

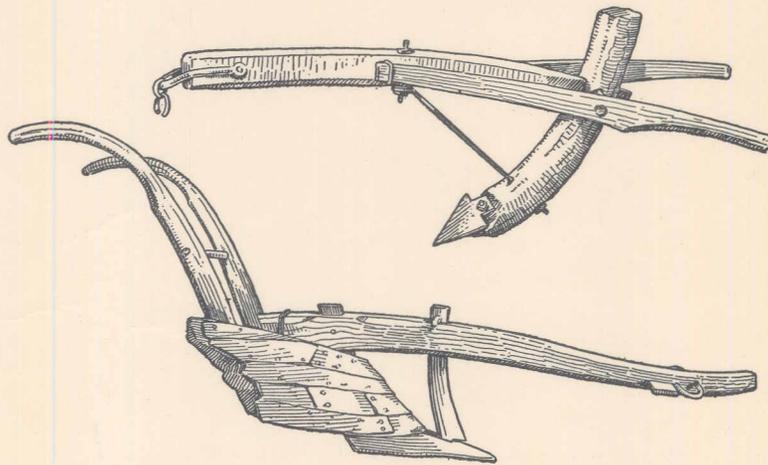
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FARMING AND LAND USES

GENERAL STUDY

Minute Man National Historical Park Concord, Massachusetts

by
RICARDO TORRES-REYES



DIVISION OF HISTORY

Office of Archeology and Historic Preservation

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U.S. DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

INTRODUCTION

The purpose of this study is to identify the general land uses in the Lexington-Concord area during the time of the American Revolution, as authorized in approved RSP MIMA-H-25a. Emphasis has been given to vegetative cover, agricultural practices, farming techniques, livestock and crop management, and other facets of farming in Middlesex County. For master plan development, the information will be useful in recreating the historical and natural environment of Minute Man National Historical Park. The Library of Congress and the historical files of the Park provided the primary and secondary sources used in the report.

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FARMING AND LAND USES IN THE LEXINGTON-CONCORD AREA,
MIDDLESEX COUNTY, DURING THE AMERICAN REVOLUTION

LAND RESOURCES

1. Historical setting

A stretch of about seven miles of rolling country between the towns of Lexington and Concord provides the main setting for the significant events of April 19, 1775. The events, which marked the beginning of the shooting war of the American Revolution, are commemorated today by Minute Man National Historical Park.

No portion of the road and landscape traversed by the British and minute men has escaped the heavy impact of change, but some of the old pastoral scene is still evident. Along the environs of this road, existence then depended on the industry, frugality, and self-reliance of the farmers.¹ Lexington and Concord were country towns, and country towns of New England were centers of widespread agricultural zones. Both towns formed part of the physiographic region of the Boston Basin,² in the southeastern part of Middlesex County, Massachusetts.

1. Existing roads were known by their destinations, hence the Lexington-Concord Road. Ruth R. Wheeler, North Bridge Neighbors (Concord, 1964), p. 19, note 1.

2. W. J. Latimer, Soil Survey of Middlesex County, Massachusetts (Washington, D. C., 1924), pp. 1-2.

Good houses, cleared land, bridged streams, roads, stone fences, shops, churches, meeting houses, and warm clothes, all these features existing in 1775, reflected a certain degree of general advancement in the surrounding country. Here everybody "had a farm, and almost every farmer had a trade. Even ministers and doctors lived by farming."³

Lexington, 11 miles northwest of Boston, was originally a meadow belonging to Cambridge; it became an independent township in 1713. The town's best claim to history is the site of the first skirmish of the American Revolutionary War.⁴

Just seven miles west of Lexington, Concord was "the first town above the fall line on the New England frontier." Founded in 1635 and situated at the confluence of two streams forming the Concord River, (the town's early economy centered on fur trade and cattle raising.) By the next century its meadows, bordering on rivers and lying adjacent to upland plains, were favorite spots for planting grains and grazing livestock.⁵

3. George Tolman, "How Our Great-Grandfathers Lived," Preliminaries of Concord Fight (Concord, 1901), p. 14.

4. Lexington had about 700 inhabitants by the time of the Revolution. Charles Hudson, History of the Town of Lexington (2 vols. New York, 1913), I, 475-77.

5. In 1783 the population of Concord was 1321 inhabitants. Lemuel Shattuck, A History of the Town of Concord (Boston, 1835), p. 211.

In 1774 the first county convention to denounce the "Coercion acts" depriving Massachusetts of its charter and the right to choose its own magistrates met in Concord. The first and second provincial congresses defied British authorities there.

On April 19, 1775, after the first skirmish in Lexington, the British occupied Concord to destroy arms and ammunition stored in a farm. "Forewarned, citizens had removed most of the supplies. The British who crossed the river at North bridge were driven back by minute men. This action opened the military phase of the American Revolution."⁶

2. Natural scene

a. The soil

In general, the land offered great variety and contrast, with diversity of mountains, woods, hills, flat meadows, rivers, swamps, and lakes. This spotted character of the landscape did not provide a uniformly rich soil for agriculture. On a given farm, the soil was often of many different types; a single farm had good and poor land. In some areas the soil was composed chiefly of a thin stony or gravelly loam mixed with sand, clay, and decayed vegetable matter. Some parts of the uplands and meadows contained a dark, rich, and fruitful soil; others a loose sandy one, easily

6. Encyclopaedia Britannica (1967), VI, 260.

affected by drought. (Clay was rarely found.) In some meadows, fibrous and compact peat afforded an inexhaustible supply of fuel and manure for the farmers.⁷

b. Rivers and Ponds

Concord was the largest stream of water, "remarkable for the gentleness of its currents." In times when the river was swollen, it overflowed its banks and in many places was more than a mile wide. Great inconveniences resulted to the town from this circumstance. Among the other rivers that crossed the land were The North or Assabeth River; Fort Pond Brook, or Law's Brook; Spencer Brook, or Fifty Acre Brook; Mill Brook; Saw-Mill Brook, or Ralph's Brook; and Nut-meadow Brook. Of the various ponds, four alone - White Pond, Fairhaven, Walden, and Bateman's - covered 211 acres.⁸

c. Trees and plants

Wood grew in different parts of the area with great rapidity. Oak, pine, maple, elm, white birch, chestnut, walnut, hickory, and locust were very common. Hemlock and spruce were very rare. Most of the plants found in the middle

7. Shattuck, pp. 197-98, 269, 309, 324; Latimer, pp. 12-26; Samuel Adams Drake, History of Middlesex County... (2 vols. Boston, 1880), II, 34.

8. Shattuck, pp. 200-02.

part of the state grew here, excepting the Alpine flowers. Numerous other flowers, moss, shrubs, and weeds grew everywhere profusely.⁹

d. Wild animals

Bear, moose, wolf, deer, fox, otter, beaver, muskrat or musquash, and marten were the principal wild animals. Wolf were very troublesome for many years in killing calves and sheep, and rewards were offered for killing them. Solitary ponds, rivers, and meadows were resorts of the beaver and other amphibious animals.¹⁰

e. Bird life

Birds had no particular sanctuary in this area. The most troublesome to the inhabitants were the black bird, which frequented the low meadows in great numbers, the crow, and the jay. Rewards were paid for the heads of crows and jays. As late as 1792 the town of Concord offered the following rates for killing "those pests to cornfields, called crows": 1 shilling for each old crow; 6 pennies for each young crow; 3 pennies for each crow's egg found and taken out of the nest.¹¹

9. Ibid., p. 199; Samuel Deane, The New England Farmer (1st. ed. Worcester, 1790), pp. 55, 79, 97, 111, 212-13, 251-52. This book is a sort of dictionary.

10. Shattuck, p. 203.

11. Ibid., p. 203.

f. Fish

Formerly, salmon, shad, alewives, pike or pickerel, dace, and some others were the most abundant fish near Concord. They afforded an article of food; fish was also used as manure for agricultural purposes.¹²

METHODS and TECHNIQUES of FARMING

1. General observations

Farming in colonial days was a mixed husbandry that combined the cultivation of small areas of grains with the raising of livestock. Agriculture was almost everywhere in a bad state, and by the late eighteenth century the knowledge of farming had become more or less definite.¹³ With no great improvement in primitive methods, farming became routine husbandry. The typical agriculture of the period was conducted on farms that had been worn out by generations of bad tillage, using the same old, rough and clumsy implements. (Fields were cultivated with little fertilizers) and the same grains and vegetables were raised year after year with little attempt at

12. Ibid., p. 202.

13. Lyman Carrier, The Beginnings of Agriculture in America (New York, 1923), p. 223.

*No Crop
Totalion*

a rotation of crops, until the land was exhausted. The bulk of the farmers had not shown a disposition to adopt new methods.¹⁴ It is difficult to determine to what extent superstitions retarded the improvements of farm practices and the invention of new machinery. Many planters still clung to the dictum of the Old Farmers' Almanac:

Land was plowed, crops were seeded and harvested, brush cut, fences built, wells dug, and animals bred according to favorable or unfavorable phases of the moon. Farmers lived in a peculiar mental state which allowed them little control over their own affairs. Things were because they were. Plant diseases or insect pests were regarded as visitations of divine displeasure as were droughts, floods, hurricanes, hail, frost, and freshets. Days of prayer were frequently called to end droughts or ameliorate the ravages of epidemics or crop pests.¹⁵

General Warren of Massachusetts, writing on March 1, 1786, drew a sharp contrast between the methods of farming prevailing at home and in England:

A man in England that farms 150 acres, would think a stock of £ 500 sterling necessary; three teams would be employed; four or five ploughs; barrows, wagons, carts, etc. in proportion; 70 or 80 acres tilled; 8 or 10 labourers at work; 800 or 1000 loads of manure annually collected; and perhaps three times more cattle, sheep, and hogs kept, than are kept here on a farm that is naturally as good. A man in America that farms 150 acres, would

14. Percy Wells Bidwell and John J. Falconer, History of Agriculture in the Northern United States: 1620-1860 (New York, 1941), p. 84.

