THE GEOGRAPHY OF MARLBORO TOWN, VERMONT.

by

ETHEL A. FRANK

A Thesis in Geography
Submitted to the Department of Geology and Geography in Partial Fulfillment of the Requirements for the Degree of Master of Arts.

Oberlin College
1931.
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PREFACE

The Objectives of Geographic Field Work.

A Definition of Geography.

Geography is the discovery and explanation of the relationships between the cultural and natural landscape. It "describes the varied expressions of the world's landscapes and interprets the relationships which exist between the various parts of the landscape." (1) "Thus broadly understood, landscape includes not only the climate, the vegetation, the oceans, etc., but also man and the works of man. The landscape is made up of a number of elements or forms, which may be grouped under two main headings: the natural forms and the cultural forms. The natural landscape, therefore, represents the condition of the earth before the coming of man; but the complete landscape, which we see today in all inhabited parts of the world, includes not only the natural forms, but also the cultural forms. This combination of natural and cultural forms is spoken of as the geographic complex." (2) The geographer, therefore, is interested primarily in the distributional differences of life, in man's works (culture) and their relationship to the natural environment.

(1) James and Hall, Elementary College Geography, p. ii
(2) Ibid, p. ii
Geography and Related Subjects.

When studying man's habitat and making interpretations, there seems to be a great danger of overlapping with physiography, climatology, botany, geology, meteorology, and sociology. This should not be. In interpreting the relations between man and a particular environment "geography would, of course, deal with the various elements of the complex — with land forms, soils, climates, vegetation, and so on through the familiar list. It would not, however, be the business of geography to explain the origin of these environmental features, nor their relations one to another, but to examine the response of man to them, considered individually and in combination." (5) As an example of what is meant here, let us consider physiography. We find that it is closely related to geography. The geographer is not interested, however, in the numerous physiographic agencies nor in the formation of various land forms, but he is concerned with man's response to these land forms. Again, climatology as a separate science has no part in geography, but it becomes a very important phase of geography when used to explain the actions of people.

The Changing Geographic Viewpoint.

Until recently there has been an over-emphasis of the physical cause of man's actions. The determinists, as those who favored this view were called, searched for the so-called

(5) Barrows, Harlan H. Geography as Human Ecology;

geographic influences, resolving to ascertain the great control exerted by the physical environment. It is true that geography should aim to make evident the relationship that continues between the natural and cultural landscapes, but this should be done from the viewpoint of man's adjustment to his environment, not from that of environmental influence. For example, it may be pointed out that lumbering is the chief industry in some region because of the abundance of woodland. The emphasis is placed upon the response, not upon the environment; this should always be the geographer's aim. On the contrary, a statement could be made as follows: because of the abundance of woodland, lumbering is the chief industry; but in this case the response takes a subordinate position while the natural environment becomes the dominant factor.

The disadvantage of the deterministic method is that many generalizations are made which have no quantitative bases. It became evident that exact data obtained with precise study and measurement is needed in making geographic interpretations. "American geographers have more fully appreciated the necessity for placing geographic studies upon a quantitative basis. Considerable attention has been focussed upon the technique of gathering and recording facts of habitat significance," and several outstanding contributions have been made as a result of geographic field conferences. (4,5,6)

As a result of this trend in geography, it was decided that this thesis should be a geographic study of Marlboro Vermont, where the Oberlin Geologic Survey Camp was to be located for seven weeks during the summer of 1930.

Before going to Vermont a general review was made of the technique that has been used in carrying on similar field work. The following papers were consulted in this preliminary survey:

In addition to these, a map showing the utilization of land in Montfort, Wisconsin, in its relation to conditions of slope, soil, drainage, and roads which was made by V.C. Finch, Reuel B. Frost, and B.H. Barrows proved very helpful, and the method of recording data as shown on this map was adapted in the study of Marlboro.
Then too, the general Farm Schedule of the Fifteenth Census of the United States (1930) which is issued by the Department of Commerce, Bureau of Census, was consulted, and various items which would be of value in making such a geographic survey were selected from this schedule.

An examination was made of The Post Route Map of the State of New Hampshire and Vermont, which shows the postoffices and mail routes in operation on the first of August 1929. This map is issued by the Post Office Department of the United States.

The New England Section of Climatological Data, United States Department of Agriculture, Weather Bureau, was another source of material. It indicates the temperature, precipitation, wind direction, and growing season of the New England States. (See Figs 7, 8.)

The 1930 United States Census material has proven to be quite valuable, and given the following data: the number and distribution of inhabitants; the number of farms, farm acreage, and value of farm land and buildings, farm buildings, farmers' dwellings, and machinery by minor civil divisions, and the agricultural statistics by counties.

The Wilmington and Brattleboro, Vermont topographic sheets published by the United States Geological Survey were obtained and photostat enlargements of Marlboro Town were made. The scale of the original topographic maps is one mile to the inch, whereas the enlarged map is one-fourth of a mile to the
inch. In this way many more details could be plotted in the field. The enlarged maps were cut into thirty-two parts, each six by three and three-fourths inches, of convenient size for field note-book pages, and were pasted into two such note-books for field use. A grid was made on every one of these thirty-two sections by drawing parallel vertical and parallel horizontal lines, similar to those on graph paper. Each sheet was then indexed by placing the letters of the alphabet across the top and bottom of the maps, and by putting numbers along the sides. Thus in referring to a certain location the exact spot could be recorded by labeling it B 26, E 24 or whatever the situation might be.

In recording the data a system of fractions and digits was used, as suggested by the Wisconsin map referred to above, and similar to that formulated by several other geographers. The numerator of the fraction indicates the details of use of the area to which it refers, that is, to the cultural landscape, while the denominator represents the details of site, or the natural environment. The left hand digit of the numerator gives the major use type; the second digit, the specific crop or use type, and the third digit the condition of the crop. The left hand digit of the denominator records the slope of the land, the second digit the soil type, and the third, the condition of drainage. The outline given in Figure (1) shows the fractional system used in this study of the geography of Marlboro Town.
### Numerator

<table>
<thead>
<tr>
<th>Left hand digit Major Use Type</th>
<th>Second Digit Specific Crop or Use Type</th>
<th>Third Digit Condition of Crop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tilled Land</td>
<td>1. Corn</td>
<td>1. Good</td>
</tr>
<tr>
<td></td>
<td>2. Oats</td>
<td>2. Medium</td>
</tr>
<tr>
<td></td>
<td>3. Hay</td>
<td>3. Poor</td>
</tr>
<tr>
<td></td>
<td>4. Pasture</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Barley</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Peas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Beans</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Potatoes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9/0 Oats and Barley</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a Apple Orchard</td>
<td></td>
</tr>
<tr>
<td>Permanent Grass Land</td>
<td>1. Open Grass Pasture</td>
<td>1. Good</td>
</tr>
<tr>
<td></td>
<td>2. Pasture with Scattered Trees or Brush</td>
<td>2. Medium</td>
</tr>
<tr>
<td></td>
<td>3. Wooded Pasture</td>
<td>3. Poor</td>
</tr>
<tr>
<td></td>
<td>4. Permanent Grass Cut for Hay</td>
<td></td>
</tr>
<tr>
<td>Timber Land</td>
<td>1. Pastured</td>
<td>1. Good</td>
</tr>
<tr>
<td></td>
<td>2. Not Pastured</td>
<td>2. Medium</td>
</tr>
<tr>
<td>Idle Land</td>
<td>Capable of Use</td>
<td>3. Poor</td>
</tr>
</tbody>
</table>

### Denominator

<table>
<thead>
<tr>
<th>Left hand digit Slope of Land</th>
<th>Second Digit Soil Type</th>
<th>Condition of Drainage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 0° to 3°</td>
<td>1. Sand</td>
<td>1. Inadequate</td>
</tr>
<tr>
<td>2. Rolling 3° to 9°</td>
<td>2. Clay</td>
<td>2. Satisfactory</td>
</tr>
<tr>
<td>3. Rough 9° to 15°</td>
<td>3. Loam</td>
<td>3. Excessive</td>
</tr>
<tr>
<td>4. Steep Over 15°</td>
<td>4. Gravel</td>
<td>x Poor</td>
</tr>
<tr>
<td></td>
<td>Gravelly loam 3/4</td>
<td>xx Very Poor</td>
</tr>
<tr>
<td></td>
<td>Gravelly sand 3/4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rough stony land, many outcrops</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gravelly, sandy loam</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 1
As a result of this method it is possible to make a quantitative determination of "the degree of coincidence in distribution between (a) the various items or combinations of items of land utilization recorded, and (b) the various characteristics or combinations of characteristics of the land used." (7)

In addition to the data plotted on the maps further information was recorded in note-books, for example: the number of members in each household, the seasonal occupations of these members; their nationality; farm tenure, land owned, rented, managed; length of land tenure; architecture and condition of farmstead as an indication of farm prosperity or lack of prosperity; value of farmstead; the amount of crops sold; the number of domestic animals, that is sheep, (for wool or mutton), cattle, (dairy and beef) pigs, horses, mules, oxen, goats, and poultry; the number of acres in tilled land, pasture, woodland used as pasture, woodland not used as pasture; the dairy products, milk sold as whole milk, cream, butter and cheese; amount consumed at home; the number of pails used in their sugar bush; the amount of maple syrup and maple sugar made; the farms used as summer homes for city dwellers, their city residence, crops raised, if any; means of transportation used in coming and going from their summer home, the number of months of residence per year in Marlboro; markets and trading centers; frequency of

trips to trading centers; schools and churches; how the mail is handled, and future outlook.

From the Town Clerk the land values were obtained, as well as the general property grand list. A copy of the original plan of Marlboro as surveyed in 1762 was also secured from this source.

Several trips were made to the nearby trade centers, where inquiries were made at dairies, sawmills, general stores, etc. in order to secure information pertaining to the amount of lumber, butter, milk, maple syrup and sugar, etc. that is derived from Marlboro Town.

Then too, the Brattleboro library and the Windham County Farm Bureau were visited several times, in hopes of obtaining other information concerning the geography of this region.
ACKNOWLEDGMENTS.

It is with sincere gratitude that I thank Prof. Geo. D. Hubbard for his suggestions and the supervision given previous to our going to Vermont and while carrying on the actual field work. To Mr. R. B. Frost I feel greatly indebted for his valuable assistance and numerous constructive ideas which have been drawn upon freely in the preparation of this thesis.

I wish to thank all of the people of Marlboro Town, Vermont for the information which they so patiently and courteously gave and without which this thesis could not have been written. The tradespeople and town officials of Brattleboro, Wilmington, and other towns near Marlboro have also been of valuable assistance.

For use of pictures I am indebted to several members of our Oberlin Geologic Survey party of 1930 and to the following organizations:

National Geographic Magazine.
Snow Flyer Corporation, New Holstein, Wisc.
Penick and Ford Sales Co., Inc. New York, N.Y.

The government publications and other references listed in the bibliography have been very valuable sources of information.

Lastly I wish to thank Messrs. F. Foreman and A.A. Mathews for critically reading this thesis.
INTRODUCTION.

Green, forest-covered mountains and hills, winding valleys with farmhouses surrounded by boulder strewn hayfields, cattle scattered upon the rocky slopes and in woodland pastures, boulder laden streams - this is the picture which Marlboro Town, in Windham County, Vermont conveys to one who surveys its landscape from any hilltop site. It is a typical New England town, located in southeastern Vermont, in the midst of the Green Mountains.

Physiographically Marlboro Town is located in the "Appalachian Highland Division, in the New England Province, and the Green Mountain Section, which consists of linear ranges of old, subdued mountains", long and severely deformed, and now widely denuded, that have undergone elevation, glaciation, and dissection. (8) It may be called a partial peneplain with many monadnocks.

The surface has numerous glacial boulders with many rock outcrops where the glacier scraped off the soil and thus exposed the bedrock. In some places streams are just beginning their task of carving their way through the glacial drift, and, besides, several glacial lakes play an important part in the landscape.

