice itself, the outer wall being essentially only a protection against the wind and weather. The

roof is essential to keep out the rain, and as a protection against the direct rays of the sun, and must be the best constructed part of the building. It may be of shingles, sheet metal or some ready prepared roofing, all of which materials are thoroughly satisfactory with the exception of those which are black. An ice-house roof should preferably be light in color in order to reflect the rays of the sun.

An ice house, holding 30 to 50 tons of ice, of solid construction, properly drained, and neat in appearance will cost from \$50, where the farmer supplies considerable of his own material and labor, to \$125, where all the materials are purchased and labor hired for the construction of the house.