15. Carrier, p. 223.

think a stock of £ 100 Sufficient. One miserable team; a paltry plough, and everything in the same proportion; three acres of Indian corn, which require all the manure he has; as many acres of half-starved English grain from a half-cultivated soil, with a spot of potatoes, and a small yard of turnips, complete the round of his tillage, and the whole is conducted, perhaps, by a man and a boy, and performed in half their time; no manure but the dung from the barn, which, if the heaps are not exposed to be washed away by the winter rains, may amount to 15 or 20 loads; and if they are so exposed to much less, without any regret to the farmer. All the rest of the farm is allotted for feeding a small stock. A large space must be mowed for a little hay for winter; and a large range for a little feed in summer. Pastures are never manured, and mowing lands seldom.¹⁶

The Rev. Timothy Dwight, also of Massachusetts, and the traveler of the period, was forced to admit that

the husbandry of New England is far inferior to that of Great Britain. . . . The principal defects in our husbandry, so far as I am able to judge, are a deficiency in the quantity of labour, necessary to prepare the ground for seed; insufficient manuring; the want of a good rotation of crops; and slovenliness in cleaning the ground. The soil is not sufficiently pulverized; nor sufficiently manured. We are generally ignorant of what crops will best succeed each other; and our fields are covered with a rank of weeds.¹⁷

16. American Museum (12 vols., Philadelphia, 1787-1792), II, No. IV (1787), 347.

17. Rev. Timothy Dwight, Travels in New England and New York (4 vols. New Haven, 1821), I, 108-09.

An especial object of the scorn of one contemporary writer and traveler was the tillage of American fields in New England.

The unknown author of American Husbandry wrote:

Worse ploughing is nowhere to be seen. . . . Thus, in most parts of the province, is found shallow and unlevel furrows, which rather scratch than turn the land; and of this bad tillage the farmers are very sparing rarely giving two ploughings if they think the crop will do with one; the consequence of which is their products being seldom near so great as they would be under a different management.¹⁸

2. Cultivation of maize

(American farm practices were greatly influenced by Indian agriculture.) Intertillage with such crops as corn, tobacco, sweet potatoes, and beans had been commonly practiced by the Indians hundred of years before the genial Englishman Jethro Tull wrote his famous "Horse Hoeing Husbandry" in 1731.¹⁹

Descriptions of methods of seeding and planting given by early writers offer full and explicit accounts. One peculiarity of Indian tillage "in hills" was that the soil in the intervening spaces was not broken. All weeds were kept cut or pulled out. As the corn plants grew, some loose dirt was scraped around them. These hills were used over and over again in successive seasons and became quite sizable mounds. The colonists followed

18. American Husbandry, by an American (2 vols. London, 1775), I, 81.

19. Tull was one of the greatest improvers of British agriculture.

this Indian method of seeding in hills but often neglected the weeding. In using animals for corn cultivation it was found more feasible to kill the weeds by stirring the intervening ground.²⁰

A keen observer of agricultural life, Dwight has left us an excellent description of maize cultivation as practiced by the best farmers of the late eighteenth century:

Maize is planted in hills, from three to four feet apart, in a manner resembling a quincunx. The number of stalks in a hill should not be more than four nor less than three. The ground is afterwards broken, sometimes with a harrow, made in the form of a triangle, and sometimes with a plough; each drawn by a single horse. In stony grounds a larger plough is used; and is drawn by a yoke of oxen. The ground is then cleaned with the hoe. The process is repeated at least three times, and not unfrequently four: at the last of which the earth is raised to the height of from four to six inches, around the corn, and is denominated a hill; whence every planting is called a hill of corn. The hill is made, to give a better opportunity for the roots, which, when the stalk is grown to a considerable height, shoot from it several inches above the surface, to insert themselves in the ground with more ease, and less hazard of failure. These roots are called braces; because they appear to be formed for the sole purpose of supporting the stalks.²¹

20. Carrier, p. 95.

21. Dwight, I, 108; see also William Douglas, M. D., British Settlements in North America (2 vols. Boston, 1749), II, 204.

Another writer, probably referring to small farmers, observed that Indian corn was seldom "tended as it ought to be; if there be any ploughing between the Rows it is shallow, just so as to kill Weeds, but not so as to make a great Quantity of soft mellow Earth."²²

Although ploughing between the furrows had become a usual practice in some parts of New England, cross-ploughing was practiced "only by good farmers."²³ Maize, however, was considered an exhausting crop, and as little or no manure at all was added to the land, it soon became apparent that good tillage was necessary while the corn was growing if any kind of crop was to be harvested.

Indian corn seemed "to do well in any sort of Land, either Sand or Clay, High, or Low Land...."²⁴

A crude implement similar to the "bull tongue" was quite generally employed to dig trenches for row seeding. In New England this was used for corn planting. A series of shallow trenches was laid off at regular spaces across the field; then another set of trenches made at right angles and across the

22. Eliot Jared, Essays on Field Husbandry in New England (Boston, 1760), p. 121.

23. American Husbandry, I, 50.

24. Jared, p. 57.

first. The corn was planted at the intersections of these furrows thus imitating the check rowing of the Indians.²⁵

Check rowing

Three ways of seeding the ground were used: (1) in hills as it was called, or in squares; (2) in drills, or continued rows; (3) in the "broad cast method," or at random with a cast of the hand. The first required the least quantity of seed, the last the greatest.²⁶

** Seeding*

3. Land and Crop management

Rotation of fields rather than rotation of crops was practiced by the Indians for many years. This Indian example was followed at first by the colonists, as clearing new land was cheaper than fertilizing old.²⁷

Rotation of crops or change of seeds was very little understood and followed by eighteenth century New England farmers.²⁸ In clearing the land, the first step followed was to cut down, grub out, and burn the underbrush. Then the larger timber might be destroyed either by girdling or by cutting it down and burning it. On the land thus cleared the farmer raised chiefly grain crops. Indian corn was usually the

25. Carrier, p. 267.

26. The New England Farmer, pp. 308-12.

27. Carrier, p. 97.

28. The New England Farmer, pp. 52-54, 283-84.

first crop on new land, although under some circumstances wheat or rye was planted.²⁹

To improve the land, the general practice was to sow grain crops successively on the same land, without manuring, until it was exhausted; then to leave it fallow, that is, to grow up the weeds and bushes for a number of years until it was thought to have rested sufficiently to produce more grain. There was no regularly observed succession of grain crops. Wheat, maize, rye, and other cereals were alternated on the larger fields, sharing the land occasionally with small patches of oats, barley and flax.

There were, however, some very important improvements in the offing. The beginning of a modern system of crop rotation had appeared as early as the Revolution. In preparation for some crops -- flax, hemp, and wheat -- a summer fallow was not uncommon. A most important change which began after the Revolution was the introduction of the practice of sowing the fields, in the years when they were to be pastured, with some kind of grass seed, often clover. In Massachusetts the land was usually broken up after being in grass 3 or 4 years, and then cropped for 3 years.³⁰

29. Ibid., pp. 65-66; Bidwell, pp. 77-78.

30. Massachusetts Agricultural Repository and Journal (10 vols. 1798-1832), II (1807), 28; American Husbandry, I, 53, 126, 171; The American Farmer, pp. 50-51, 163-66; John Dabney, An Address to Farmers... (Salem, 1796), p. 55.

Wheat and other small grains were often sown in the furrows when Indian corn was cultivated; therefore, the land did not require especial preparation for the succeeding crop. Sometimes after the Indian corn had been harvested, the stubble was ploughed under and the seed sown and harrowed in. If wheat was to be sown on grass land, a summer fallow often intervened. The land was broken up in the fall, or in the early spring, and ploughed once or twice before fall when the grain was sown and harrowed in. In the autumn the cattle were often pastured on the sprouting grain.³¹

There was no greater improvement of arable land than that of plowing it well in order to pulverize the soil and prepare it for receiving the seeds. Digging the land was done with a spade or a plow, but after the crop was growing, it was necessary to stir the ground in order to destroy the weeds. This work was generally performed with the hoe; when the ground was very stiff, forks were used to break and loosen the earth between the crops. In large open fields of beans, peas, and other large-growing plants which were planted in rows, the ground between rows could frequently be stirred with a small swing-plow. This sort of plowing was termed horse-hoeing.

31. American Museum, V, 376.

Although the tool used in this operation was a plow, it was termed hoeing because it was intended to destroy the weeds and stir the ground only to a small depth.³²

In connection with the horse-hoeing practice, a traveler of the late eighteenth century observed that even "common farmers in some parts of New England have been struck with the excellency of the practice of ploughing between the rows of this grain [maize], that they have been presently brought to practice in common, so that it is now no longer an unusual method."³³

4. Fertilizers

In all ages, the most judicious farmers have manured their arable land to enrich the soil. Eighteenth century writers, however, were of the opinion that a combination of manuring and tillage seemed to be the most rational method of cultivation.³⁴ All kinds of animal excreta fertilizers (called dung), they claimed, contained some components that fermented when mixed with the soil. While fermenting, this kind of

32. The important subject of horse-hoeing is fully discussed in Jethro Tull, Horse Hoeing Husbandry (1739); The Gardeners' Dictionary (Dublin, 1764), Vol. II; The New England Farmer, pp. 155-58, 220-26; Chambers' Dictionary Supplement (1753); Metcalf Bowler, A Treatise on Agriculture.... (Providence, 1786), pp. 36-42.

33. American Husbandry, I, 51.

34. Bowler, p. 37; Charles Varlo, A New System of Husbandry.... (2 vols. Philadelphia, 1785), II, 154-55.

fertilizer provided a moderate degree of heat to the corn plants when they were in a weak state, and in the more severe seasons.³⁵

There were various kinds of manure in use outside of dung: oak bark, after the tanners had used it for tanning leather; rotten vegetables; weeds of ponds, lakes, and ditches; rotten wood, sawdust; bones, horns, and other parts of animals; decayed fish, sea sand and shells, and many others. All these manures were better for cold strong land than for a light and sandy one. Some mineral fertilizers, like lime and chalk, were known also.³⁶

Of the organic substances used as fertilizers, stable manure took first rank with the exception of New England where the Indian method of fertilizing with fish was practiced. Those who took the most pains to manure their lands were the best farmers. Much of the stable manure was wasted by neglect. If used at all it was applied sparingly to only a few crops, chiefly to maize and potatoes.³⁷

More specific examples of methods and techniques of farming will be outlined later in this report, in the section dealing with tools and equipment.