Applying the symbols of Köppens' Climatic Provinces of the Earth, Marlboro has a Dfb type of climate, that is, a subarctic climate, with constant moisture, (enough rain or snow in all months), a mean temperature of less than 71.6°F for the warmest month, and greater than 50°F for more than four months of the year. (9) (See Figs. 7, 8)

Deciduous and coniferous forests form a predominant part of the present landscape, but were even more important when the first settlers came to Marlboro. Isolation, the key word to the entire situation in the pioneer days, severe hardships, ceaseless toil - these are what the settlers had to endure when they went into the wilderness. Slowly, but steadily they cleared patches of land, and because of isolation tried to supply all their own needs by raising a great variety of crops, in spite of the fact that many were ill-adjusted to the climatic conditions, as in the case of wheat and corn. Gradually as more and more settlers came, the rough edges of pioneer life were rounded off, the number of clearings increased, sawmills made use of the water power furnished by the streams, little factories were constructed along these streams, and Marlboro reached its zenith. This was followed by a slow decadence which continues until the present day. How interesting it is to see and trace the geographic influences of this town from its youth, through adolescence, its prime, and down through the present time, and to study the adjustments which have been made from time to time to the natural environment.

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Tall, gaunt, hard-working, rather quiet, but friendly and hospitable to strangers - this is the typical Vermont "Yankee". In spite of the fact that he has had a continual struggle to gain a livelihood from his rather inhospitable environment, still he loves these green forested mountains and hills. He is proud of living in the same house that was built by his grandparents, early settlers of Marlboro Town, and fondly relates some of the experiences which they had in the wilderness - their combat with a bear, and their implicit confidence in the health restoring herbs obtained in the forest in time of illness when death lurked very near. This Vermont "Yankee" toils from early dawn until late at night striving to win his meager livelihood from a farm with boulder-strewn fields, rock-exposed, steep-sloped pastures, and woodland. Self-sufficient, depending little upon others for his wants - these are qualities still evident in the typical Marlboro resident of today.
''In May 1762, the Surveyors found the Township in its natural state where the woodman's axe was unknown - a dark and dreary forest, heavily timbered with massive trees of hemlock, spruce, fir, beech, maple, birch, ash, elm, red oak, basswood, cherry, and some pine fit for the masts for the 'Royal Navy'.'' (10) There was not a single opening or a civilized inhabitant. From some specimens of Indian manufacture that were found, it is inferred that Marlboro was the hunting ground, if not the residence of the Indians, for the woods were stocked with wild game, such as bears, wolves, deer, moose, otter, beaver, and a variety of smaller animals, and the ponds had abundant trout. These were very favorable conditions for the aborigines, since they could thus obtain abundant food and also furs for clothing.
A Plan of Marlborough in the Province of New Hampshire laid out in May 1762 and all the Numbers marked at the West end of their respective lots by Joseph Allin Jun. Surveyor

Elipha Clapp
Brigman
Joel Strong
Timothy Parsons

Tenants

N 10° Et. By the Needle 1920 perch

<table>
<thead>
<tr>
<th>1</th>
<th>3</th>
<th>11</th>
<th>18</th>
<th>26</th>
<th>33</th>
<th>44</th>
<th>49</th>
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<tbody>
<tr>
<td>Noah Edwards</td>
<td>Caleb Sheldon</td>
<td>Charles Phelps</td>
<td>Robert Trail</td>
<td>Elipha Parsons</td>
<td>Edward Billings</td>
<td>Ben Abord</td>
<td>School Lot</td>
<td></td>
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<tr>
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<th>3</th>
<th>12</th>
<th>20</th>
<th>28</th>
<th>32</th>
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<th>60</th>
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<tbody>
<tr>
<td>Noah Clark</td>
<td>Supply Kingsley</td>
<td>Gid Clark</td>
<td>Aaron Kingsley</td>
<td>Jos. Allin Jr.</td>
<td>Elipha Dwight</td>
<td>Richard Webord</td>
<td>Increase Clark</td>
</tr>
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<th>21</th>
<th>29</th>
<th>37</th>
<th>45</th>
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</thead>
<tbody>
<tr>
<td>Jonathans Graves</td>
<td>Stephen Crowfoot</td>
<td>Samll Phelps</td>
<td>Noah Parsons Jr.</td>
<td>Jonathan Kingsley</td>
<td>First Minister</td>
<td>Bliphas Clapp</td>
<td>Timo. Daniel Lyman</td>
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<th>6</th>
<th>7</th>
<th>15</th>
<th>17</th>
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<th>40</th>
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</thead>
<tbody>
<tr>
<td>Major Wentworth</td>
<td>Ellis Huske</td>
<td>Job Strong</td>
<td>Nath Strong</td>
<td>Timo. Edwards</td>
<td>Joseph Brigman</td>
<td>Sam Mathers</td>
<td>Jonath Kingsley</td>
<td>Saml Kingsley</td>
<td>Salm Wellman</td>
</tr>
</tbody>
</table>

The line Between Brattleborough and Marlborough

N. B. S. Plan contains a Particular Plan of all the Rivers and Brooks of any bigness in the Township and Platted according to A & R. There are 66 acres all being done by order of Samuel Mather

Joseph Allin
Elipha Clapp

Protracted by a Scale of one inch and half to a mile

Fig. 2
MARLBORO TOWN IN ITS PIONEER DAYS.

Coarse fare, dreary homes, hard work, and self denial were very familiar to the first settlers of Marlboro in converting the thick, heavy-timbered forest of the Township to fruitful and productive fields.

"The first settlement was commenced in the spring of 1763, by Abel Stockwell and Francis Whitmore." So great was the isolation caused by the dense forests that these two families spent nearly a year in the settlement, and suffered many hardships before they became acquainted with each other, each supposing it was the first and only family in town, until one day the men, when out hunting, providentially met each other in the woods for the first time. (11)

The houses of these two families located about six miles apart were built of logs, for the surrounding forests offered abundant material for homes of this kind.

Communication was extremely difficult, and hazardous, due to the dense forests, and besides, the distance to any settlement was great. These early settlers had to endure many privations and suffer much with hunger as a result of this isolation. All of the grain or meal used by the Whitmore family was brought upon the husband's back and was carried from Colerain and Greenfield, -------------------------------

a distance of twenty or thirty miles, through the woods, whose density prevented any other means of transportation.

With much difficulty, due to the deep snows and cold which prevented the live stock from grazing in the pastures, the one settler kept a cow alive during the winter by gathering some wild grass in the preceding summer. Another winter he kept his oxen by means of a beaver meadow. In the early part of winter, before the fall of deep snow, he drove his oxen about five miles to the meadow, where he built a crude shelter for his animals and himself and took care of them until spring. (12) In such a heavily forested region, it was easier for him to take his oxen to the spot where food could be obtained than to bring the food to them.

To furnish water for the cattle, these pioneers melted snow in brass kettles, for it was less work than to clear a path to the usual watering place, because of the deep snows. The average snowfall is about 60 inches per year, but extremes of three and four feet are sometimes experienced during a single snowstorm. (15) (See Figs.7,8 )

In spite of the adverse circumstances caused by dense forests and rocky soils, agriculture was necessary to help provide food for the people, since the poor communication, due to the woods, made it extremely difficult to secure food from more distant

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sources. Frequently the first very meager agriculture carried on took place among the tree stumps, on land only partially cleared, or recently burned. With the strenuous work of clearing the virgin forest awaiting them, and with an over-abundance of timber on every side, the early settlers often resorted to fire as the most inexpensive and quickest means of preparing the area for the raising of crops or the pasturing of live stock.

In order to add meat to the family larder hunting became one of the winter occupations of these first inhabitants of Marlboro, for during the winter all agriculture was prohibited because of the cold and snow, but the surrounding forests offered abundant game, such as, the deer, beaver, fox, and bear. The fur of these animals served as an article of trade, since their great value and little bulk made it possible to use them in this region where poor communication limited the type of goods suitable for barter. Then, too, rough garments were fashioned, frequently to form some protection from the winter’s cold. (14)

None but the bold, hardy, determined spirits could be expected to encounter so forbidding an enterprise as Marlboro presented, and such was the character of these noble-hearted pioneers who are honored and revered as the early settlers. (15)

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(14) Newton, Rev. Ephraim H., The History of Marlborough, p.3.
With remarkable rapidity the geographic landscape of Marlboro was radically transformed as people came in greater numbers. In order to supply food, more clearings were made in the valleys, where the land was sufficiently level to enable them to use farm machinery, and where the soil was deeper and thus more favorable for agriculture.

Frame houses soon took the place of the cruder log cabins, inasmuch as lumber was still abundant and sawmills were made possible by the water power afforded by the several streams in the town. Frame barns were constructed, for the long, cold, winter months made it necessary to have a place in which the livestock and their food could be sheltered. At great inconvenience many of these early farmsteads were located on hilltops to insure a sort of watch tower advantage, since Indians frequently prowled through the forests which offered them favorable shelter.

The inhabitants of Marlboro were principally farmers, in order to furnish the domestic food supply. The labor expended in agriculture was enormous, for man had to clear more of the forests, pull out the stumps, and remove the glacial boulders and stones with which the soil was abundant. As the boulders were removed, they were not merely dumped into one corner of the field, but instead were used to build stone walls, foundations

(16) Newton, Rev. Ephraim H., The History of Marlborough, p. 37
(17) Ibid p. 59
for houses and barns, fireplaces, chimneys and doorsteps.

A great variety of crops were raised - hay, rye, wheat, oats, Indian corn, barley, and the usual varieties of garden and field vegetables - in spite of the fact that the comparative coolness, short growing season, and plentiful amount of rainfall were unfavorable for some of these crops, still they were planted to supply the domestic needs of every family, for isolation and poor communication, due to the forests, made it necessary for them to be independent of outside sources. Potatoes were very abundant because of the cool moist weather necessary for their growth. As a result, beef cattle were stall-fed with potatoes and meal, and sold to drovers. A blight affected the potatoes, however, and served to discourage their cultivation, which was a great disadvantage.

Numerous cattle were raised on every farm because there was much land that was too rocky and on too great a slope for cultivation, and consequently had to be left to pasture. "In summer the cattle had a wide range of pasture; in the winter they were furnished with stalls in stables convenient for their feeding and rest," inasmuch as the cold and deep snows prevented their grazing outside. (18)

Two classes of cattle were raised - the beef animals and the dairy or milk breeds. The dairy industry grew, for it was a means of increasing the income in a region with cool summers

(18) Newton, Rev. Ephraim H., The History of Marlborough p.54.
and rainfall sufficient for the growth of the succulent grass
and other forage required by cows giving profitable quantities
of milk. Milk was not the main dairy product, but instead,
butter and cheese were very important, for the bulk, weight,
and perishable nature of fresh milk, the difficulty of trans-
portation, and the distance to the markets made it unprofitable
and inconvenient to sell this product, while the butter and
cheese had a smaller bulk and greater value, and at the same
time was less perishable. Surplus milk was used advantageously,
for, "many hogs were fattened with boiled potatoes, milk and
meal, and carried to the Boston markets." (19)

Moreover, sheep were numerous, since pasture-land was
abundant, and every family needed wool for clothing, isolation
making it necessary for the women to spin and supply the family's
needs rather than buy cloth and garments from outside sources.

The forests furnished an untold quantity of mill logs
and building timber, some of which was sawed and manufactured
into varieties of lumber for home consumption, with a surplus
for exportation. Then, too, large quantities of wood for fuel
were cut, corded, and hauled to neighboring villages, where it
found a ready sale.

The gathering of sap from the rock maples was a
specialized form of forest culture, due to the abundance of
sugar maples in the woodlands and was a great advantage, for an

---------------------
every farm sufficient sap was furnished for making a full supply of maple sugar for domestic use. (20)

Hunting, too, was of considerable importance, for the woods were still the home of much wild animal life. Due to their considerable value and slight bulk, the furs were used for barter, by means of which the settler was able to obtain iron, steel, tools, groceries, and other necessities of life. (21)

There were three quarries where tallow was obtained in large quantities, some of which was sent to Boston and New York

(20) Newton, Rev. Ephraim H., The History of Marlborough, p. 55

The trees were "boxed" with an axe; beneath the box an incision was made with a tapping iron into the body of the tree, into which was driven a spout to carry the sap to a trough. The troughs were made principally of ash and basswood logs from twelve to eighteen inches in diameter, and about three feet long, halved in the center, and hollowed out with an axe. The sap was poured from these troughs into sap buckets, and carried by the aid of a sap yoke upon the shoulders to the place of boiling. This was prepared by making a fire against a large log, or rather between two large logs, over which were suspended from a long pole supported by a couple of crochets, the iron kettles in which the sap was boiled to a thick syrup. The syrup was taken home, clarified, and "sugared off". Often the snow was so deep and soft that the men would wear snow shoes while gathering sap. "How rude were the implements and how fatiguing the toil when compared with the modern improvements."

(21) Ibid p. 5
markets. This mining was not continued very long due to a depletion of the talc supply.