35. Chambers' Dictionary; Bowler, pp. 30-35; The New England Farmer, pp. 196-200; John Spurrier, The Practical Farmer... (Wilmington, 1793), pp. 35-36; Arthur Young, Rural Economy... (London, 1770), pp. 247-69.

36. Gardeners' Dictionary; Carrier, p. 268.

37. Joseph Scott, Geographical Description of Pennsylvania (Philadelphia, 1806), p. 23.

GRAIN CROPS

1. General land use

A colonial farmer relied chiefly on his own labor and that of his family. There was frequent cooperation between several families in harvesting, corn-husking, barn-raising, and the like. In New England only men were usually seen in the fields while the women looked after the dairy, the poultry, and the kitchen garden. Because of the scarcity of a regularly dependable force of farm labor, only small parts of the farms were actually tilled, and the cultivation of these patches was superficial and negligent.

Cooperation

only men in fields

The small proportion of farm under tillage is illustrated by the figures below, showing general land utilization in the County of Middlesex in 1801:

only small amt of land tilled

Total taxable acres	433,766
Tillage acres	27,507
English upland mowing	30,737
Fresh meadow and salt marsh	40,183
Pasture	112,555
Woodland and Waste	222,784 ³⁸

The pasture land included proprietors' commons; woodland and waste included unimproved and unimprovable lands as well as town commons.

38. Valuation returns, MSS, Mass. Archives, Boston.

On a percentage basis the land utilization was as follows:

Tillage acres	6.3
English upland mowing	7.1
Fresh meadow and salt marsh	9.3
Pasture	25.9
Woodland and Waste	51.4

More specific information about general land use and crop yields is derived from tax records and valuation reports. In the tax records of Concord in 1771, the residents were ranked in order of land types -- pasturage, tillage, mowing, fresh meadow -- and the number of acres owned in each category. There were 228 farm owners. Rank number 1 was occupied by a man who had 184 acres of land classified this way: pasturage, 100; tillage, 28; mowing, 14; fresh meadow, 42. The last rank was occupied by a farmer who owned only 1 acre of land and it was used for tillage; the average farmer owned 34 acres of land. Concord

The total taxable land was 7,694 acres: pasturage, 3,155; tillage, 1,450; mowing, 926; fresh meadow, 2,163. In this sampling, the acreage of tillage seems to be high because, apparently, the ranking list does not include unimproved and unimprovable land³⁹

According to the Lexington tax records for the same year,

39. Concord Tax Records, 1771.

tillage was measured in terms of acres and the number of bushels of grain or corn that could be produced on them.

The acreage varied from 0 to 7; on one 7-acre tillage, 86 bushels of grain or corn were produced, whereas on another tillage of the same size only 60 bushels of produce were harvested. The estimated produce in bushels per acre of tillage was 11.2; the maximum amount 162.3; minimum 6 bushels.

Out of 47 farms under 5 pound total value, all but 6 had tillage. The average amount of tillage land of the 41 entries listed was 2.7 acres per farm, and from this land an average of 30.4 bushels of grain was harvested. The produce from the tillage land was listed as grain and various types of corn, and did not include vegetable gardens.⁴⁰

For the town of Lincoln, the maximum acreage of tillage land on the 1774 real estate tax list was 20 acres held by Ephraim Hartwell. There were very few who owned as much as 10 acres; the standard amount of tillage seemed to be about 6 acres, which could be farmed with a pair of oxen. Those who had more than the average of tillage also had more than one pair of oxen.⁴¹

LINCOLN

40. Lexington Tax Records, 1771.

41. Lincoln Tax Records, 1774.

This small proportion of land devoted to tillage can be noted in a more specific case. Thomas Brooks and his son Noah owned several tracts of land in different parts of Lincoln. The tax record of 1774 broke down assessment by types of land. Thomas and Noah owned together 10 acres of tillage; 28 acres of mowing; and 32 acres of pasture land; woodland and unimproved land were not included in the tax valuation. In 1792, when Noah had inherited the lands of his father, the Lincoln tax record broke down his real estate by land types again, a total of 119 acres: tillage, 9 acres; English mowing, 6; meadow, 20; pasture, 28; woodland, 28; unimproved, 28.⁴²

In connection with Concord, the general land use for three different years was as follows, using valuation returns:

<u>Kind of use</u>	<u>1781</u>	<u>1791</u>	<u>1801</u>
Total taxable acres	11,007	12,445	11,623
Acres tillage land	1,188	1,063	1,112
English mowing	753	721	840
English meadow	2,089	1,827	2,236
Pasturing	3,099	4,398	3,800
Woodland	3,878	4,436	3,635 ⁴³

Lincoln had a similar situation in 1784:

Total taxable land	7,507 acres
Tillage land	454 "
English mowing	429 "
Meadow	800 "
Pasturing	1,502 "
Woodland	2,057 "
Other land	2,128 "
Unimprovable	137 " ⁴⁴

42. Lincoln Tax Records, 1774 and 1792.

43. Concord Tax Records, 1781, 1791, 1801.

44. Lincoln Tax Records, 1784, 1791, 1792.

For tax purposes, the crops on Lincoln farms were divided into 6 categories in 1791: Indian corn and barley, rye, English hay, cider, flax, and hemp. In 1792 the crops' worth was estimated by yield per acre:

Tillage -- 5 and 6 pounds
English mowing -- 4 and 6 pounds
Meadow -- 3 and 4 pounds
Pasturage -- 3 and 4 pounds
Woodland -- 1 and 2 pounds
Unimproved land -- 10 shillings
Unimprovable lands -- various amounts

2. Indian corn or maize

Practically all the tillage land was devoted to grain crops. Corn or maize was the chief natural grain and took precedence over other grains, like wheat, barley, peas, oats, and rye. In all New England corn was "the grand product of the country on which the inhabitants principally feed."⁴⁵ Dwight wrote that maize was "nearly as valuable to this country as all other kinds of corn [grains]/united, and yields a crop much more certain, and much more extensively useful than any other."⁴⁶ Varlo, another observer, noted that the Americans were, "in general," masters in the management of corn.⁴⁷

45. American Husbandry, I, 50.

46. Dwight, II, 73.

47. Varlo, p. 228.

Bowler described corn as the largest, most

beautiful, and one of the most profitable vegetables that is raised in this country. It far exceeds wheat in the largeness and beauty of its stalks, leaves and grain: some of these plants are seven to eight feet high when brought to their full growth, and they are suited to the horse-hoeing culture, which brings them to great perfection. The cobs are sometimes a foot long, on which twelve or fourteen rows of Corn are curiously placed, and folded up in a thick soft, husk, which defends the seeds from the birds and bad weather. Some of the cobs are white, some red, some blue, some yellow, and some white, mixed with one or other of these colours."⁴⁸

In New England there were many varieties of corn: Canada, Flint, Nantucket, Chicken, Sweet, Long Island, Guinea, Virginia, Carolina, etc. ^{Flint Corn} Flint corn grew to the height of ten feet, and was the heaviest, the most nutritious, and most productive of all species.⁴⁹ About 20 to 25 bushels an acre seems to have been considered an average crop for New England on fairly good soil.⁵⁰

In 1771 the production of grain crops in Lincoln, Concord, and Lexington was as follows, using as reference the number of

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48. Bowler, p. 65.
49. Dwight, II, 311.
50. Bidwell, p. 101.

polls shown in the tax records of that year; we suppose corn is included in these figures; the acreage land refers only to tillage:

	<u>Lincoln</u>	<u>Concord</u>	<u>Lexington</u>
No. of Persons	34	219	121
No. of acres land	139	1,516	618.5
Average holding	4.1	6.9	5.11
Bushel/acre	16	12.7	13.7
Total # bushels	2,219	19,315	8,508 ⁵¹

The importance of Indian corn in relation to other cereals in the Middlesex County is indicated below, using figures from Massachusetts valuation returns of 1801:

<u>Grain</u>	<u>Bushels</u>	<u>% of total</u>
All grains	376,614 $\frac{1}{2}$	100
Indian corn	276,929	73.6
Rye	64,943	17.2
Barley	13,430	3.6
Oats	16,597	4.4
Peas and beans	4,215 $\frac{1}{2}$	1.1
Wheat	500	0.152

3. Rye

Rye was a widely distributed crop, second only to corn. It was grown on practically every farm, and was confined principally to sandy and gravelly soils. In New England, due to the decline of wheat-growing, rye flour and Indian meal made the standard "rye and Injun" bread of the farm families. Rye

51. Lincoln, Concord and Lexington Tax Records, 1771.
52. Valuation returns, Middlesex County, 1801.

straw, as well as that of barley and oats, was used to supplement hay as winter fodder for livestock. Rye was also used in the back country of the frontier for the "distillation of whisky."⁵³ Rye averaged from 10 to 15 bushels per acre.⁵⁴

There were two kinds of this grain: the large rye which was better for winter sowing, and the small rye for spring. The large, or winter, type was the strongest and hardiest and was generally sown on poor, dry, gravelly, or sandy soils, where wheat would not thrive. Small rye was sown in the spring, about the same time as oats. Wheat generally carried an equal price with barley.⁵⁵

4. Barley

In American Husbandry, the author states that barley and oats were very poor crops, "yet do they cultivate both in all parts of New England: the crops are such as an English farmer, used to the husbandry of the eastern parts of the kingdom, would think not worth standing; this I attribute entirely to climate, for they have land equal to the greatest productions of those plants."⁵⁶ Regarded as a poor crop, "the barley of

53. William Strickland, Observations on the Agriculture of the United States of America (1801), p. 47; The New England Farmer, pp. 286-87.