Some of the early settlers caught fish in great abundance. In the town there were two natural ponds of considerable size. Allen's Pond (the present North Pond) is situated in the northeast part of the town and is about one and a half miles long and three-fourths of a mile wide; South Pond, which is in the southeasterly section of the town, is of nearly the same dimensions. These ponds were originally well stocked with fish, which was very favorable, for with hook and line the settlers would obtain in a short time the salmon-colored mountain trout, weighing from one to two pounds each. The supply became exhausted, however, due to numerous anglers"(22)

Numerous sawmills were erected, for several streams, among which was a portion of the west branch of the West River, and also Whetstone Brook, furnished the necessary water power.(23) "Branches of the Green River also had their rise in Marlboro and furnished valuable mill seats," (24) The most valuable mill was one which obtained its water power from the stream issuing from South Pond.

A small chair factory was located in Marlboro for many years, inasmuch as the forests with their lumber supply, and the mill sites, made possible by the water power of the streams, aided

(22) Newton, Rev. Ephraim H., The History of Marlborough, pp 56-57
(23) Ibid pp.56-57
(24) Ibid p. 58.
this industry.

Marlboro also had its tannery. The customers brought hides, which were tanned and made into leather for domestic uses. Besides, the owners of this tannery "purchased stock of their own and manufactured leather for the accommodation of their patrons, and had a surplus for other markets." "The business was good and yielded a fair profit." (25) The numerous cattle which could be raised, due to the plentiful supply of grasslands, were naturally the source of the hides for this tannery. Besides they depended upon the forests for their tannin extract.

A starch factory, using the surplus potatoes of the countryside was constructed and did a successful business for a few years, but owing to the blight of the potato crop, went into disuse." (26)

Several asheries existed in town, for the manufacture of both pot and pearl ashes, which was made possible by the abundance of timber land in the region. "These factories created a demand for ashes which were carefully saved by the citizens and sold to their own advantage and to that of the purchaser." (27)

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(26) Ibid p. 58.
(27) Ibid p. 59. "Ashes were gathered where log heaps had been consumed in clearing new lands, and from domestic hearths, and manufactured into salts by boiling the lye to a consistency much resembling a coarse variety of maple sugar. This was then carried to the asheries which made a business of manufacturing potash for the Boston market."
About 1810 buildings were erected near the gate on the old turnpike, a mile east of the meeting house, and a distillery was started. Two other such distilleries were built later. The product of these plants was distilled alcohol made from potatoes, and received the common name of potato whiskey.
The town at that time "was famous for the crops of potatoes, both for their large quantity per acre and their excellent quality, some persons raising four hundred bushels or more to the acre,"(26) because of the cool, moist conditions and the short growing season, as well as to the ability of the potato to grow on a variety of soils.

"The mothers and their daughters spun and wove nearly or quite all of the cloth with which their families were clad. Flax was raised and spun upon a foot-wheel and manufactured into nice linen cloth." (29) "For many years wool was carded by hand and spun into cloth on a common hand loom. It was made into garments by the industry and ingenuity of the females," (30) for the difficulty of transportation hindered their obtaining cloth from sources outside their town. The flax plant has a very wide growing range and could be raised on the Marlboro farms. The wool was naturally obtained from the family's herds of sheep, supported by the abundant grasses.

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(26) Newton, Rev. Ephraim H., The History of Marlborough, p. 59
(30) Ibid. p. 59.
The blacksmith's shop offered another type of manufacturing common to early Marlboro. There all sorts of farm implements were made and sold. (31) Because of the great predominance of agriculture, for man needed farm tools, and the difficulty of transportation aided the local blacksmith, since his neighbors preferred to obtain the simple implements close at hand rather than making a trip to town.

(31) Newton, Rev. E.H., The History of Marlborough, p. 3.
Fig. 3
Marlboro Town, Vermont
Scale: 1 inch = 1 mile
Contour Interval: 20 feet
PRESENT POPULATION AND HOUSES.

Decadence - slow, ruinous, but apparently spreading - this is Marlboro's present status. The town attained its zenith about one hundred years ago, but how different is the landscape as seen today.

The present population of Marlboro Town is as follows:

<table>
<thead>
<tr>
<th>Marlboro Town</th>
<th>255</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>155</td>
</tr>
<tr>
<td>Female</td>
<td>102</td>
</tr>
<tr>
<td>Native White</td>
<td>249</td>
</tr>
<tr>
<td>Native parentage</td>
<td>235</td>
</tr>
<tr>
<td>Foreign or mixed parentage</td>
<td>14</td>
</tr>
<tr>
<td>Foreign born white</td>
<td>6</td>
</tr>
<tr>
<td>Negro</td>
<td>0</td>
</tr>
</tbody>
</table>

Age:

| Under 5      | 24  |
| 5 to 14      | 46  |
| 15 to 24     | 36  |
| 25 to 34     | 34  |
| 35 to 44     | 24  |
| 45 to 64     | 63  |
| 65 and over  | 26  |
| 21 and over (including unknown) | 162 |

Rural farm population .................................. 205 (32)

The density of population is a little more than six people per square mile, which shows a great contrast to the following densities of population:

| Most of Vermont | 18 to 45 persons per sq. mi. |
| Massachusetts   | 90 and over |
| Ohio            | 45 to 90 |

(32) Department of Commerce, Bureau of Census (1930)
These people are scattered throughout the town, but there is a very noticeable relation between the location of their homes and the streams and valleys. In fact the distribution pattern is remarkably dendritic. The valleys form the natural highways, for it is much easier to build roads there than over and on the mountain ridges.

A very outstanding predominance of native born inhabitants and people of native parentage prevails in this town, (92% and 96% respectively.) Most of the people are of English descent, and many are occupying the same dwelling that was constructed by their parents or grandparents when Marlboro was first settled. The heavy beams hewn from the nearby woodland have firmly withstood the climatic elements, and many will continue to do so for some time to come. This predominance of locally born residents is closely related to the somewhat isolated location of Marlboro, for they have not had as much contact with outside people as they would have had if better communication and transportation were available, and many have been content to carry on the work of their ancestors.

The following data is a part of the environmental conditions of the houses:

26% on No.1 slopes (Level to gently rolling topography)
74% on No.2 slopes (Intermediate gradients)

Elevation of houses:

<table>
<thead>
<tr>
<th></th>
<th>2% between 2000 and 2100 feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>2%</td>
<td>1900</td>
</tr>
<tr>
<td>6%</td>
<td>2000</td>
</tr>
<tr>
<td>21%</td>
<td>1800</td>
</tr>
<tr>
<td>6%</td>
<td>1900</td>
</tr>
<tr>
<td>21%</td>
<td>1700</td>
</tr>
<tr>
<td>6%</td>
<td>1700</td>
</tr>
</tbody>
</table>
19% between 1500 and 1600 feet
4% " 1100 " 1200 "
1% " 900 " 1000 "
6% " 800 " 900 "
6% " 700 " 800 "
4% " 600 " 700 "
2% " 400 " 500 "

12% on first class roads
78% " second " "
10% " third " "

The more gentle slopes are preferred for farmsteads, because the approach is easier, and besides they afford a better location for agriculture. Run-off and soil erosion are more rapid on steep gradients, and, furthermore, it is more difficult to use many of the necessary farm implements upon a steep gradient. 67% of the houses are at an elevation ranging between 1500 and 1900 feet, while 23% are below 1500 feet and only 8% above 1900 feet. An intermediate elevation is desirable, for in early fall and late spring the likelihood of injurious frosts is greater in the valleys than on the slopes.

In general, the upland hills, ridges and mountains are avoided by the farmers in selecting a site for the farmsteads, for it is on these areas that the soil is thin and rock outcrops numerous.

78% of the houses are on second class roads, and 12% on those ranked first class, inasmuch as somewhat easier means of transportation, and better communication with neighbors and nearby towns is possible as a result.
Fig. 4
A Typical Group of Connected Farm Buildings.

Fig. 5
House and Barns Connected.

Fig. 6
A House With Its Adjoining Barn.
All of the houses and farm buildings in Marlboro are wooden structures, owing to the abundance and ease of obtaining lumber from the nearby forests. The characteristic houses have a definite style of architecture; all of their farm buildings are connected (See Figs. 4-6) due directly to the heavy snowfalls, because in this way, man is not compelled to dig paths to the numerous barns in order to care for his cattle, obtain fuel from his wood-pile, etc., but instead he can go from one building to another without once stepping outside. Besides the roofs of all buildings are steep, in order to aid the snow in sliding off, and to prevent its accumulating in such quantities that the great weight would cause the roof to cave in.

The foundations of most of the houses consist of the local boulders and rocks. The same is true of the ever present stone walls. Very often flat slabs of stone form the material for door steps, walls and hearths. The over-abundance of boulders is due to glaciation, and before any agriculture could be carried on in the early days, the land had to be cleared to some extent, and the rocks thus collected were readily utilized. (See Figs. 9, 15, 16)

Each farmstead has several barns, (See Figs. 4-6) for the cattle must be sheltered in the winter, their food stored, and besides, man must provide himself with sufficient fuel to last throughout the cold months. There is a noticeable lack of silos in Marlboro, only a single farm having one of these structures, since merely a small amount of corn is raised in this part of the
country, for "corn cannot stand frost, but will mature if there
is a five months growing season, and a hot mid-summer with
sufficient rainfall to keep up the growth of the plant." (33)
Accordingly, Marlboro, which has a cool summer, cannot well
produce a crop of ripened corn. (See Figs.7,8)

The Type of Climatological Station Data.

<table>
<thead>
<tr>
<th>Mean Temperature (°F)</th>
<th>Williamstown, Mass.</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Length of Record (years)</td>
<td>18</td>
</tr>
<tr>
<td>January</td>
<td>22.5</td>
</tr>
<tr>
<td>February</td>
<td>21.4</td>
</tr>
<tr>
<td>March</td>
<td>32.3</td>
</tr>
<tr>
<td>April</td>
<td>43.9</td>
</tr>
<tr>
<td>May</td>
<td>55.6</td>
</tr>
<tr>
<td>June</td>
<td>63.5</td>
</tr>
<tr>
<td>July</td>
<td>68.6</td>
</tr>
<tr>
<td>August</td>
<td>66.2</td>
</tr>
<tr>
<td>September</td>
<td>59.2</td>
</tr>
<tr>
<td>October</td>
<td>49.6</td>
</tr>
<tr>
<td>November</td>
<td>37.1</td>
</tr>
<tr>
<td>December</td>
<td>25.8</td>
</tr>
<tr>
<td>Annual</td>
<td>45.4</td>
</tr>
</tbody>
</table>

| Mean Maximum Temperature | 30.7 |
| Mean Minimum Temperature | 14.3 |
| Highest Temperature | 35 |
| Lowest Temperature | -26 |
| Precipitation (inches) | 2.65 |
| Average No. of Days 0.01 inches or More Precipitation | 34 |
| Average Depth of Snowfall (inches) | 12.6 |
| Prevailing Wind Direction | 35 |

Cl climatological data for a weather station near Marlboro Town, Vermont.
<table>
<thead>
<tr>
<th>Stations Counties</th>
<th>Temperature (degrees Fahrenheit)</th>
<th>Precipitation (inches)</th>
<th>Sky</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Elevation, Year Length of record</td>
<td>Annual mean</td>
<td>Highest Date</td>
</tr>
<tr>
<td>Somerset, VT Windham</td>
<td>10 1921</td>
<td>46.5 99</td>
<td>June 16</td>
</tr>
<tr>
<td></td>
<td>11 1922</td>
<td>42.2 91</td>
<td>July 12</td>
</tr>
<tr>
<td></td>
<td>12 1923</td>
<td>38.3 86</td>
<td>June 23</td>
</tr>
<tr>
<td></td>
<td>13 1924</td>
<td>37.0 92</td>
<td>Aug. 27</td>
</tr>
<tr>
<td></td>
<td>14 1925</td>
<td>37.2 88</td>
<td>Aug. 28</td>
</tr>
<tr>
<td></td>
<td>15 1926</td>
<td>37.3 90</td>
<td>Jul. 25</td>
</tr>
<tr>
<td>Brattleboro</td>
<td>333 1927</td>
<td>47.4 99</td>
<td>June 14</td>
</tr>
<tr>
<td></td>
<td>31 1928</td>
<td>47.4 95</td>
<td>Aug. 8</td>
</tr>
<tr>
<td></td>
<td>32 1929</td>
<td>46.0 95</td>
<td>Sept. 16</td>
</tr>
</tbody>
</table>

Fig. 8

Climatological Data from Stations Near Marlboro.
Fig. 9
Boulders used as foundation for a Barn.