54. Bidwell, pp. 96-97.

55. George Cooke, Complete English Farmer... (London, 1772), pp. 21-22. See also Spurrier, pp. 137-38; Bowler, pp. 62-63.

56. American Husbandry, I, 53.

New England was highly esteemed in the middle states and was exported to New York and Philadelphia, where it was brewed for beer."⁵⁷

Dean, a farmer and writer, considered barley as "cooling and deterrentive." A broth of it was given to persons with fevers. Barley was very suitable for cultivation on the northern part of Massachusetts, but it grew in any soil. The quantity of seed for an acre was two bushels, if the grain were small; if larger, more in proportion. A crop of 40 bushels per acre was not uncommon among the best farmers. Barley was a hardy and profitable grain. When hulled, it was preferable to rice "in every branch of cookery for which rice was used."⁵⁸

When malted, barley became "so sweet and vigorous, that few things exceed it in spirit and virtue. The potent liquors distilled from barley shews its strength."⁵⁹

5. Oats

This grain was not so valuable as barley or rye, but was almost equal to them in uses. It was excellent food for

57. Jeremy Belknap, The History of New Hampshire (3 vols., Boston, 1792), III, 142.

58. The New England Farmer, pp. 18-23.

59. Bowler, p. 61. See also Edward James Hooper, The Practical Farmer.... (Cincinnati, 1842), p. 18; Spurrier, pp. 137-46.

horses and working oxen, and it made cows yield a great deal of milk. The quantity of seed for an acre was four or five bushels; the best time for sowing was early in spring. Its straw was good fodder in winter, and saved a great deal of hay.⁶⁰

6. Wheat

Wheat required more tillage than any other crop, and the proper quantity of manure. Dung was the most common manure for wheat land, but was the worse in the sense that it produced too many weeds.

By the end of the eighteenth century wheat had become a special crop and had practically disappeared from eastern Massachusetts. Wheat bread was almost unknown on farmers' tables throughout most of New England. In part, the failure of wheat crops was due to the pests of rust and the Hessian fly. In connection with wheat crops, the author of American Husbandry remarked:

They say they cannot grow good wheat; that they do not grow good wheat I am sensible, but I attribute it to their throwing it into such systems as this, 1 maize, 2 maize, 3 wheat, 4 oats, 5 wheat, etc. etc. In which case, the wheat may be thin, shrivelled, and husky, without its being the fault of the climate. I am of opinion, under such culture, it would be the same in Britain.⁶¹

60. Bowler, pp. 63-65; Spurrier, pp. 146-48; Douglas, II, 207; Bidwell, p. 97.

61. American Husbandry, I, 77; Bidwell, pp. 92-96; Cooke, p. 11; The New England Farmer, p. 35; Dabney, p. 61.

6. Beans

The sorts and varieties of beans were numerous, but the most common were: English bean, called Windsor; kidney beans of various kinds, such as cafe knife bean, Canada bean, cranberry bean, short bean, the white beans cultivated in fields, and the scarlet bean. English beans required moist and strong soil and flourished better in stiff clay. They grew better in rows and required hoeing.

A smaller English bean, called horse bean, was used to feed horses. The cafe Knife bean was produced in great amount with the help of hog dung added to a little mixture of ashes.⁶²

OTHER FARM PRODUCTS

1. Fruits

✓ Apples were the most important fruits of New England. Their varieties--sweet and sour, natural and grafted--were numerous almost beyond account. Some kinds of apples ripened early and were used for making cider; others ripened later and were preserved for winter and spring use. All sorts of apples were propagated by grafting and budding.⁶³ Practically every deed, will, and property inventory of Concord and Lexington farmers have references to apple orchards and a good supply

62. The New England Farmer, pp. 23-24.

63. The New England Farmer, pp. 13-14.

of cider. The Hunt family of Concord became famous for its crops of apples. They cultivated a long-keeping winter apple with a russet skin that was highly prized in Concord and other parts of New England.⁶⁴ Other common fruits like pear, peach, plum, cherry and strawberry could not compete with apples.⁶⁵

✓ Apple cider was the common drink of all the inhabitants, "rich and poor....In the cellars of the well-to-do houses a barrel of cider was always on tap, and pitchers of it were brought up at every meal and in the morning and evening."⁶⁶ When milk was scarce, even children were given diluted cider. There was an export market for cider and cider brandy, as well as for apples. The Massachusetts valuation returns for 1767 give 33,436 barrels as the quantity of cider produced in Middlesex County in that year, amounting to seven barrels for each family or 1.14 barrels per capita. The production of cider, of course, gives a good idea of the amount of apples grown. In 1781 Concord produced 882 barrels of cider, and 799 in 1791; in 1784 Lincoln produced 840 barrels.⁶⁷

64. Wheeler, pp. 125-26.

65. The New England Farmer, pp. 129-31.

66. Charles Francis Adams, Three Episodes in Massachusetts History (2 vols. Boston, 1892), II, 686.

67. Alice Morse Earle, Home Life in Colonial Days (New York, 1898), pp. 148, 161; Bidwell, pp. 99-100; Shattuck, pp. 213, 310.

For some farmers the preparation of good cider required extreme care and patience:

"two or three days after the cyder has been well made in the common way, and before it begins to ferment, let him take out the head of a cask which will contain one hundred gallons, and set it upright, with a faucet or plug placed in it near the bottom. Then let him empty his barrels into it, and grate one quarter of a pound of chalk into the liquor: let it be stirred with a stick, the end of which has been broomed, until it begins to ferment. Then let it stand for two, or three days, according as the weather may be, when all the pomace will rise and float on the top of the liquor. Then let it be drawn off into casks perfectly sweet and new, for bad casks will spoil the best cyder if put into them, and let it stand without giving it vent, till the beginning of February following, when it must be racked off. Cyder, naturally good and managed this way, is equal, in the opinion of many Gentlemen, to small wines."⁶⁸

2. Garden vegetables

In the earliest days there was little cultivation of garden vegetables except pumpkins, beans, and other squashes with the popular maize. Even later in the eighteenth century farmers generally paid scant attention to gardens. Usually a small fenced piece of ground was dug up near the house and left to the care of the women who were already overburdened with household industries. In the gardens of colonial Massachusetts were seeded most of the common vegetables which thrive there

68. Dabney, p. 25.

today: cabbages, turnips, lettuce, spinach, radishes, onions, peas, potatoes, carrots, asparagus, beets, cucumbers and various relishes and condiments. In general, however, only a few varieties appeared on the farmers' tables. Turnips, onions, and cabbages were occasionally fed to animals.

Together with the vegetable enclosure, the housewife took care of a herb garden where she kept her own home-grown, home-made remedies for minor aches and pains.⁶⁹

3. Fiber plants

Flax, a graceful plant with pretty drooping blue flowers, and hemp, a plant with a tough fibrous coat, were the best known raw materials for making linen. Hemp and flax were grown only in small fenced patches for home use. Flax was one of the most important and profitable of all plants in husbandry. It was grown not only for the fiber but for the seed, which could be marketed. It grew best in moist land. At nine pence per pound, one acre gained six pounds clear profit.

In many of the farmers' wills we find references to specific amounts of good flax for the annual allotments of their wives. In the property inventories "flaxbreaks" are listed; these were implements used for dressing flax.

69. William Chauncy Langdon, Everyday Things in American Life: 1607-1776 (London, 1939), pp. 277-278; Carrier, p. 149; Dwight, p. 226; The New England Farmer, pp. 17, 33, 39-41, 44-46, 53, 62, 75, 268-74, 325-26.

Flax and wool were the two great clothing staples, flax being made into linen and the sheep wool into woollen cloth. Flax spinning wheels were used by women and girls very skillfully.⁷⁰

4. Forest products

Each farm of any considerable size had a forest area or "woodland" to afford a supply of fuel and timber. The quantity of ground set apart for this use varied according to the size of the farm, the demand for wood, the quality of the soil, and the nature of the climate.⁷¹ Oak, hard pine, chestnut, black birch, beech, curled maple, willows, ash, cedar, elm, and locust were common trees of the agricultural zone of Concord-Lexington. These trees not only gave material for firewood and charcoal, but provided timber for an unlimited number of uses and jobs: house construction, bridges, carts, wagons, fencing stakes, hand tools, house furniture, and the like.⁷²

Black, white and yellow ash trees were natural to the climate of Massachusetts. The body of the black ash was separated into thin strips, and therefore used very much for

70. Bidwell, p. 98; Dabney, pp. 51-52; Cooke, pp. 37-38; Varlo, I, 333; The New England Farmer, pp. 112-15, 145, 150-51; Carrier, p. 149; Richard Parkinson, The Experienced Farmer.... (2 vols. Philadelphia, 1799), I, 138-41.

71. The New England Farmer, pp. 125-26.

72. Names of trees are mentioned in deeds and wills.

brooms and baskets. White ash was highly esteemed by the farmer, and much used for ploughs and carriages, and many of the tools used in agriculture. The bark of the tree was used for making vessels for storing grain, seeds, and the like.

Elm was a common tree of the forest. Its wood was very good for the naves of carriage wheels.

The Locust tree grew in great numbers in the vicinity of Boston. It produced excellent timber, especially good for fence posts.⁷³

In the Estabrook country, northwest of Concord, special kinds of woods were found that were useful for the small industries which flourished there -- cedar for pencils, maple for furniture, oak for casks, and so forth.⁷⁴

CROP INSECTS and DISEASES

Plants as well as animals were, and still are, susceptible to injurious and often fatal diseases. The origin and nature of most of these diseases were not easily understood by colonial farmers, even though they were besieged by both crop and live-stock disorders, sometimes with disastrous effects. We know now that some of the plant diseases were caused by factors like

73. The New England Farmer, pp. 15-16, 98, 193-94.

74. Wheeler, p. 41.

temperature and humidity, soil and light conditions, amount of minerals needed for proper plant growth, and presence of poisonous substances in the air or in the soil. Improper cultivation practices, besides being disastrous in themselves, could prepare the way for widespread infection by other disease agents.⁷⁵

We include below a partial list of the most common crop diseases found in Massachusetts, with a brief description:⁷⁶

a. Mildew, or mildew

Blast or mildew was a parasitic fungus growth pernicious to wheat. It was described as "a certain sweet tasted clammy substance, found in mornings, on the leaves of some vegetables, the pores of which do not absorb it." The dew was supposed to be the real cause of the rust, or dark colored spots, on the stems and leaves of blasted grain.

b. Hessian fly

This fly was one of the most serious insect pests that was injurious to wheat; the hatched larvae attacked the base of the plant.