Fig. 10
A Farmhouse Located in a Valley

Fig. 11
The Most Prosperous and Well-kept Farmstead in Marlboro.
AGRICULTURE.

Agriculture is the main occupation of the people of Marlboro Town, in spite of the fact that the present agriculture is in a state of decadence, evidence of which is to be seen in the numerous abandoned farmsteads. The cropped land forms a dendritic pattern; (See Plate II) it follows the streams and their valleys, for the latter provide an increased depth of soil and level areas where it is not as difficult to use farm machinery. 50% of all the land is in farms, a "farm" for census purposes, being all the land which is directly farmed by one person, either by his own labor alone or with the assistance of members of his household or hired employees. Land operated by a partnership is likewise considered a farm." (34) The remaining 50% of the land consists of forests, summer home and camp sites, and waste land. 95% of the permanent residents of Marlboro are engaged in agriculture during the summer, when the climatic conditions permit agriculture, for there are more than four months with an average monthly temperature greater than 50°F., but it has a mean temperature of less than 71.6°F. for the warmest month, and a growing season averaging about 150 days. (35 and 36).

The average farm in Marlboro contains about two hundred

(34) U.S. Dep't of Commerce, Fifteenth Census of the U.S., 1930, Agriculture of Vermont by Minor Civil Divisions.


and fifty acres, while the size of the average farm in the United States is one hundred and forty-two acres, for so much of the Marlboro land is on steep slopes with many outcrops, which make it useless for cultivation, that the land is therefore very inexpensive, being worth only ten dollars an acre in some places. (37) Because of the small land value it is possible for the farmer to own a considerable amount of property, and inasmuch as so much of the land is unsuitable for cultivation, the farmer must possess a large quantity in order to gain a living.

The farmland is divided into the following uses:

17% .................. crops harvested.
1% .................. idle or fallow.
4% plowable pastureland
4% pastureland (3% pasture in woodland
3% all other.
3% .................. woodland not used for pasture.
3% .................. all other land in farms.

From the above data it is shown that 68% of the area in farms is forested and only 17% is "in crops," which is due largely to the many steep slopes unfavorable for cultivation, but suitable for woodland.

The following estimates based on acreage indicate the various crops harvested:

77% ............... hay
15% ............. vegetable gardens including potatoes.
3% ............... orchards
3% ............... corn
1% ............... oats
1% ............... all other crops.

(37) Crockett, W.H., Vermont, Its Resources and Opportunities.
Hay forms the chief crop, approximately 77% of the cropped land being devoted to its culture. (See Figs. 12 - 14) About 87% of the total amount is raised on No. 2, or intermediate slopes, 7% on No. 1, or level to gently rolling slopes, and only 1% on those ranked as No. 3, or the very steep slopes. The more gentle and intermediate gradients are preferable, for there is not as much soil erosion, due to rapid run-off, when such slopes are left to hay. Besides, it is much easier to use the mowing-machine, horse-rake, and hay-turner on the first two slopes mentioned above. The valley bottoms are left to gardens, for there the soil is deeper. The soil upon which hay grows varies a great deal; sand, loam, and gravelly loam are the predominating types, although the hay raised upon the rocky soils is quite limited and is not as good a quality as that in the loam and gravelly loam areas.

One of the factors related to the widespread importance of hay in this region, is the suitable climate. The cool, moist summers are very conducive to the growth of grasses, at the same time discouraging cereals. (See Figs. 7, 8) If a drought of several days duration occurs, the rapidity with which the hay becomes dry is especially noticeable. This is due to the thin soil. The glaciers scraped off the soil and consequently in numerous places the bed rock is exposed or is very near the surface, especially on the No. 2, or intermediate and No. 3, or steep slopes.

It is scarcely possible to call much of the hay in
Fig. 15
Houses, Barns, and Hay Fields in the Valley, and Located on Level Land and Intermediate Slopes, while the Steeper Slopes are Forested.

Fig. 16
Pastureland in the Foreground, Tilled Land on the Valley Floor and Intermediate Slopes, and Wooded Areas on the Steeper Gradients.
Marlboro a real crop, for in many localities, it is almost the only thing being grown on the half-deserted farms. For example, when a farmstead is abandoned, a neighbor frequently pays a small rental fee to obtain the privilege of cutting the hay on the old fields. Often he is allowed to cut it without having to pay, and in some places he even receives a small compensation from the owner for performing this task, for the hay becomes a fire hazard to the property when dry weather occurs. Sometimes while the owner is waiting to sell his land, he prefers that the fields should be mowed once a year to prevent their reverting to brush, brambles and woods. All of the hay is used locally as feed for the cattle. A dairy industry has grown up as a result. At haying time, almost every farmer hires additional help in order to get the hay into the barns before rain occurs. Barns with large hay mows are necessary for much hay must be stored to provide forage for the cattle, during the long cold winters, inasmuch as grazing in regions where there is a permanent snow cover is impossible. As a result of this predominance of hay, the most common implements owned by the Marlboro farmers are mowing machines, horse-rakes, and hay-turners.

Vegetable gardens - 99% of all farms have their vegetable gardens, in which potatoes, beets, beans, carrots, cabbage, peas, squash, cucumbers, turnips and tomatoes are the vegetables most commonly cultivated. Practically all of these gardens are planted upon No.1, or level to gently rolling slopes, while a few are on those considered No.2, or intermediate, for the soils are much thicker in the valleys, which contain the greater share of the
of the No. 1 slopes. Loam and gravelly loam are the soils most preferred for this purpose. They "work up" easily, do not crust or crack, are quite well supplied with plant food, and water can move through them freely without excessive leaching. Most of the vegetables are consumed by the family itself while a small quantity is sold to summer residents and nearby villages. Potatoes are the most important of all the vegetables, for the cool, moist summers are very conducive to their growth. Each family raises all the potatoes which it needs, and sometimes a surplus is sold in town.

Orchards. - At present, orchards occupy only about 5% of all the cultivable land. Apple orchards far surpass all others, but throughout most of the town, little care is given to the fruit trees, and the crop obtained is small in quantity and of poor quality. Practically 98% of the apple orchards are located on No. 2, or the intermediate slopes, for one of the great menaces to fruit is the destruction caused by the late spring frosts. By planting the orchards on a hillside, the cold air will often drain into the valley below where havoc is wrought upon the fruit buds, while the trees on the slopes escape. Evidence of this is seen in the decadence of valley orchards. Many of the apple orchards are growing upon loam, gravelly loam, and rocky soils. Often they are in a place where plowing would be difficult. It is a form of utilization apart from cultivated land, an attempt to gain revenue from a rocky, steep slope. This is one phase of utilization that could be developed to quite an extent.
"production of apples in commercial quantities does not extend much to the south of the line of 75° mean summer (June, July, and August) temperatures, only a few trees, planted mostly for home consumption, being found below this line. The northward distribution ends approximately at the mean winter (Dec., Jan., and Feb.) isotherms of 15°, and the acreage is thin beyond the winter isotherm of 20° except in Vermont, New Hampshire, and Maine, where the moister weather lessens the injury of the dry winter winds. "The apple, as a species, is less restricted in its soil preferences than many of the staple crops" and "appears to thrive as well upon" the bouldery soils of New England "as upon the limestone soils of northwestern New York, the Shenandoah Valley, or the Ozarks." (38) Therefore the natural environment of Marlboro is well suited for apple orchards. As an example of what could be accomplished, the development of this utilization on one of the farms is cited. (g 31, 32 Fig. 3) There apples are raised for a money crop, as well as for the family supply. (See Fig. 17) The trees are sprayed and much care is given to them. The Macintosh, the Baldwin, the Greening are the leading commercial varieties. The farmer packs the apples himself and ships them to New York.

Corn. - Corn is one of the minor crops, for it requires a warm, moist summer. Most of the world's crop is produced in a region where the mean summer temperature is between 70 and 80 degrees with a night temperature of at least 58 degrees.

(38) Finch, V.C. and Baker, O.E. Geography of the World's Agriculture, p. 77
Fig. 17
Apple Orchard and Stone Wall

Fig. 18
Hay-field, House, and Barns of the Model Dairy

Fig. 19
Sugar House
So great is the influence of heat and thin soils that very little of this crop is raised in Marlboro, where the average summer temperature is too low. (See Figs. 7, 8) Most of the corn that is grown is fed to the cattle.

Oats. — Another of the minor crops consists of oats. However, there seems to be no apparent reason why this crop should not be quite important and grown extensively. The oat requires a shorter growing season than the corn and can be raised on many varieties of soil. Nevertheless, it is unable to stand much drought, and a dry period of only several days duration in Marlboro (See Figs. 6, 7) is a great disadvantage, for the thin soil makes the drought conditions even more severe. This is another one of the crops used as feed for cattle.

Other crops. — Numerous berries,— strawberries, raspberries, blackberries, blueberries, and currants,— are growing wild in Marlboro Town. Around many of the abandoned houses these small fruits are abundant. They seem to do well on sandy soils, for these tend to make a small plant of fruitful habit rather than one with larger growth of stalk.

Crop rotation. — Crop rotation is exceedingly rare for it is little needed in a place where most of the cultivated land is in hay. Not more than four or five percent of all the farmers practise this means of restoring to the soil the properties which are soon exhausted when the same crop is planted repeatedly. However, this scientific method of farming should be advocated to some extent in Marlboro, for it would mean a better quality of crops, a larger quantity, and a lessening of the drain on the
thin soil.

Use of fertilizers. - Fertilizer obtained from the barnyard is used by almost all the farmers. In addition to this, some commercial fertilizer, mainly phosphate is added to the crop land. One farm (§ 31, 32 Fig. 3) was carrying on an experiment under the direction of the University of Vermont and the Windham County Farm Bureau. Chilean Nitrate had been applied to some pasture grass, and the farmer was awaiting the results.

The live stock industry. - There were approximately three hundred and eighty-five head of cattle in Marlboro during the summer of 1930. As a result, some dairying is carried on, although this phase of agriculture could be much improved. 49% of the farmland is in pasture, 55% of which is woodland, 7% is plowable, while all the other pastureland amounts to 5%. This is an efficient way of utilizing grass land and wooded pasture. Moreover, a great deal of the land contains huge boulders and outcrops, and is unfavorable for raising crops, but it does furnish pasture land, for the cool moist summers are very conducive to the growth of succulent grasses, which supply excellent feed for cattle.

Some of the cattle are raised for beef and veal, but these raised for milk far exceed this number (39) Most of the milk and cream is used for butter because the distance to

(39) Durham, Shorthorn, Ayrshire, Guernsey, Jersey, and Holstein are the most common breeds found in Marlboro.
Fig. 20
Outcrops In a Pasture

Fig. 21
Rock Outcrops
market makes it inconvenient to ship fresh milk, which has
great bulk and little value, while butter is more compact,
easier to send, and besides, its value surpasses that of milk.
The dairy industry could be greatly improved, however, for
careless methods are used. More rules of sanitation should
be observed, and more cattle tested. This industry could do a
great deal toward aiding the return of Marlboro's pioneer
prosperity. Just east of lot 38,39 (Fig.3) is what might be
called a model dairy. (See Figs.18,22,24) It is an excellent
example of scientific and sanitary dairying, and if more of
the farmers in Marlboro followed its methods, they could add
much to their livelihood by more efficiently utilizing their
pasturelands. A man and his wife who were summer residents,
started the dairy as a hobby. They knew nothing about the
industry, but obtained books and government pamphlets and proceed-
ed to put the suggestions into practice. At present the woman
remains on the farm all the year, and acts as supervisor. Several
employees, local residents, are hired. The farm contains one
hundred and ninety-six acres, most of which is in woodland.
During the summer of 1930 they had twenty-two head of cattle,
including a bull and young stock, and were milking eleven cows.
All of the cattle were graded Guernseys. Much of the feed is
raised upon the farm, for example, Japanese millet, clover,
sainfoin, and timothy. Crop rotation is observed, and barn manure
and commercial fertilizers applied to the fields. The house,
barns, and dairy are kept very clean, and all the rules of
sanitation are enforced. This farm has its own electric light
plant and many modern appliances can therefore be used in the
dairy. In the summer, many of the summer residents purchase
their milk, cream and butter at this place which is thoroughly
reliable. In the winter, butter only is marketed, and this is
taken by automobile into Brattleboro, where it is sold retail.
Because of the large quantity of skim milk, pigs are raised,
and contribute no small item to the family income. Butchering
occurs twice a year, and the lard and sausage are also retailed
in Brattleboro. By practising similar methods, Marlboro farmers
could undoubtedly be equally successful in developing the dairy
industry, since land suitable only for pastures is abundant,
fresh milk can be used for butter and cheese, skim milk will
feed pigs, and market centers are comparatively near.

At one time, many sheep were raised on the Marlboro
farms, but the number has dwindled until at present there are
only between ninety and ninety-five sheep in the entire town.
The United States Department of Agriculture published a bulletin
comparatively recently, emphasizing the feasibility of recovering
the sheep industry from almost utter neglect in New England.(40)
The people of Marlboro evidently are very reluctant to practise
these suggestions inasmuch as wool sells for only twenty cents
a pound. They explain the decline of the number of sheep by
pointing out the damage done by dogs, bears, and disease. Why
could the sheep industry not be extended? An abundance of native
grass can be produced on the rocky lands, and there might be

(40) Spencer, D.A., and Others, The Sheep Industry, Yearbook
of the U.S. Dept. of Agric. For 1925, pp 229 - 310.
Fig. 22
House on Farm Having the Model Dairy

Fig. 23
Garden Showing Use of Local Rocks

Fig. 24
The Barns of the Model Dairy
developed a combination of summer hill-pasture, and valley-grown winter forage, for sheep raising is an efficient means of utilizing this.
FOREST EXPLOITATION.

About 80% of all the men in Marlboro are engaged in the seasonal occupation of logging, for in this way they are kept busy in the winter, when there would be much more enforced idleness due to the halt in their agricultural tasks. The logging enables them to live in this rather unhnospitable region.

There are many signs in the cultural landscape of Marlboro Town which indicate that this is one of the ways in which man is earning his livelihood. Several sawmills with their logs, sawdust piles, and stacks of boards that are waiting to be hauled away are the most outstanding signs of this occupation. The chief factor making lumbering possible in Marlboro is the abundance of land devoted to forests. Approximately 80% of the whole town is woodland. The following data show the type of land which is given over to forests. 99% of all the No.5, or steep slopes, are wooded. These No.5 slopes, many of which have thin stony soils with numerous rock outcrops, contain approximately 57% of all the forests in Marlboro, while it is estimated that the No.2, the intermediate slopes, have 64%, and the No.1 slopes only 1%. Of the poorly drained areas found in Marlboro about 80% are in woodland. The land which is too steep, stony, and wet for cultivation, for farmsteads, and summer residences, is given over to forests. (See Figs.25-27) Besides making this steep sloping land valuable, due to the lumber which it contains, it also prevents as rapid run off as there would otherwise be during the melting of snows and after rains. It thus helps prevent floods and soil erosion.
Fig. 25
Marlboro Forests

Fig. 26
Forest Occupying the Steep Slopes

Fig. 27
Forests Occupying Steep Slopes
93% of the farms get their fuel for their homes and sugar houses from their own forest land, and wood forms 98% of all the fuel used throughout the whole town for coal is a luxury. Wood is abundant, while the coal areas are far away, and to import the latter would entail a very great expense and inconvenience. The wood is cut for fuel during the winter or early spring, when it is too cold for agriculture. This wood is then stacked to permit drying during the summer. The woodpile, neatly arranged, and stored in one of the buildings attached to the house is a very common sight, for thus it is always conveniently located for the housewife, especially during the heavy snows, when it would be a great hindrance to have to dig a path to the woodshed. The most common kinds of wood used for fuel are beech, yellow and white birch, soft maple, pine, spruce, and rock maple. (41) However, most every variety is used, but for furnaces they prefer the rock maple and birch, which burns more slowly and give more heat.

There are four sawmills in Marlboro, and all of them are located on second class roads, which makes it possible for them to haul out the sawed lumber, which is taken generally by truck to the nearby towns. The largest of these mills is at H 12.15 (Fig.3). It is situated on a No.2 or intermediate slope, which affords a sufficiently level area for storing the logs and piles of lumber, since the slope is quite gentle. The mill is owned by a large lumber company,

(41) One cord of dried rock maple is equal to one ton of coal.
Fig. 28
Sawmill and Sawdust Pile.

Fig. 29
Sawmill and Surrounding Forests.

Fig. 30
Sawmill and Nearby Forests on Steep Slopes.
Fig. 31
Piles of Lumber Waiting to be Hauled Away.

Fig. 32
Fuel Being Dried for Future Use.
and a man and his family have been stationed there so that
he can overlook the business. They are living in an old farmhouse
which happened to be on the land. This lumberman and his family
lead a rather semi-migratory life, for they live in one place
until all the timber is cut. The sawmill and machinery are then
moved to a new location where the forest is still standing, and
these people make their home in this locality until that has
been cleared. During the winter the woman boards the woodsmen
who come to cut logs, for it is during that season that logging
predominates, since agriculture is at a standstill. Besides it
is easier to haul the logs out of the forest when snow is on
the ground, for sleds, chains, and crude scows are chiefly used
for this purpose. (See Fig. 54) A large barn has been built on
the farm, in order to shelter the horses that are used in logging.
The number of horses used in winter far exceeds that used in
summer for the same reasons stated above. The logs are sawed by
steam power, for a spring and brook supply the water, and the
slabs, bark and refuse saved from the boards form the source of
fuel. During the summer of 1929 they stored water for this
purpose in barrels, due to the drought which prevailed. The
sawmill roof is of corrugated galvanized iron which helps to
avoid the risk of fire from flying sparks. In winter they have
to shovel the snow from this roof in order to prevent its caving
in, due to the weight of the heavy snowfall. The lumber is
hauled by truck directly to both the near and more distant
factories where it is used for chairs, heels, boxes and crates,
and railroad ties.
All of the lumbermen are insured, due to the great
danger of being injured by falling trees, a hazard which
always looms before them in carrying on this task of logging.
One of the sawmills (Fig. 3) was formerly run by a
water wheel, for the stream was dammed. Kerosene power is used
at present, due to the competition of sources of power in this
country, although the water power could still be utilized, at
least on a small scale, if the dam were repaired.

Log racks are frequently seen along the roads. They are
made of logs and are usually located at the foot of a slope
and are about as high as the average top of a wagon. Logs are
rolled on to these racks by force of gravity, due to their
location at the base of a slope, and wagons, sleds, or trucks
back up against the racks from which the logs are slid directly
upon the conveyance which is to haul them away. (See Fig. 57)

Many of the farmers have a small saw, run by a gasoline
engine, and in this way can saw their own fuel, since their
woodlot supplies every need in this respect.

Just previous to the holiday season, large companies
send agents to Marlboro and other towns where they buy large
quantities of "Christmas trees" to be sold in the city, for
spruce, balsam, and hemlock are found in this locality and are
the main varieties used for this purpose. The trees are placed
in bundles containing one to six trees, according to size, and
the Marlboro people receive about twelve cents per bundle.
Fig. 33
Sawdust Pile

Fig. 34
Crude Scow Used in Hauling Logs from the Forest.

Fig. 35
Log Rack for Loading Logs Upon the Wagons and Trucks.
Some of the numerous ferns growing in the woods and along their margins are gathered. Lace ferns and the Boston or dagger ferns are the most attractive, and they too are placed in bundles containing about twenty-five ferns. These are sold in nearby towns to people who make a business of buying the ferns, and who generally pay about two cents per bundle. The city florists are the next purchasers. This occupation contributes a few dollars to the income of some of the families.

A little reforestation has been started, but this has been done by the summer people. Seedling pines have been planted on several summer-home properties. (u 37, 38 and e 38, Fig. 3) The trees are set close together and this gradually kills the lower branches, since they are unable to get any light, but it causes them to grow very tall and straight. (42)

Much of the woodland consists of second growth timber, unsuitable for lumbering.

Continual care must be taken to avoid forest fires, because of the abundance of coniferous trees which burn quickly, and signs are seen quite often warning the people to extinguish camp fires and to help in preventing such disasters.

More reforestation could be carried on very wisely and advantageously in Marlboro in order to insure a future lumber supply, and to prevent floods and soil erosion. Naturally the

(42) In early times the tall straight pines were reserved especially for the ship masts for the navy of His Majesty the King of England.
residents are not sympathetic with this policy, for the forests are a natural factor which they have been trying to conquer for one hundred fifty years. Nevertheless reforestation should be advocated among the residents of this town, for steep slopes and gentle slopes as well call for intelligent forestry which permits only mature trees to be taken from an area, leaving enough standing timber to protect the soil.

Maple syrup and maple sugar — what a significant part these two products play in the household economy of Marlboro farms, for Vermont's fame as the leading producer of maple syrup and sugar is known throughout the United States. About 85% of the farms in Marlboro Town have a "sugar bush", for the sugar maple is indigenous in Vermont. (See Fig. 37) The gathering of the sap and "boiling it down" to syrup and maple sugar is a seasonal industry connected with the forests. During several weeks preceding the sugar season the farmers busy themselves preparing the sap containers, arches, fire boxes, etc. so that everything is in readiness when the "sugaring commences". The sugar season in Vermont is between March 1st and April 25th, when the sap begins to rise in the hard maple trees. At that time of the year extra help is hired, and the school children have a vacation in order to assist in putting out the buckets and collecting the sap. (43)

(43) A small hole about an inch deep is bored into the trunk of the tree when the sap is flowing in the first days of spring. (See Fig. 36) The trees are tapped on the south side, for the sun strikes there first. Small spouts with hooks are inserted in
Tapping sugar tree in a Vermont sugar grove.

Photo Through Courtesy of Penick and Ford Sales Co., Inc.
Fig. 36
This is a perfect type of sugar maple.

Fig. 37

Method of collecting sap from which maple syrup is made.

Photos Through Courtesy of Penick and Ford Sales Co., Inc.

Fig. 38
GATHERING MAPLE SAP IN A "SUGAR BUSH"

Fig. 39

* The National Geographic Society has courteously permitted me to use this print, but could not allow a photostat reproduction to be made since the picture is copyrighted.
The sap from which the best sugar is obtained begins to rise at the first approach of spring, before all the snow has melted, and flows in quantities sufficient for satisfactory sugar making only during the period when the days are bright and sunny, and the nights are frosty. Warm days encourage the sap flow; cold nights retard it so that collectively the sugaring season is prolonged and greater quantities of sap may be obtained than in regions farther south where the spring is warmer.

these holes, and buckets are hung upon these spouts. Some of the farmers use tin buckets; others prefer those made of wood for they claim that the latter keep the sap sweeter. Galvanized iron hoods are placed over the buckets to protect them from rain. The sap flows through the spouts into the buckets. The minimum time between the sap "run" and the reduction to syrup is a very essential factor in procuring the best quality, which is a light amber color. Large gathering tanks are put upon sleds drawn by horses or oxen, (See Figs. 36, 39) and wire sieves cover the tanks in order to prevent twigs, etc. from falling into the sap, which is then carried to the sugar houses (See Fig. 19) and boiled in large open tanks until the proper consistency is reached. After the sap has been evaporated to syrup, it is strained through felt strainers to remove the sediment called "sugar sand," and then it is allowed to stand in the settling tank to eliminate any sediment missed by the
Many of the farmers dispose of their syrup at the Deerfield Valley Farmers' Exchange, a cooperative marketing concern in Wilmington, about nine miles west of Marlboro, while not a few have lists of customers, often the summer residents, to whom they ship in gallon and five gallon tins the respective family requirements each spring soon after the maple syrup is produced.

(43 continued)

strainers. Next it is reheated and put into air-tight cans for storage or shipment. In making sugar, the syrup is boiled and practically all the water it contains evaporates. From 30 to 40 gallons of sap are required for each gallon of syrup, and 1 gallon of syrup makes approximately 8 pounds of sugar.
HUNTING.

Closely related to the forest lands is the hunting in which about 55% of the Marlboro residents are engaged during a brief part of the year, for the woods are the home of most of the game which still remains. Deer, fox, partridge, raccoon, mink, and muskrat are the most common. One or two so-called "open zones" are found in Marlboro. These zones consist of a region in which it is lawful to hunt deer at any time of the year. Such restricted areas are usually near or around a commercial orchard enterprise, and it is a method of protecting the trees from the destructiveness of the deer, for they frequently annoy the residents by eating their vegetable gardens and fruit trees. Game laws have been made to protect the wild animal life, and only during certain months is hunting allowed. In Marlboro this is more of a sport than an occupation, although a few skins are sold yearly, and the people eat some of the venison. It is one of the least important of the seasonal occupations, however.