75. Most of the crop diseases are still with us today. Encyclopaedia Britannica, XVII, 1173-83; XXIII, 466-72.

76. All the crop diseases are described in The New England Farmer, starting on page 42; see also The Gardeners' Dictionary.

e. Canker

This was a disease that affected trees, and its cause had to do with the nature of the soil. It made the barks rot and fall off.

d. Smut

Smut was a distemper in grain that dissolved "the substance of the kernel, turns it to a black dust, and burst the coats of the kernels."

e. Spur

Rye was affected by this disease that was a kind of distemper.

f. Ustilago

This was a distemper that attacked grain, especially wheat; the grain had a burned appearance.

g. Canker worm

Canker worm had much the same effect on apple trees as canker. The worm came from the egg of an earth-colored bug. This worm was so voracious that in a few weeks it could destroy all the leaves of a tree.

h. Caterpillar

Caterpillars fed on leaves and fruits. A hairy kind of this worm built its nest on apple trees in May, and in June was entirely gone.

i. Grub

Grub was the name of a large "maggot" produced from

the eggs of a certain species of butterfly. It was of large size, and often did great damage to Indian corn by preying on its roots; it produced the beetle and sometimes was called rook worm.

j. Grasshoppers

They appeared in dry summers and destroyed fruits; sometimes they ate the bark of trees and shrubs.

k. Black worm

This was an ash-colored worm; it attacked young cabbages, cauliflowers, and other vegetables.

l. Top worm, or Spindle worm

A white worm resembling a grub; top worms were found in the hose, or socket of a maize plant; they ate the stem of the plant.

m. Striped bug, or yellow fly

So called because the outer wings were striped with yellow and black, this was a four-winged insect that ate and destroyed young plants of cucumbers, melons, squash, and pumpkins.

n. Turnip fly

These flies ate the leaves to turnips.

o. Red worm

This slender insect ate wheat, barley, and oats above the crown of their roots.

p. Garden flea

Of very dark color, or nearly black, this minute fly ate cabbages, and other plants.

q. Lice

Of the same shape of mites, but larger, this insect destroyed cabbages, turnips, and the like; a kind of black lice attacked apple trees, and sometimes was found on colts, and on neat cattle.

r. Maggots

These were larvae of insects that attacked young cabbages, turnips, and radishes.

s. Palmer worm

Apples and oak trees were victims of this small worm.

t. Weevil

This insect was injurious to corn in granaries.

u. Timber worms

There were two kinds of timber worms. A small kind ate only the sappy parts of the wood; the large boring type was more mischievous and made the greatest havoc in pine trees.

TOOLS and EQUIPMENT

With only few exceptions, there were very little changes in husbandry tools and equipment in the eighteenth century. Still in use were hoes for chopping weeds and preparing the

tracts of land for seeding; spades, shovels, and picks or mattocks for digging and loosening the soil; sickles for harvesting grain; scythes for cutting grass and forks for handling hay. All these were holdovers from ancient times.

Lack of metal-working tools held back for many years the development of metal construction, but the colonists overcame this hindrance to some extent through the use of wood. They became skilled in making carts and wagons, and all the wooden parts of yokes, ploughs, and tool handles. Iron parts -- the chains and plowshares, axes, the scythe blades, the hoes and pitchforks, prongs and sickles -- were hammered out by the blacksmith. Such tools, however, were heavy, clumsy, and ill-contrived for their purposes.⁷⁷

1. Inventory of husbandry tools

To a great extent, the type of husbandry tools and equipment used by farmers of the late eighteenth century can be explained from the lists that appear in wills and property inventories.⁷⁸ A selection from several inventories include the following: carts and wheels, plow and plow irons, ox yokes

77. Carrier, p. 267; Langdon, p. 297.

78. The wills and inventories belong to farmers from Lexington and Concord, and are dated 1777 to 1794: Middlesex County Registry of Probate, Numbers 2,840; 2,842; 18,039; 12,280; 24,796; 2,864; 7,573.

and irons, draught, horse tackling, shovel, dung and hay forks, iron-toothed harrow, grind stone, iron bars, half a cider mill, flaxbreak, scythes and tackling, cart rope, axes, sled, crosscut saw and adz, augers, chisel, iron wedges, hames, tools to blow rocks, gauge, fan to clear grain, hand flails, iron hay hooks, hand iron shovel and tong, firearms, fire swivel and tongs, toasting iron, bellows, side saddle, spinning wheel and reel, spoon mole and ladle, warming pan, shears, old hilt, funnel and spout, brash and wooden scales, pillion, sickle cutlass, cart hoops, marking irons, hammer pinchers. hatchets, iron heater, hand saw, hoes, flaxcomb, several kinds of chains, mouse trap, and many others.

2. Description and use of tools

Some of the tools listed above suggest that a farmer had a lot of work to do in connection with home industries; he even had to worry about setting the mouse trap at night.

Below, some tools are outlined briefly or in detail, depending on their importance.

a. Axe

For farming, the axe was a narrow tool; a broad one was used for carpentry. The best axes were made of iron and steel; the handles were usually of the toughest woods, either walnut or white oak. Since it was used mainly for chopping large

logs and sticks, three feet was the greatest length ever needed for an axe.⁷⁹

b. Carts

Carts were of essential importance for the farmer, especially for summer transport. Horse carts were used sometimes, but ox carts were more common. Of the latter, some were short, some long. The short cart was about eight feet long, four feet wide, and two feet high. The long one was used for carting hay, straw, and other bulky matters. Therefore, it was made from ten to twelve feet or more in length, four feet wide, and instead of sides it had only long, sharp pointed stakes. Since oak was not so apt to decay, the principal parts of a cart were made of that wood; axle and wheels of the toughest of oak. Some carts had wheels shod with iron, others just a wooden rim, which was suitable for farm use. Carts were clumsy and heavy, and of course, two-wheeled. (In New England, and at least before the Revolution, the four-wheeled wagon was practically unknown.)⁸⁰

Dwight made an interesting observation about carts: "The drivers of loaded carts and wagons usually walk on the left side. If you take the right, the driver is of course between you and

79. The New England Farmer, pp. 17-18; for tools in general see also Parkinson, II, 72-84.

80. The New England Farmer, p. 47; Langdon, p. 297; Bidwell, p. 123.

his own team. He is therefore able to see that he gives you sufficient room; which he could not do if you took the left side. Hence the law requires every carriage to go on the right."⁸¹

c. Dibble

It was a tool used by gardeners, in the shape of a forked stick, and was handy for setting plants.⁸²

d. Flail

Threshing grain on the barn floor was done with hand flails. A flail consisted of a wooden handle with a stronger and shorter stick at the end which could be swung freely. Its main parts were called handstaff, the swiple or flyer, the caps or caplins, the string or band. "The grain wasted by the use of the flail is beyond belief," expressed a writer-farmer of the period.⁸³

e. Harrows

Besides the plow, harrows were practically the only other implements to which animal power was applied. Harrows with wooden and iron teeth were used for pulverizing and leveling plowed land, for covering seed, and for weeding between the rows of Indian corn. In New England, two kinds of harrow were in use, square and triangular, or bifurcate, the former for old and

81. Dwight, IV, 259.

82. The New England Farmer, p. 79.

83. Parkinson, I, 43; The New England Farmer, p. 112; Langdon, p. 285.

clear grounds and the latter where stumps and other obstacles were numerous.⁸⁴ The square harrow was

armed with sixteen, or with twenty five tushes, or teeth. The sharper these teeth are, the more they will pulverize the soil. If they be steeled at the points, they will hold their sharpness the longer, and stir the ground more effectually. And the cost of doing it is so little, that it is surprising to see that it is so generally neglected by our farmers.⁸⁵

These iron-toothed drags or harrows were usually constructed with two timbers five or six inches in diameter and six to eight feet long, perforated with square holes eight to ten inches apart into which were inserted the teeth. The timbers were joined together in the form of a letter A. Sometimes the spreader or cross piece was also fitted with teeth to scratch the interval missed by the teeth in the wings. Such a harrow was especially good for working in areas with stumps. Often a small branching tree was dragged over the ground to cover the seed after it was sown.⁸⁶

f. Hatchel

This was an instrument sometimes called a comb, full of long iron pins or steel teeth, with which flax and hemp were combed.⁸⁷

84. Bidwell, pp. 124-25.

85. The New England Farmer, pp. 241-42.

86. Carrier, p. 265.

87. The New England Farmer, pp. 146-47.

g. Hayhook

It was a sharp pointed tool to pull hay out of a mow, or stack; often was made of wood, but of iron also.⁸⁸

h. Pickaxe

An instrument useful in sinking wells, digging trenches, ditches, etc.⁸⁹

i. Plow

It was the most important tool used in husbandry. Farm owners and planters recognized that "much of the comfort of the labourer, as much as the profit of the farmer, depends upon the good structure of it."⁹⁰ Plows were cumbersome affairs consisting of a large wooden beam on the upper side of the tail of which were inserted two crooked sticks to serve as handles for guiding. Underneath was one or more coulters of metal for cutting through the soil; then came the body of the plow with a wooden moldboard and a landside. Plows were strengthened with metal strips whenever iron was available in sufficient abundance to allow its use for such purposes. In most cases the metal parts, coulters and shares, were all that were imported the rest being constructed in the towns.⁹¹

88. Ibid., p. 147.

89. Ibid., p. 204.

90. Ibid., p. 258.

91. Carrier, pp. 263-64.

Farmers were poorly equipped for the important job of plowing. Wooden plows were not heavy, but the friction was excessive and the drawbar pull was great; the iron plating was rough and uneven.