DEVELOPMENT OF A SUMMER MIGRATION.

At present city people are using Marlboro as a place for summer recreation, and a regular summer migration has developed as a result.

Five divisions may be distinguished in this specific use of the land; summer homes, children's camps, farms which have summer boarders, tourists' camps with their over-night cabins, and refreshment and gasoline stands.

Summer homes. — At present Marlboro contains a great number of summer homes, many of which were old farm houses that have been remodeled and repaired, while others are cottages constructed just recently. These summer homes as a whole are scattered throughout the town, but many of them are in groups. What factors have played a part in man's selection of the site for his summer residence? The following data helps to make this interpretation:

57% of all summer places are on gently rolling slopes,

(See Plate I )
43% are on flat to gently rolling slopes.
None are situated on steep slopes.

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10% are located at an elevation of 1400 - 1500 feet.
10% " " " " " " 1550 - 1650 "
39% " " " " " " 1600 - 1700 "
10% " " " " " " 1700 - 1800 "
17% " " " " " " 1800 - 1900 "
.07% " " " " " " 1900 - 2000 "$
.03% are located at an elevation of 2000 - 2100 feet,
.03% " 2100 - 2200 ".

9 summer cottages are situated along North Pond,
2 summer cottages are situated along South Pond.

11% are on 1st class roads,
65% " 2nd "
24% " 3rd "

36% are on or near the tops of hills.

About 99% of all the summer homes have their own spring water.

Man has built his summer home on No. 1 and No. 2 slopes,
thus avoiding No. 3 slopes, for in this way it is much easier to
approach the house by machine, which is the common means of
conveyance. Besides, it gives a sufficiently level surface upon
which gardens can be planted, tennis courts made, as in the case
of one of the summer homes located in the northwestern part of
the town. ( C 9, Fig. 5)

Evidently an intermediate elevation is preferable for
homes, since 66% are at an elevation which ranges between 1600
and 1900 feet. However, the "hill-sites" have a great attraction,
for 36% are situated on hill tops or on the sides of hills
where a good view of the surrounding mountains, valleys, and
woods can be obtained. The two outstanding "hill site" summer
colonies in Marlboro are Ames Hill ( u-x,35-36, Fig. 5) and
Higley Hill (A-D, 16-19, Fig. 5) The view from these two hills
is especially attractive, for many forested mountain ranges and
peaks stretch far in the distance, one of the most outstanding
of which is Mount Monadnock, in New Hampshire. Then too, from
Ames Hill the valley in which West Brattleboro is situated can
also be seen, and this helps to increase the attractiveness of the view. Another advantage which the Ames Hill colony has is its proximity to Brattleboro, which is only about seven miles away, and is the chief trading center for about 65% of Marlboro's population.

Water bodies have always had a great attraction for man, and in Marlboro nine summer cottages are located beside North Pond, (v-7, 2-4, Fig.3) while two are on the shores of South Pond (n 16 and n 17, Fig.3) In the former case the scenic value of the pond is the main factor, for all swimming and fishing is prohibited, since it is the source of Brattleboro's water supply. South Pond offers recreation as well as scenic advantages, however, for swimming, boating and some fishing can be indulged in.

93% of the summer homes have their own springs, which are also influential factors in the location of summer residents, for their water is cold, pure, and sparkling.

In the above data 11% of the summer sites are on first class roads, that is, the main highway, known as the Molly Stark Trail. 67% are on 2nd class roads, and 24% on 3rd class. Of the 24% on third class roads 22% are on third class roads which branch off from those ranked as second class and lead to North and South Ponds. The summer residents wish to be near fairly good roads, but do not care to be annoyed by too much traffic. Since the automobile is the chief means of transportation, this
is an important factor, for all food supplies, etc. must be obtained by this means. The Molly Stark Trail has quite a lot of traffic, and auto licenses from many states may be seen at all hours of the day. Such a main-traveled highway is not quite as favorable for a restful summer home site, due to the noise and to the risk with which speeding cars would menace children's safety. Consequently the second class roads have the greatest advantages, since they afford fairly good transportation, but do not have nearly as much traffic as the first class roads.

About 96% of the people who come to Marlboro remain there during June, July, and August. Although other factors, such as official date of closing and opening schools, etc. have their influence, the climate plays an important part, for June, July, and August are the warmest months of the year in Marlboro, (See Figs. 7, 8) but the summers there are much cooler and more comfortable than those in the cities which are the homes of these summer visitors, 95% of whom come from the following places, whose comparative nearness to Marlboro makes this town quite accessible as a location for summer homes:

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(45) The occupations of some of the members of the Marlboro summer colony are as follows: an attorney, a dietician of a normal school, two college professors, two ministers, one druggist, three school teachers, a naval architect, a musician, several New York brokers, one contractor, and several retired farmers. Besides there were several wealthy women who own summer homes in Vermont and are engaged in travel for much of the remainder of the year.
161 miles from New York City.
129 " " Boston, Mass.
122 " " Bridgeport, Conn.
141 " " Danbury, Conn.
46 " " North Adams, Mass.

Some of the more general advantages of which this town can boast are: the woods with their ideal conditions for hiking, the prevailing quiet and restfulness, the many picturesque brooks, pleasant drives, and the pure air.

The summer migration will undoubtedly increase because there are still a number of attractive sites for more summer homes, and these locations will be found if there is the demand.

Children's camps. - One of the most recent ways in which man has utilized the land is to form summer camps for children. Two such camps exist in Marlboro. Shelter Camp (k-1 40, Fig.5) is the larger, accommodating forty boys, thirteen counselors, and a cook and her assistant. It is located on South Pond, which is excellent for swimming, boating, and some fishing. Part of the camp occupies a slightly rolling site (See Plate I) and along the "thumb" of this pond which is shaped like a hand, (h-1,40, Fig.3) is a No.1 slope which is very favorably situated, for there the tennis courts, courts for volley ball, and baseball diamond have been made. The No.1 or comparatively level slope, is also suitable for the tents in which the boys live, for while it affords sufficient levelness for board floors, it also furnishes suitable drainage, (See Figs.40-42).

They do a great deal of hiking, for the surrounding woods and nearby dirt roads with trees along either side offer an
Fig. 40
Shelter Camp, Located on South Pond.

Fig. 41
Shelter Camp Recreational Grounds.

Fig. 42
Diving Boards and Boats Belonging to Shelter Camp.
environment very favorable for this sport. Besides, the
boys have ponies and spend part of their time riding. This
too is aided by the many attractive roads cut through the
woodlands, which play a great part in adding to the enjoyment
of horseback riding. Several hours every week are spent in
studying trees, birds, and flowers with which the woods are
very abundant. They are taught to preserve the forest and to
avoid destruction due to the many careless habits in which man
too frequently indulges. Due to the excellent bathing facilities
diving boards and a raft have been constructed. The water aids
in another way too, for it helps to regulate the temperature.
The pure air, plenty of exercise, and life in the open are
very beneficial to the boys, and the nature studies which they
carry on are educational and worth while.

The camp is on a third class road which leads to the
pond, but is tributary to a second class road. This is a benefit,
for it gives the camp the privacy and the quiet of a little-used
road, but still they are sufficiently near to a second class
road so that communication and transportation are not hindered,
for machines and trucks are the chief means of conveyance.

The situation with reference to distance from Brattleboro
is also very good, for since it is only about eight or nine
miles away, they can easily obtain many of their supplies there.
Besides, they frequently put their canoes on the trucks and go
to Brattleboro, where the boys take over-night canoe trips up
the Connecticut River.
Another advantage which they have is that in winter or early spring ice is cut on the Pond and is stored in ice houses on the camping grounds, where it is used during the following summer. Furthermore, the surrounding forest furnishes much of the fuel for camp fires, etc.

As a result we see that many details of the environment have played a part in making this camp site one of excellent advantages and opportunities.

The other camp (r 29, Fig. 5) is one of a different nature. It is for children from the settlement houses of Boston and its vicinity, and each group remains for only about two weeks. This camp is on a gently rolling slope, (See Plate I) which affords ample space for games, etc. One of the main attractions is a brook which enables the children to go wading and bathing. The pure air, quiet, and woods also tend to make it a place suitable for such a camp, for many of the children from the city slums have very little chance to see trees and grass and breathe plenty of good fresh air. It is on a third class road about three-fourths of a mile from the Molly Stark Trail. This is very favorable, for the children are not endangered by traffic, but still the camp is near enough to the main highway, which is very important, since all the children are brought by truck from Boston, a distance of one hundred and twenty miles, and all supplies are obtained in the same way from Brattleboro, about eight miles away.
Farms which have summer boarders. - This is another recently
developed way of making a living, and using the land in
Marlboro. Several of the residents of the town accommodate
summer boarders, some of whom stay for one week or several weeks,
as the case may be. Two of these are located on the main traveled
road, ( 0 24 and J 26, Fig.5) while a third is on a second class
road, ( h 11, Fig.5) thus making it comparatively easy and
convenient to get to them. The main attractions of these two
farms are the quiet, the pure air, the mountain scenery, and
nearby woods. Most likely the fresh vegetables, fruit, and good
rich milk which they offer also have some influence in drawing
people.

A third place which caters to summer boarders is called
the Laura Pines House and Cottages ( B 73, Fig.5) and is owned
and operated by a New York school teacher. The place consists
of three large cottages, two small ones, and a house. It is
situated on a level to gently rolling slope ( See Plate I)
which affords plenty of level space for these cottages and their
grounds. The outstanding advantages of this site are its hill-
Top location, which gives a beautiful view of the surrounding
country, a spruce grove on the premises, which adds to the
beauty, hikes to places of beauty in the vicinity, and bathing
at a lake one and one-half miles away. The road upon which it
is located is ranked as second class, but permits quite good
transportation and communication with Jacksonville, two miles
away, which is the trading center for this part of Marlboro.
Again, automobiles are the means of transportation so that road conditions must be considered. It is seventeen miles from Brattleboro, the nearest railroad station, and boarders who come by train are transported by automobile from the station to the Laura Pines site. Transients are also accommodated, but since it is not on the Molly Stark Trail, it is doubtful whether many over night guests stop there.

Tourist camps, refreshment stands, and gasoline stations.—A tourist camp, refreshment stand, and a gasoline tank have been located on Hogback Mountain. (C 38, 39 Fig. 5) This is an ideal response to the environment found there, for this site has the highest altitude of all Marlboro, and consequently it offers an unusually impressive view that is really worth stopping to admire. They claim that on a clear day, five states, namely: New York; Connecticut; Massachusetts; Vermont; and New Hampshire can be seen from this summit. Mount Monadnock rises in the distance against the horizon about thirty-two miles away. The surrounding ranges, with their green forest-covering, form a truly beautiful sight. Signs have been placed along the road leading to Hogback Mountain. Some of these read as follows: "stop for the view"; "stop at the summit"; "overnite camps furnished, apply at the stand". The summit is on an intermediate slope, which provides a limited amount of space for the stand, parking place for automobiles, and tables and benches. The cottages or overnight cabins are on a steeper slope, however, but they face Monadnock. Although the slope upon which they
are situated is not adequate for parking cars, the view compensates for all other drawbacks. As mentioned previously, the summit refreshment stand is on a No. 1 slope; the approach is long and steep, but very scenic. Then too, it is on the main highway, the Molly Stark Trail, which has more traffic than any other road in the town, and is the main road leading to the White Mountains, in New Hampshire. Consequently the view causes many of these numerous transients to stop and admire the scenery, and naturally they partake of refreshments, and frequently decide to spend the remainder of the day and night in the cabins. People very often refill the radiators of their machines at the summit, since the steep approach causes the water in the radiator to boil.

This accommodation almost always leads to the sale of some gasoline or oil, so that it is an ideal place for a filling station. Its location between Wilmington and Brattleboro enables the proprietors to obtain supplies from both places. Maple syrup, maple sugar, and pine pillows are among the chief articles sold in the stand, for the surrounding pine forests offer abundant pine needles, which are gathered by the son of the proprietress and put into attractive little souvenir pillows, and the numerous "sugar bushes" in the vicinity help to produce some of the maple syrup and sugar sold to motorists. The utilization of this vantage point is very closely connected with the natural environment which it offers.