The share and mould-board were so attached as to make too blunt a wedge. Its action was not uniform, and it was difficult to hold, requiring constant watchfulness and great strength to prevent it from being thrown out of the ground. To plough to any considerable depth it was necessary to have a man at the beam to bear down.

Two men with two or three horses or four to six oxen could only scratch over one or two acres a day. Lighter plows were used sometimes for cultivating between the rows of Indian corn.⁹²

j. Prong hoe

This was a hoe with several prongs instead of a blade. It was useful in taking up strong-rooted weeds, and opening grounds that were crusted or had become too compact.⁹³

K. Rack

A rack was a simple frame to hold fodder for cattle, "to prevent their trampling it under foot, and wasting it."⁹⁴

l. Rollers

They consisted of a log cut from the trunk of a large, well-shaped tree, drawn by means of a frame attached to pins

92. Charles L. Flint, A Hundred Years' Progress of American Agriculture (Maine, 1874), pp. 111, 119.

93. The New England Farmer, p. 275.

94. Ibid., p. 277.

inserted in the ends of the log. They were in common use to crush clods and to compact the soil.⁹⁵

m. Shovels

Shovels were made of wood with the edges shod with iron.⁹⁶

n. Sled, or sledge

A sled was a carriage without wheels, used chiefly to convey loads when the ground was covered with snow. Both planks and framed sleds were used. Their common length was eight or nine feet; but longer ones were better for carrying boards and long timber.⁹⁷

o. Spade

This was an instrument used in digging. Spades differed in their shape and construction, according to the different operations in which they were to be used.

p. Swath rake⁹⁸

A rake of this type was about two yards long, with iron teeth, and a bearer in the middle, for raising hay.⁹⁹

q. Scythe

The scythe was one of the primitive hand instruments

95. Carrier, p. 267; The New England Farmer, p. 280.

96. Bidwell, p. 123.

97. The New England Farmer, pp. 298-99.

98. Ibid., p. 312.

99. Ibid., p. 331.

still used for cutting grass, reaping wheat, and sometimes other small grains. Harvesting was very slow. A reaper or mower would not average more than three-fourths of an acre a day; in cradling grain 2 or 2½ acres was considered a day's work.¹⁰⁰

r. Horse-hoes and drill ploughs

Horse-drawn surface cultivators, known as horse-hoes, were quite generally used in England in the 1770s, but the farmers of the American colonies had not shown interest in them. A horse-hoe was an implement used between rows of plants, instead of a plow. It was a combination of a plow and a harrow. Another English innovation was the drill plough, a machine used for planting corn and other seeds in rows. It made channels or furrows, dropped the seeds, and covered them with earth, all at the same time. Somewhat in use late in the century, drill ploughs were too costly, very difficult to procure, and did not work too well. Early in the next century, however, horse-hoes and drill ploughs were recognized as great contributions to scientific farming.¹⁰¹

100. Ibid., p. 298; Bidwell, pp. 125-26.

101. American Husbandry, I, 51; Young, p. 314; Spurrier, pp. 256-59; Bowler, pp. 43-47.

s. Flax-break

This was such a simple and crude implement that it is almost impossible to describe or make sense out of a description:

It was a heavy log of wood about five feet long, either large enough so the flat top was about three feet from the ground, or set on heavy logs to bring it to that height. A portion of the top was cut down leaving a block at each end, and several long slats were set in lengthwise and held firm at each end with edges up, by being set into the end blocks. Then a similar set of slats, put in a heavy frame, was made with the slats set far enough apart to go into the spaces of the lower slats. The flax was laid on the lower slats, the frame and upper slats placed on it, and then pounded down with a heavy wooden mallet weighing many pounds. Sometimes the upper frame of slats, or knives as they were called, were hinged to the big under log at one end, and heavily weighed at the other, and thus the blow was given by the fall of the weight, not by the force of the farmer's muscle.¹⁰²

LIVESTOCK

1. General management

Neat cattle, horses, swine, sheep, and poultry were kept in all farms. Livestock was raised to furnish motive power for ploughing and hauling as well as to provide meat and dairy products. Beef was salted down chiefly for home consumption. In general, farmers showed little regard for the care of livestock,

102. Earle, pp. 169-71.

advancing not too much over the early settlers. There was a lack of adequate winter shelter, of suitable balanced winter ration, and of selection in breeding. These resulted in small, semi-starved, ill-formed and unproductive animals. Only at the end of the century were there some improvements by importation of cattle, sheep, and horses.¹⁰³

Kalm, a mid-century traveler, condemned the care and management of livestock in the following terms:

All the cattle has been originally brought over from Europe. The natives have never had any, and at present few of them care to get any. But the cattle degenerates by degrees here, and becomes smaller. For the cows, horses, sheep, and hogs, are all larger in England, though those which are brought over are of that breed. But the first generation decreases a little, and the third and fourth is of the same size with the cattle already common here. The climate, the soil, and the food, all together contribute their share toward producing this change.¹⁰⁴

2. Valuations

Judging by the ownership of livestock in Concord, there seems not to have been much difference between rich and poor. A detailed listing of taxes in pounds, shillings, and pence, dated 1771, illustrates a rather uniform distribution.

103. Bidwell, p. 107.

104. Per Kalm, Travels in North America (3 vols. Warrington and London, 1770-1771), I, 102.

<u>Person</u>	<u>Taxes</u>	<u>Horses</u>	<u>Oxen</u>	<u>Cows</u>	<u>Sheep</u>	<u>Swine</u>
John Flint	6-13-4	1	2	5	10	2
John Buttrick	7-10-0	1	2	9	11	2
Ephraim Buttrick	5-6-8	0	0	0	0	0
Willard Buttrick	-	-	-	2	3	1
Capt. David Brown	9-6-0	1	4	7	9	2
Jonas Bateman	7-13-4	1	2	4	0	1
Deacon S. Hunt	8-10-0	-	2	5	-	1
Reuben Hunt	8-10-0	1	2	5	-	1
Capt. Thomas Jones	6-13-4	-	2	4	-	2
Elisa Jones	6-13-4	1	-	4	-	2 ¹⁰⁵

In the 1771 valuations of personal property for Concord, the only articles mentioned are horses, oxen, cows, sheep, swine, slaves, and "faculty." After the Revolution, new state valuations were taken and various articles of personal property were required to be enumerated and described, not however uniformly alike. From the valuations of 1771, 1781, 1791, and 1801, the following number and classes of livestock are summarized:

	<u>1771</u>	<u>1781</u>	<u>1791</u>	<u>1801</u>
Horses	216	137	146	182
Oxen	422	324	288	374
Cows	951	916	775	934
Sheep	706	---	---	---
Swine	375	137	308	290

From the figures, the large number of oxen over horses and the large number of cows are obvious. Both oxen and cows were in great demand. During the Revolution, Concord and the nearby towns felt the pressure of providing beef and other supplies for the fighting men. From October 1780 to July of the following year, Concord alone furnished 42,779 pounds of beef for the army.¹⁰⁶

105. Concord Tax Records.

106. Ibid.

In the 1774 Lincoln real estate tax list, the farmers paying between 70 and 80 pounds tax all had 10 cows or more and a large number of oxen. Both cows and oxen were taxed two pounds apiece, indicating that they were of considerable value in that year. The farms taxed above 70 pounds for real estate must have been considered wealthy farms.

According to a valuation taken in 1784, there were then 143 polls, of which 26 were not rateable; there was the following livestock:

Horses	105
Oxen	155
Neat cattle	226
Sheep	155
Swine	136
Cows	378

Other interesting appraised property in Lincoln was:

Dwelling-houses	88
Barns	84
Tan-yards	1
Grist-mills	1
Other buildings	21 ¹⁰⁷

3. Horses

Horses were chiefly for riding, but after the 1750s their number and value increased. They were used alone for light tasks, such as cultivating corn and harrowing; for heavier work they were used together with oxen. During the Revolution, saddle and harness horses were very useful. It was common for

107. Lincoln Tax Records.

a man of moderate means to keep a mare so her increase would somewhat pay for her upkeep. Breeding of horses was carried on rather generally. In southern New England, horse raising was as important as sheep and cattle raising.¹⁰⁸ In spite of the horses' usefulness, oxen were more numerous, as may be seen from the following summary of valuation returns, showing horses and oxen in three counties of Massachusetts in 1767 and 1781:¹⁰⁹

County	Horses, 3 years old and over		Oxen, 4 years old and over		Ratio, oxen to 100 horses	
	1767	1801	1767	1801	1767	1801
Middlesex	3,492	5,230	6,028	8,367	172	160
Norfolk	2,156	3,064	2,969	3,824	137	125
Essex	3,451	3,909	4,930	5,540	143	142
Summary	9,099	12,203	13,927	17,731	153	145

Horses were extremely expensive in the food they required, wear of their harness, shoeing, and because they were victims of many diseases that sometimes disabled them for life. They were great eaters and required the best hay and pastures. A small farm could hardly keep one.¹¹⁰

As marks or evidence of good breeding, the following traits were important: "a high neck, a full breast, a lively eye, a

108. Bidwell, p. 113; Langdon, pp. 288, 290.

109. Middlesex County Tax Records.

110. The Farmer's Letters to the People of England... (Dublin, 1768), pp. 166-67; Dabney, p. 54.

strong back, a stiff dock, full buttocks, ribs reaching near to the hips, well made hoofs, rather large, and a good gait."¹¹¹

4. Oxen

As draft animals, oxen were the chief reliance of New England farmers. In Massachusetts Bay the breed of cattle mostly imported was the Devonshire. Oxen were kept infinitely cheaper than horses. (Their harness and shoeing cost less, and they were less subject to illness.) If they grew too old to work, they were fit and ready for fattening. Their summer food, like that of horses, consisted of grass but without any hay or oats; in winter, good straw and turnips, or carrots.

It was a standard practice to shoe the oxen in order to meet hard surfaces and rocky grounds. This was a steady and difficult task done by using a "strong scaffold with a wide belly-band by which the ox was swung up off his feet." In shoeing an ox, eight small iron half-shoes had to be made and fastened to the hooves.¹¹²

The following were signs of a good ox:

Thick, soft, smooth, and short hair; a short and thick head; glossy, smooth horns; large and shaggy ears; wide forehead; full, black eyes; wide nostrils; black lips; a thick

111. The New England Farmer, p. 160.

112. Langdon, p. 286; The Farmer's Letters, pp. 166-67.

fleshy neck; and large shoulders; broad reins; a large belly; thick rump and thighs; a straight back; a long tail, well covered with hair; short and broad hoffs.¹¹³

5. Cows

According to the papers of the Massachusetts Society for Promoting Agriculture--1796-1799--cows were small, not well fed, and did not give too much milk; there was no breeding for milk cows. Their color and size, good or bad qualities, were hereditary. In a country like New England, the Society said, "the total neglect of this important care is shameful and unaccountable."¹¹⁴

Cows were raised either for the dairy or for the breed. Red cows were generally supposed to give the best milk and the black ones to produce the best calves.¹¹⁵

A sampling of tax records for Lincoln, Concord, and Lexington, for 1771, shows the following relationship between cows, pasture and number of owners:¹¹⁶

	<u>Lincoln</u>	<u>Concord</u>	<u>Lexington</u>
No. of Persons	69	362	119
Total acres of Pasture	456	3,184	1,586
Average holding	6.6	8.7	13.3
Total cows	228	1,221	605
Average cow/acre	.60	.61	.43

113. The New England Farmer, p. 240.

114. Mass. Society for Promoting Agriculture, pp. 20-21.

115. Chambers' Dictionary.

116. Lexington Tax Records.

To farming experts, the marks of a good cow were: "The forehead broad, the eyes black, the horns black and clear, the neck long and straight, the belly large and deep, the thighs thick, the legs round with short joints, and the feet broad and thick."¹¹⁷

6. Swine

Each farmer raised swine which were fed in summer on the dairy and kitchen waste. He fattened several hogs to supply his family with salt pork, an essential article of its diet, and also probably some that he could export in a joint shipment with his neighbors. This export of salt pork in barrels became a considerable item during the eighteenth century. In winter the swine were turned out into the forest:

As soon as the acorns, beech-nuts, etc. begin to fall, they are driven to the woods, in large herds, to feed on them. The delicacy, taste and nutrition of these nuts are particularly suited to the palate of these animals, so that in a short time they grow to a great size. The hog prefers the beech-nut to any other, and the effect of that preference is visible in growth and fat, hence a good beech-nut year, may be called a good swine year.¹¹⁸

117. The New England Farmer, p. 72.

118. Ira Allen, Natural and Political History of the State of Vermont (London, 1798), p. 483; Langdon, p. 284; The New England Farmer, pp. 331-37.

7. Sheep

In the late eighteenth century, the breed of sheep was improved in England by the selection of the best native sheep as breeders, by the mode of feeding them, and by the importation of foreign sheep. Few attempts were made in Massachusetts to improve the breed of sheep. Lincolnshire Rams were imported, but these were ill-flavored, not very healthy, and ill-adapted to the short sweet food of the hills. During the Revolution, domestic sheep in the Concord area were scarce and inferior, and grew ragged for want of men to shear them. "When meat was needed, Concord slaughtered its sheep, and looms for homespun wool stood idle."¹¹⁹

In general, sheep were raised in New England as part of the self-sufficient farm economy, and not as a business. They produced wool for the manufacture of homespun textiles and not for sale.

Wool and not mutton was the object of sheep-raising. The meat could not be successfully preserved by salting or smoking, and consequently there was no export market. The farmers did not like the taste of fresh lamb or mutton, probably because of their own negligence in slaughtering. The typical sheep of the period were small, long-legged, narrow in the breast and back, and also slow at arriving at maturity. They may have

119. "Rules and Regulations," Massachusetts Society for Promoting Agriculture (Boston, 1796-1799), pp. 19-20; Townsend Scudder, Concord: American Town (Boston, 1947), p. 124; Parkinson, I, 140-82.

stood 2½ feet high and weighed when dressed from 10 to 15 pounds per quarter, or in exceptional cases 20 pounds. They yielded on the average from 2 to 3 pounds of coarse, short-staple wool at a shearing.¹²⁰

8. Goats

Goats were also commonly found on farms. They were hardy and not subject to many diseases. The cost of feeding them was next to nothing, as they preferred moss, leaves, twigs, and tree barks to all other food. The kids were excellent for the table; the old ones were filled with tallow of an excellent quality. Their milk was extremely nourishing, good to mix with cow's milk in cheese, and "an excellent restorative, highly valued in consumptive cases."¹²¹

GRAZING PASTURES

1. Haying

According to the farmer's language, pastures were lands in grass, for the summer feeding of cattle. Pastures were fenced in lots, the sizes of which depended on the sizes of the farms and the stock. Hay was the name for all sorts of grass or plants found in pastures and used in feeding cattle, both in their green and dry state. The most common types of hay were red clover, bird grass, herd grass, red top, or what was called English grass, honeysuckle, or white clover, and wire grass.¹²²

120. Bidwell, p. 110.

121. The New England Farmer, p. 133.

122. The New England Farmer, pp. 245-47.

In winter, cattle fed sometimes on cornstalks, rye straw, and other small grains. Haying in those days of hand mowing was a many days' war in which the farmer was pitted against heat and rain.¹²³

There were two kinds of pasture grounds. Low meadow land was often overflowed, while the upland was high and dry. The first produced a greater quantity of hay and did not require manuring or "dressing" so often. But the hay produced on the upland was much more preferable.¹²⁴

Concord farmers owned pastures in New Ipswich, Ashburnham, Westminster, Templeton, and Holden, sometimes adjacent to farms owned by sons and cousins. Every May the dry cows and young stock were assembled and driven over the road to summer pasture. The men and boys made the drive on foot or on horseback and as roads improved a carriage went along to hold the owner and a youngster who needed a rest. Farmers on the way would rent a fenced field for a small fee to hold the stock at night, and would allow the boys to sleep rolled up in blankets in a barn. Sometimes a brother or cousin would own a farm near the summer pasture and could keep an eye on the herd. Dogs now proved their worth. Reciprocally, Concord farmers had fenced yards to hold overnight up-country cows being driven to market."¹²⁵

2. Valuations--land use

From Lincoln, Concord, and Lexington's tax records of 1771, the following averages and estimates of pastures

123. Langdon, p. 281.
124. Carrier, p. 146; The Gardeners' Dictionary.
125. Wheeler, p. 40.

were derived on the basis of number of polls:

	<u>Lincoln</u>	<u>Concord</u>	<u>Lexington</u>
No. of Persons	42	214	138
Total acreage fresh meadow hay	285	2,229	1,181½
Average holding	6.78	10.42	8.56
Total tons of hay	214	1,605	749½

For valuation purposes, pastures were listed as fresh meadow hay, upland and English hay, English mowing, etc., with the differences in these terms not clearly defined. English mowing is listed in 34 farms, and on the average .46 is the estimated hay in tons per acre; the maximum produce is one ton per acre, and the minimum one-seventh of a ton. Fresh mowing is listed on 29 farms, out of 47 possible entries. This latter is the rarest type of pasture land. When it appears, however, it averages 4-1/3 acres per farm, which is considerably more than the English mowing. A larger crop was harvested from an acre of fresh mowing than from one of English mowing.

The maximum acreage of pasture as shown on the list is 12 acres, owned by John and George Adams (taxed together), Phillip Rusell Jr. and Mathew Mead. These men have the most valuable total real estate in this range also; however, according to the assessors, this pastureland is not as good as other pastures in terms of the number of cows that could graze on the land. In the 12-acre pastures, three and four cows could graze the land, but other pastures of only four and

seven acres could graze the same number of cows--that is, three and four.

In 32 entries, $2\frac{1}{2}$ acres of pasture was the appropriate average amount of land per cow. However, in some fields as many as six acres were needed for one cow, while in others one acre was sufficient. The farms with more than six acres of pasture generally were those that could not feed one cow on less than three acres.¹²⁶

A valuation of 1784, for Lincoln, was as follows:

No. of polls	143
English mowing	429 acres
Meadow	800 acres
Pasturing	1,502 acres

In 1801, hay sources and yield in the Middlesex County was the following:

	<u>Acres</u>	<u>% of acreage</u>	<u>Tons</u>	<u>Tons per acre</u>
Total hay crop	70,920	100	50,156	.71
English upland	30,737	43.3	21,061	.69
Fresh meadow	37,691	53.2	26,902	.71
Salt marsh	2,492	3.5	2,193	.88

Of the three types of grass, English upland was a cultivated or imported type.¹²⁷

LIVESTOCK DISEASES

Colonial farmers were quite often plagued by numerous diseases that affected the raising and usefulness of their

126. Lincoln, Concord, and Lexington Tax Records.

127. Lincoln Tax Records; Middlesex valuation records.

livestock. Horses were the most susceptible to illness and this was one of the reasons why there were, usually, more oxen than horses on a farm. Only the most commonly known diseases are described below.¹²⁸

a. Anticor

This was a "swelling in the gullet and throat of a horse, and is the same which in man is called angina." Like many other diseases associated with horses, anticor was caused by hard riding, exposing a horse to cold weather, giving him coldwater to drink when he was hot, full feeding "and whatever else may cause a stagnation of the blood." A fever was the best sign of this disorder.

b. Elfshot

A skin disease typical of horned cattle; the symptoms were sluggishness and loss of appetite.

c. Farcy

A disease in horses similar to the scurvy in men, and "arising from a similar cause." In horses it was caused from their being confined to dry meal for a long time. "And as the scurvy in men is cured by a diet of green vegetables; so the farcy in horses may be cured by turning them into a good fresh pasture."