There is another overnight camp and refreshment stand (X, Y 33 Fig. 3) whose main attraction is its level to gently
rolling slope, which produces a level site for tourist cabins. It is also on the Molly Stark Trail, with all of its traffic. However, Hogback Mountain's attractions are so much better, especially the beautiful view, that the first stand is taking all the trade from the second, and consequently the latter is far from being a paying proposition. As a result it is doubtful whether this second stand can continue to exist. In this case the adjustment between the cultural and natural landscapes, means success for one, failure for the other.

A third refreshment stand and also a gasoline tank (o 24, Fig.5) have been located along the Molly Stark Trail and are near the intersection of another road, but again there is no outstanding view, and the trade carried on there amounts to about one-fourth the amount which takes place on Hogback Mountain.

The summer influx of city people helps the all-year residents of Marlboro in earning a living, for many of them work in the gardens, cut the lawns, act as caretakers, do the necessary repairing, take care of the children, do the washing and cook. Besides, the summer people buy fruits, vegetables, milk, butter, and eggs, from these neighbors and in this way help them to dispose of their produce.

This form of utilization seems to be the most promising of any yet mentioned. If the residents could only realize the significance of their natural scenic resource, their income might be increased considerably.
MAN'S UTILIZATION OF WATER BODIES
AND THEIR MARGINS.

Man is putting the water bodies of Marlboro to a very
profitable use.

The northwestern shore of South Pond (j-n, 39-46, Fig.3)
is serving as the site of a boy's camp, which fact has been noted
in the section entitled, "The Development of a Summer Migration."
The selection of this site as a camping ground was due largely
to the swimming, boating, and fishing which the water offers.
(See Fig.45) Besides, two cottages on the east margin of the Pond
are using it for the same purpose. On the south shore is a lumber
camp (m n 46, Fig.3) with many piles of wood waiting to be hauled
away. There seems to be no outstanding reason for a lumber camp's
being located there except that the surrounding region is wood-
land.

Another way in which man is utilizing this water body
is by cutting ice from the Pond during the late winter and early
spring months. The camp, nearby summer homes, and many of the
farm houses obtain their ice from this source. It is due to the
low winter temperatures that ice is formed on the Pond, and
because of the high temperatures of summer that man needs ice in
order to preserve his food-stuffs.

North Pond (u-y,1-5, Fig.3) cannot be used for swimming,
boating, and fishing, but its margins serve as favorable sites for
Fig. 45
South Pond

Fig. 46
North Pond, Which Serves As the Reservoir for Brattleboro's Water Supply.
summer cottages because of the beauty which the Pond offers.
(See Fig. 46)

Another very specific use is being made of North Pond, for it serves as a reservoir for Brattleboro's water supply, and it is due to this that all swimming, fishing, etc. are prohibited. All rights were purchased from Marlboro by Brattleboro. It has a storage capacity of five hundred million gallons of water, which is ample for all city purposes. A sort of little dam or retaining wall has been built at the eastern end of the Pond, where its outlet is located, and a sluice-way lets the water out gradually. The country rock has been used a great deal in constructing this little dam, for outcrops nearby are numerous and thus serve as suitable building material. The water runs from North Pond through an open brook for one and three-fourths of a mile. It is then taken from an impounding dam on Stickney Brook and runs through a twelve-inch pipe for a distance of two miles to Pleasant Valley water-shed. From this it flows for one mile in an open brook to a high pressure, impounding reservoir, which has a one-hundred million gallon capacity. Twenty-four miles of pipe are used in the system. The water is distributed in Brattleboro, where the inhabitants are benefiting greatly from this use of North Pond.

97% of the houses in Marlboro Town obtain their water from springs. The cold, pure, clear water is exceptionally good and is a great advantage, because it is so widely distributed.

In the case of one sawmill (H 12, '13 Fig. 5) a spring
and brook supply the water for the stream, by means of which the mill is operated.

Throughout the entire town the rock-laden, sparkling, swiftly flowing brooks have a scenic value and add to the beauty of the natural landscape. Moreover, they frequently serve as watering places for cattle and sheep.

As a result it is evident that the utilization of water bodies and their margins plays an important part in the lives of the people of Marlboro Town.
ROADS, BRIDGES, AND MEANS OF TRANSPORTATION.

It is estimated that Marlboro has about sixty miles of roads. The road pattern in many places is dendritic, for they have a noticeable tendency to follow the streams and their valleys, since these offer a natural passageway on sufficiently level ground for roadways. A noticeable example of this close relation to the streams is found along Marlboro Branch and Gulf Brook. (e,f,17 and n,c,15 Fig.5) where the original roadway, which leads up a steep hill in both cases, is in disuse while another road built at a lower level along the stream, carries most of the traffic. It is easier to drive over the newer one, due to its level condition, but one goes a greater distance in so doing.

The roads in Marlboro may be divided into three classes according to their uses. The first-class roads are on the average about sixteen feet wide, which is a sufficient width for two automobiles to pass, and are quite hard, improved, dirt roads which are open all year. The Molly Stark Trail which is comparable to the Mohawk Trail, and leads to the White Mountains, is the only road of this character in Marlboro. The distance which it covers in this town is about ten miles, and it is the main traveled highway. Throughout the greatest part, this road leads over gently rolling slopes, (See Plate I) while its slope in some places is quite level. In only a very few places is it located on a steep slope. Man has been alert to select the No.2 and No.1 slopes which facilitate travel and speed a great deal.
The second class roads are narrower, and it is possible for two cars to pass only if they find a level place to one side, where the one can wait while the other passes. Some of the roads in this class are plowed during the winter months to enable the postman and the residents to get through the deep snows, but about one-third of the roads are entirely blocked by the snow. During the melting of the snows and spring rains these are traveled only with much difficulty. There are about twenty-nine miles of such roads in Marlboro, and they outnumber all others combined. Again there is a close relation between the location of these second-class roads and the slope; most of them are on intermediate slopes, and some on those which are level to gently rolling, while they too, avoid the steep grades of the No. 3 slopes, which inconvenience and slacken the speed of traffic. Many of these second class roads have numerous outcrops projecting above their surface, which wear the automobile tires and jar the occupants. Man would probably have to purchase a new car oftener in this part of the country than in Oberlin, for instance, because of the jolting which is sure to result from these outcrops and rocks. In several places, man resorted to blasting in order to cut the road through the bed rock.

Many of those in the third class do not deserve the title of roads, for they are rough, grass-covered paths over which little or no traffic is able to pass. They are, of course, entirely blocked by the deep snows during the winter months and by the mud that results from the melting snow and rains. Most of these are also on intermediate slopes and avoid the steep
Fig. 47
The Main Highway as it Leads from Hogback Mountain.
Fig. 48
The Second-Class Road Between Amos Hill and Marlboro.

Fig. 49
Part of The Molly Stark Trail, Marlboro’s Main Highway.
grade, but on many the drainage conditions are very poor, and
the outcrops are numerous so that they greatly hinder travel.
At present some of these are used in getting logs from the
forests. Traffic did pass over a few of these roads in earlier
days, but many are entirely deserted now, for they are in
isolated parts of the town. Although most of the roads in this
class are on No. 2 slopes much of the land on their margins is
steeper and very stony. Such slopes and soil is being utilized
for forest since they are unfavorable for agriculture, and
consequently many of the roads are abandoned.

Caring for the roads is another occupation. Gravel from
local pits of outwash gravel is put upon the first and second
class roads, for several gravel pits are found in Marlboro, due
to glaciation. (See Figs. 51, 52) Since the source of gravel is
near and easily obtained, it is much cheaper for the town to use
this instead of concrete or other material. Many of the residents
of Marlboro are engaged in this part-time occupation of hauling
gravel from these pits and in putting it on the roads. Calcium
chloride is frequently sprinkled on the highways to keep them
moist and prevent dust. This is flake calcium chloride obtained
in large bags from the Solvay Process Company in Syracuse, New
York. A gravel road needs constant care, since the gravel is
gradually pushed to the outside, and after every rain the roads
are scraped, for the rainfall tends to wash the gravel from the
road surface. In winter it is necessary to keep some of the roads
open by means of snow ploughs and wooden rollers– for the great
Fig. 50
A Wooden Bridge

Fig. 51
A Gravel Pit in Marlboro Town

Fig. 52
A Gravel Pit, the Source of Road Material
depth of the snowfall greatly hinders or even blocks transportation and communication. In spring, when the melting snows make the roads muddy in some places, sawdust is placed upon the muddiest places and boards are laid on top to make passage possible. Sawdust for this purpose is abundant having accumulated in huge piles around the sawmills during the logging season.

Another way in which man has cared for the highways is by placing fences at the dangerous curves, for many of the roads are very winding, and the fences which are painted white, can be seen even in the dark, and serve to warn the autoists of the sudden turn in the road.

The people could very easily utilize the abundant schists and boulders for the road material by crushing them. Very little use has been made of the schists and boulders in this way, but perhaps in the future they will be turned to such a useful account. Although it is expensive to crush such hard rock, still the supply which is already crushed and assorted by the glacier is limited, and even now some gravel must be brought into Marlboro from nearby towns, because most of that in Marlboro is of a poor grade.

At frequent intervals throughout the Town, "Thank-you-mums" have been built. These are little raised places in the road and resemble terraces. They have been made with the aim of forcing the water to run off to the side instead of across the roads. Another purpose which they served, in former times more than at present was to check the speed of wagons and thus aid
the horses in holding back a wagon or buggy in going down a hill. Moreover the horses could rest on these little terrace-like forms when tugging up hill, for many of the "Thank-you-mums" occur on hills with quite steep gradients. Of course, they hinder automobile traffic a great deal, but they are most common on the third class roads over which automobiles seldom or never pass.

Corduroy roads are also common in Marlboro, especially on the road leading south from U 34 to U 46 (Fig. 3). These are places in the roads where about six or seven logs have been laid in a transverse direction because of poor drainage conditions. Another way in which they have attempted to overcome the disadvantage of poor run-off is by placing across the road three or four large slabs of stone derived from the local bed rock. The surface of the main highway has a slightly convex shape and at frequent intervals little ditches have been dug to lead the water away from the roadway toward the sides.

Where roads cross springs or streams the following methods often serve to aid travel: concrete culverts, slabs of stone supported by smaller rocks, and logs raised above and across the brooks by means of boulders. Very often three planks arranged in table-like form so that a long, large, flat one is held up by means of two smaller planks act as a passage across the brook. In the case of larger streams, wooden bridges made entirely of logs and planks span the water. (See Fig. 30) The frequent use of logs reflects the great extent of forest land, which makes it
very easy to obtain lumber, while the slabs of bedrock and glacial boulders may be secured in great abundance.

The most common means of transportation is the automobile and truck. However, many of the farmers still use horse and wagon or horse and buggy. Automobiles are preferable, however, for they have a greater speed, and since Marlboro is quite a distance from centers of trade and markets this is quite an important factor.

It is a common sight to see "the stage" go through Marlboro. This is an old automobile which is usually over burdened with milk cans, bundles, crates, packages of every size, and a passenger or two squeezed into a corner. This "stage" is owned and operated by a man who lives in Wilmington, and he makes a daily trip to and from that town to Brattleboro, and, of course, passes through Marlboro. He stops very often during his travels, for his task is to purchase and deliver anything which anyone wishes in Brattleboro, and this may range from a spool of thread or a package of needles to a kitchen stove. This man performs his unique business throughout the entire year, and in all kinds of weather. His entire occupation is a direct response to the distance between Wilmington, Marlboro, and Brattleboro, for the residents would rather pay him to do their errands than to waste the time required to make this trip themselves.

The mail throughout the greater part of Marlboro is delivered daily by machine. In the winter, however, the postman
uses a "Snow Bird Flyer". This is a special device which has been devised to travel in the heavy snow. It consists of a caterpillar tread, which is placed upon the back wheels of an automobile, and a pair of sled runners, which take the place of the front wheels. This conveyance can go through any depth of snow without being halted by a drift, and is especially valuable in any work which is to be accomplished on schedule time. In the future, no doubt more use will be made of such a reliable means of winter transportation. (See Figs. 53-57.)
The Snow Flyer leads the way over unbroken highways, maintaining communication between city and town and country.

Where a schedule must be maintained in all kinds of weather, the Snow Flyer is first choice.

Through the heaviest snows without a worry.

A typical Snow Flyer road. Drifts do not stop the Snow Flyer.
PUBLIC BUILDINGS.

Marlboro has six public buildings of the one-room type, two of which are located on first class roads, while the others are on those ranked as second class. Moreover, four of the schools are situated at the junction of two roads, and the site of one building is at the intersection of a first and second class road. Such a location is chosen because it aids the children in coming to classes, by drawing its pupils from two or more directions. The school buildings are frame structures, for lumber is plentiful and cheap.

The children attending the Marlboro schools have a vacation in February, around sugar time, to enable them to help in setting out the buckets and in gathering the sap.

The church and town hall are located in the approximate center of Marlboro, at the intersection of the west and north branches of the Molly Stark Trail and two secondary roads, one of which leads to Ames Hill, while the other goes in a southerly direction. (See of 35,36, Fig. 3) This central position is very advantageous when town meetings are held or when people are going to church. Moreover, since it is on the cross roads, it is quite accessible to man. (See Figs. 58,59)

The post office like that of many other New England towns, is located in a private house. It is on the Molly Stark Trail, near another intersection of roads, and in the central part of
Fig. 58
Marlboro's Church, Town Hall, and
Former Inn.

Fig. 59
The Marlboro Church. In Early Days the
Church Was Located on the Hill Shown
in the Rear of this Present Structure.
Marlboro, so that it is easily approached. Most of the mail for the town is obtained by General Delivery, however, and the mail boxes are found in groups located at cross roads, road junctures, and on first and second class roads only, to facilitate the postman, who must make his trips on schedule time during the entire year.
MARKETS AND TRADING CENTERS.

There is one store in Marlboro. It is the general store type, which should contain a very great variety of goods, for it is quite a distance to the nearest towns, such as Brattleboro and Wilmington, and people would save time and inconvenience by trading at this place. However, it lacks a great deal of fulfilling all of these requirements, due perhaps to the physical defect of its owner, who was disabled by losing one of his limbs. As a result hardly any one trades there. Much could be done in improving the establishment, which is conveniently located at the intersection of the north and west branches of the Molly Stark Trail, a road leading to Ames Hill, and another going in a southerly direction. Besides, it is almost in the center of the entire town, so that it is quite accessible. If more care were taken in selecting the goods and in caring for this store, the summer people, as well as the permanent residents, would undoubtedly be glad to purchase many supplies there. A similar place of business in West Dover, Vermont, is operated very successfully and satisfactorily and there is no apparent reason why Marlboro's general store could not be managed in the same way.

The residents of Marlboro may be divided into four groups according to their relations with nearby trading centers. Some of these groups overlap, but, the distinctions are noticeable. Those trading in Brattleboro form the first group, which is larger than all the others and involves almost the entire town.
Brattleboro is ten miles east of the center of Marlboro Town. It is the largest village in this part of Vermont, (population 8,709 in 1930) is on the Connecticut river, and at the junction of the Boston and Maine, Central Vermont, and West River Railroads. Its location on the Connecticut has been of much value in aiding its growth, for it formerly served as a highway for river traffic, and the valley at present forms a favorable site for a railroad and roads. It has several lumber mills and a paper mill. Chairs, carriages and sleighs, wooden heels, cabinets, tennis racquet frames, and toys are made there. Besides, Brattleboro is the home of the Estey Organ Co., the largest concern of its kind in the United States. These industries reflect the abundance of wood in this area of which Marlboro Town is a part, although some of the lumber is obtained from more distant states. Numerous stores, several banks, restaurants, hotels, churches, a library and high school are found there. In this town the Marlboro farmers dispose of most of their butter, eggs, vegetables, and lumber. There too, they purchase many of the necessities of life. The Molly Stark Trail with its numerous tourists, leads to Brattleboro. The residents of practically entire Marlboro have some business relations with this town, during some part of the year.

Wilmington, nine miles west of Marlboro, forms the second most important trading center, but it is patronized more by the people in the western half of Marlboro Town, for those in the eastern part prefer Brattleboro, since they are nearer to this
town than to Wilmington. The latter village has a population of 611 (in 1930) and is at the terminus of the Hoosac Tunnel and Wilmington Railroad, a small, two-car, gasoline train, used at present only for freight. The most important industries carried on in this town are similar to those in Brattleboro, although they are fewer in number and of less importance. They are closely related to the supplies furnished by the surrounding country. There are a creamery and ice-cream factory, two box and crate factories, a small mill where sap tubes and holders are made, and several stores. The Deerfield Valley Farmer's Exchange, Inc., a cooperative marketing concern, is another factor in this town, for many of the Marlboro farmers dispose of their maple syrup through this company. Vegetables, eggs, and butter are sold to the stores and residents. Since it is also on the Molly Stark Trail, it may be approached without much trouble.

The third trading center group consists of South Newfane and Williamsville, and is patronized mainly by the people located on the Marlboro Branch Road. (See Fig.5) There is a very evident cause for their trading at these towns, for the mountain ridge located at o-m,28-1 (Fig.5) serves to isolate them from the south and eastern parts of Marlboro. The road going over this ridge is on an exceptionally steep slope, and is in a very poor condition, having numerous outcrops and many poorly drained sections. As a result it cannot be used for machines, and only with the greatest difficulty could a horse and wagon possibly pass over it. Contrary to this, the road leading to South Newfane and Williamsville follows the stream and its valley and has a much more level surface.
The inhabitants of this valley naturally trade at these two towns because of the better transportation conditions, and avoid the mountain ridge road. In this way they are cut off from Wilmington, although they can reach Brattleboro by taking an east and southeast road from Williamsville. This latter road is located along the West River, a tributary of the Connecticut, and similar to many valleys, it forms an excellent site for a road and railroad.

The trading center least used by Marlboro folk is Jacksonville. It serves only the few people in the southwestern part of Marlboro, for it is much nearer to this section than are any of the other trading centers. Moreover, the slope and the poor road conditions farther north, (A-X,48-40 Fig.5) act as a barrier and hinder communication with Wilmington.
ABANDONED HOUSES.

According to the data obtained from the United States Census Bureau, the population of Marlboro is decreasing steadily. (See Fig. 36) The numerous abandoned houses and old cellar holes very strikingly verify these figures, (See Figs. 61–66) and form a conspicuous part in the cultural landscape of the town. Many of these houses are caving in, windows are broken, and the surrounding land is covered with brush, spyrea, and small trees. In some of the old cellar holes trees with a diameter of eight inches or more are growing, which is good evidence that the decadence is not a modern trend. Some of the reasons why man abandons his property are quite evident; others are more general and would apply to all New England.

40% of the abandoned houses are on level to gently rolling slopes.

47% of the " " " intermediate slopes.
12 1/2 % of " " " steep slopes.

From this data it can be concluded that while slope plays some part in hindering the utilization of a farmstead, there must be other factors of equal or more importance, since 40% of the abandoned houses are on level to gently rolling slopes, which ordinarily are favorable and desirable farm sites.

The soil conditions are also involved. In one valley (R 3o - o 12, Fig. 3) all of the houses are abandoned. The soil is very sandy and infertile. In addition to the unfavorable soil conditions, there are steep slopes, and evidently the
Fig. 60
Curves Showing Fluctuation of Population from 1791 to 1930
Fig. 61
Abandoned House

Fig. 62
Abandoned House

Fig. 63
Abandoned House
combined factors have proved such a hindrance that the people could not make a living and have left the valley. Several other abandoned houses are in rocky regions with many outcrops, while still others have soils very similar to those found on some of the more successful present-day farmsteads.

Among the more general reasons which may help to explain this problem are the following: the development of farmlands in the West has attracted many of the people of New England from their rock-strewn lands to the more level, fertile areas where agriculture is more profitable; and the cities with their factories requiring many employees, have always lured the farmers and have had their share in causing them to leave New England.
Fig. 64
Abandoned House

Fig. 65
An Old Cellar Hole

Fig. 66
An Old Cellar Hole With Trees Growing in It
THE HIGHER NEEDS OF LIFE.

The people of Marlboro are lacking greatly in the higher needs of life. The church, for example, is open only during the summer months, when a minister, who is one of the summer inhabitants, conducts the services. It is closed all winter, for these hardworking people who have such a difficult time to eke a scanty living out of an almost hostile environment are unable to support a minister.

Besides, Marlboro has no high school, for in a town where the average family income is so meager very few people can afford to maintain a high school and give their children a secondary education. If a pupil does wish to have a secondary education, it is necessary for him to room and board either in Wilmington or Brattleboro and attend the high schools there. The town furnishes his tuition, but he must pay all other expenses himself. The heavy snows and distance from town, which makes travel difficult, prevent his living at home and commuting.

There is not a single doctor to be found in the entire town, and in winter the same is true of ministers. The scarcity of other professional men is also deplorable. This is due chiefly to the scattered population, the difficulty of travel, especially during the winter months, and the low average income of most of the inhabitants.

The difficulty of gaining a livelihood keeps the farmer
constantly at work; each season brings its specific tasks. Consequently he has little or no time to devote to reading. Only eleven people in Marlboro subscribe for the Brattleboro daily paper, and the Vermont Phoenix, a weekly paper which summarizes the daily paper news in one issue, has only eight subscribers living in this town. As a result, many of the residents are backward and have little or no knowledge of and contact with current events. In many cases the people do not go to town more than once a month, and frequently not more than once every three months, especially during the winter, because of the deep snows.

An occasional exception is sometimes found among the inhabitants of Marlboro, and the following poem was written by one who has lived there during his entire life.

The Wanderer's Song (46)

Of Vermont's green hills and valleys
I would sing a glad sweet song.
For beneath its grand old hilltops
Lies the spot where I was born.
Of Vermont's green hills and valleys
I am thinking as I roam,
Father, mother, sister, brother,
Childhood's days and home sweet home.
Dearer far than any other is Vermont my native home.

(46) Written by Anson H. Collins. "Dedicated to Sons and Daughters of Vermont living out of the state."
Springs of purest water flowing
From each hillside and each glen,
And the sweet arbutus blooming
In the sun and April rain.
Of those dear old hills and valleys
I am thinking as I roam,
And the flowers that bloomed in spring time
'Round about my childhood's home.
Sweeter far than any other
Is Vermont, my native home.

Old Vermont I hail thee ever,
And the pine and maple shade
Where in childhood's happy moments
Glad and free I've oft times played.
Of Vermont's green hills and valleys
I am thinking as I roam,
And the dear ones of my childhood,
In Vermont my childhood's home.
Dearer far than any other
Is Vermont my native home.

Many heroes born before me,
Sleeping now beneath its sod,
Make Vermont seem consecrated
By the blood those heroes shed.
Of those dear old hills and valleys
I am thinking as I roam,
And those heroes sweetly sleeping
In Vermont, my own dear home.
Farther far than any other
Is Vermont, their native home.

And when all of life is over,
I shall feel that I am blessed.
If Vermont's green hills 'ere sunset
Shade the turf near where I rest.

So I'm waiting, waiting only
'Till life's wanderings all are o'er
Then I'll sleep among those heroes
In my own dear state once more.

No doubt the writer's personal ability has played an important part, but the content of the poem is closely related to the surrounding landscape, for he places much emphasis upon the wooded hills and valleys which lend such a great beauty to the region, and seem to grip his soul.

There is a noticeable lack of any social life in Marlboro, which is true of many farm areas, but the Windham County Farm Bureau, a branch of the United States Department of Agriculture Extension Service, is trying to introduce some clubs of a social and educational nature. This Bureau has three agents: the County Agricultural Agent who has charge of the fruit, vegetables, and dairy division; the Club Agent, whose specialty is the Forage
Club, home economics, and agricultural work with the children, among whom the "Calf Club" is quite familiar; the third is the Home Demonstration Agent, and she works entirely with the women, giving food demonstrations, introducing sewing machines and sewing machine attachments, etc., and conducts the Green Mountain Camp for women. Accordingly, there is a close relationship between the social work planned by this Farm Bureau and the occupations of the average resident, and crops raised by the farmers.
FUTURE OUTLOOK.

The community seems to have no particularly promising future. According to the census statistics the population is steadily decreasing. Conditions will probably continue much as they are at present, although undoubtedly more land will be sold for summer residences. This region is too far from the railroad for any manufacturing or business prospects. Agriculture, including the raising of live stock; logging and the other forest occupations, the gathering of sap from the maple trees and "boiling it down" to syrup and sugar, will always continue to be the main occupations. However, much could be done towards developing and improving the methods used in agriculture. If crop rotation were practised, and more scientific methods observed, the crop yield would be greater and of better quality. Besides, the revival of the sheep raising industry, and the introduction of scientific dairying would be of great value in developing and increasing man's livelihood in Marlboro.
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