128. Livestock diseases are described in The New England Farmer; see also Gardeners' Dictionary, and Parkinson, I, 157-72.

d. Foundering

A very painful disease in the feet of horses. It was said to be caused by bruises on the legs, bad shoeing, standing in cold water after being heated with exercise; or even by standing still in the stable for several days.

e. Garget

A disease in cattle. "Cows sometimes have their udders greatly distended, and indurated, with this distemper; of which they will pine away and die, unless a remedy be speedily applied."

f. Gigs

These were little tumors or "bladers" in a horse's mouth.

g. Glanders

An often fatal disease in horses. "It is always accompanied with a copious discharge of mucus from the nostrils, and swelling of the glands under the throat and tongue."

9-1 Grease

A swelling and "gourdiness of the legs of horses, which frequently happens to them after a journey."

h. Green scouring

This was a disease or distemper that affected sheep and bullocks.

i. Gripes

Gripings were choleric pains suffered by horses.

j. Hide Bound

A distemper into which horses fell when they were poorly fed and neglected.

k. Horn distemper

This was a disease of neat cattle, and affected the horns. Cows were more subject to them than oxen; it did not attack bulls. The distemper gradually consumed the pitch of the horn.

l. Malanders

A horse disease caused by "corrupt blood, or over hard labour. Consists of chops, or cracks, on the inside of the fore legs against the knee."

m. Lampas

This disease was common among young horses; it was "an excrescence in the roof of the mouth, which hinders a horse from feeding."

n. Measles

A disease in swine; "eyes are red and inflamed, and the skin rises in pimples, and runs into scabs."

o. Spavin

A horse disease that consisted of swelling in the joints; it caused lameness.

p. Strangles

It was "a swelling under the throat of a horse, between the two jaw bones."

q. String halt

It was a kind of lameness peculiar to the "hind quarters of a horse," and which caused a sudden jerking of the legs while walking.

r. Surfeit

This disease affected neat cattle and horses. It was produced by various causes, among them, intense labor, overheating, and from diseases not well cured.

s. Tail sickness

It was a distemper that caused weakness and sluggishness, to which horned cattle was susceptible in the spring.

THE COLONIAL FARMER

1. Jacks-of-all-trades

A colonial farmer was the most independent person in the world in the sense that he and his family could raise about every article for their own consumption. Food, clothing, house furnishings, farm implements, in fact practically everything they needed could be produced by the farm family. This self-sufficiency was a striking and important characteristic of the colonial farm.

A farmer and his family were truly jacks-of-all-trades:

From his feet to his head the farmer stood in vestment produced on his own farm. The leather of his shoes came from the hides of his own cattle. The linen and woolen that he wore

were products that he raised. The farmer's wife or daughter braided and sewed the straw hat on his head. His fur cap was made from the skin of a fox he shot. The feathers of wild fowl in the bed whereon he rested his weary frame at night, were the results acquired in his shooting. The pillow-cases, sheet and blankets, the comfortables, quilts and counterpanes, the towels and table cloth, were home made. His harness and lines he cut from hides grown on his farm. Everything about his ox yoke except staple and ring he made. His whip, his ox gad, his flail, axe, hoe, and fork-handle, were his own work.¹²⁹

How little they bought, and how much they managed to manufacture at home, is certainly astonishing.

A surprising amount of food was produced in the farm, judging by the daily diet:

The ordinary food of the farmer's family, though abundant, was of the simplest, demanding the sauce of good appetite and sound digestive powers. Tables 'groaned,' but chiefly under the weight of 'bean porridge, hot, bean porridge, cold, ' brown bread, hominy or hasty-pudding and milk, pork, salt beef boiled, salt and fresh fish, succotash and the commonest vegetables in their season. Molasses and honey sufficed for sweetening, sugar being costly, and rarely used except in sickness or in entertaining guests. The top shelf at the village store held a row of white cones wrapped in purple paper. One of these 'loaves,' weighing eight or ten pounds, was about a year's supply of sugar to the ordinary family. The paper wrap was carefully saved and utilized in the dyeing of yarn.¹³⁰

129. Henry P. Hedges, Development of Agriculture in Suffolk County (New York, 1885), p. 42.

130. Henry S. Nourse, History of Harvard, Massachusetts (Harvard, 1894), p. 100.

Salt, molasses, rum, tea, and coffee were practically the only articles on the farmers' tables which were not home made.

Once in a while, and on special occasions, a lamb was killed, and in the fall, at the end of harvest, chicken and turkeys were offered in Thanksgiving; the killing of the fatted calf had great significance, but the basic dish for every day was fried salt pork, or boiled dish. Bread and milk were the universal food for children.

As for drink, everybody drank cider, "and the constant use of it increased their capacity for it in a wonderful degree." It was the common drink at meal times as well as between meals, "and probably the quantity of hard cider, drunk daily by many of them, would make any man today boozy for a week."¹³¹

Every farm had its dairy where milk was kept in pans. Butter and cheese were prepared in all farms; butter was made with a hand churn, and was heavily salted due to lack of refrigeration. This type of home industry usually fell to the women on the farm.

For the grinding of the grain, whether it was the maize into corn meal or wheat into white flour, the grist mill came with the miller. It was one of the specialized occupations, one mill usually serving an entire neighborhood rather than one of the home industries.¹³²

131. Tolman, pp. 11-12.

132. Langdon, pp. 287-92.

2. Hunt and Brooks' wills

In their wills, some of the detailed provisions made by farmers for their wives depict and summarize some elements of self-sufficient farming. Simon Hunt, a wealthy farmer and deacon of the town of Concord, bought and sold considerable real estate in Lexington Road and in the town's grant of Acton. He owned a pew in Acton and another in Concord. His will, dated 1786, provided a house for his wife, with the use of a well and a convenient garden of roots and herbs.

Also, a sufficiency of firewood cut fit for her fire and brought to the door of her house, also one hundred and twenty five pounds of good pork, one hundred weight of good beef, and fifteen bushels of grain, seven of Indian corn, seven of rye, and one of wheat. Also one bushel of malt, two barrels of cyder, two barrels of good winter apples, six pounds of flax, and six pounds of candles, and a sufficiency of sauce summer and winter or the year round. Also two of my cows such as she shall like best well-kept both winter and summer to be drove to and from pasture, at the season of pasturing; which cows are to be kept good or repaired by my executor...as long as she is able to improve the same. Also the privilege of an Horse to ride to meeting or elsewhere as she shall see meet. And a seat in my pew in Concord meeting house, also the sum of one pound four shillings yearly.¹³³

Job Brooks was a farmer with extensive land holdings in Concord, Littleton, Lincoln, Bedford, and Acton. His will,

133. Middlesex Probate # 12,280.

dated 1791, provided the following annual allotment for his wife as long as she remained a widow:

...ten bushels of Indian corn, and ten bushels of Rie, such part thereof ground into meal as she pleases-two bushels of Malt, four Barrels of Cyder, one hundred pounds of Pork, eighty pounds of Beef well fattened, and ten pounds of good flax, and a sufficient quantity of sauce every kind at all seasons of the years as she shall judge necessary for her, and provide a sufficiency of fire wood cut for the fire and carried into her house at all seasons of the year... and to keep two cows and a horse in the farm I now live upon summer and winter for her use... and further my will is that my beloved wife Anna Brooks shall have all my household furniture (the eight day clock excepted) and plate, all monies due to me on Bonds, notes on hand or otherwise that I shall die possessed of, and two cows out of my stock of cattle, and my horse and all my house furniture, for her sole use forever to dispose of as she pleases if done in her life time, otherwise to be disposed of as hereafter provided in this my will.¹³⁴

Not all farmers were well off like Hunt and Brooks. In subsistence farming of the period many small land owners barely made a living and were forced to work part time in other trades. They were self-sufficient as to food and shelter, but the need for making some extra cash is suggested by the numerous occupations or trades listed in deeds: blacksmith, butcher, carpenter, currier, malt maker, miller, teacher, and other sorts of jobs.¹³⁵ Some farmers made good money selling land; others sold lumber

134. Probate # 2,842.

135. Town Records, II, 281 B, III, 16 a.

and firewood in Boston, in spite of a long day trip, or carried onions and root-vegetables to market in saddlebags on a horse. They figured their taxes "at four shillings per man per day, or eight shillings per day for a man and a pair of oxen for road work." The ministerial tax they could pay in produce.¹³⁶ The old custom of working from house to house, or "whipping the cat," as it was called, had not entirely disappeared.¹³⁷

3. Farmers' associations

But there were better days in store for the colonial farmer. Great progress was being made lately in Europe through farmers' associations that encouraged exchange of information and useful experiments in all phases of husbandry. With the same view or purpose in mind, the "Massachusetts Society for Promoting Agriculture" was formed in Boston, in 1792. The Society considered itself the medium, or "organ of communication to the public of such agricultural knowledge that was scattered through the state." Through its members, at least, information was disseminated about the advantages of crop rotation and the astonishing improvements which some of the English farmers had made in their breed of cattle. Connected with this part of husbandry was information about the preparation

136. Wheeler, pp. 75-76.

137. Tolman, p. 17.

of butter and cheese; also the hazards of deforestation, diseases that attacked fruit trees, grain crops, livestock, and the like. Prizes in cash were offered for the results of improvement experiments on any phase of agriculture.

In 1793 the Society had 236 members, of which 34 were from Boston. Lincoln had two members -- Eleazer Brooks and Rev. Charles Steams; Charlestown had four members -- Capt. George Lane, Samuel Dexter, Joseph Barrell, and Salem Towne. Most of the members were from different parts of Massachusetts but several other states were represented.¹³⁸

On January 6, 1794, the members of the Society living on the western part of the County met at Chelmsford, and formed another society for the "promotion of useful improvements in agriculture." Later it was incorporated as "The Western Society of Middlesex Husbandmen." It did not include Concord, nor the other towns on the easterly part of the County.¹³⁹

138. Massachusetts Society for Promoting Agriculture, pp.5-7.

139. Shattuck, p. 231.

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