

A GEOGRAPHICAL STUDY

OF BLENHEIM TOWNSHIP

B Y

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## I N T R O D U C T I O N

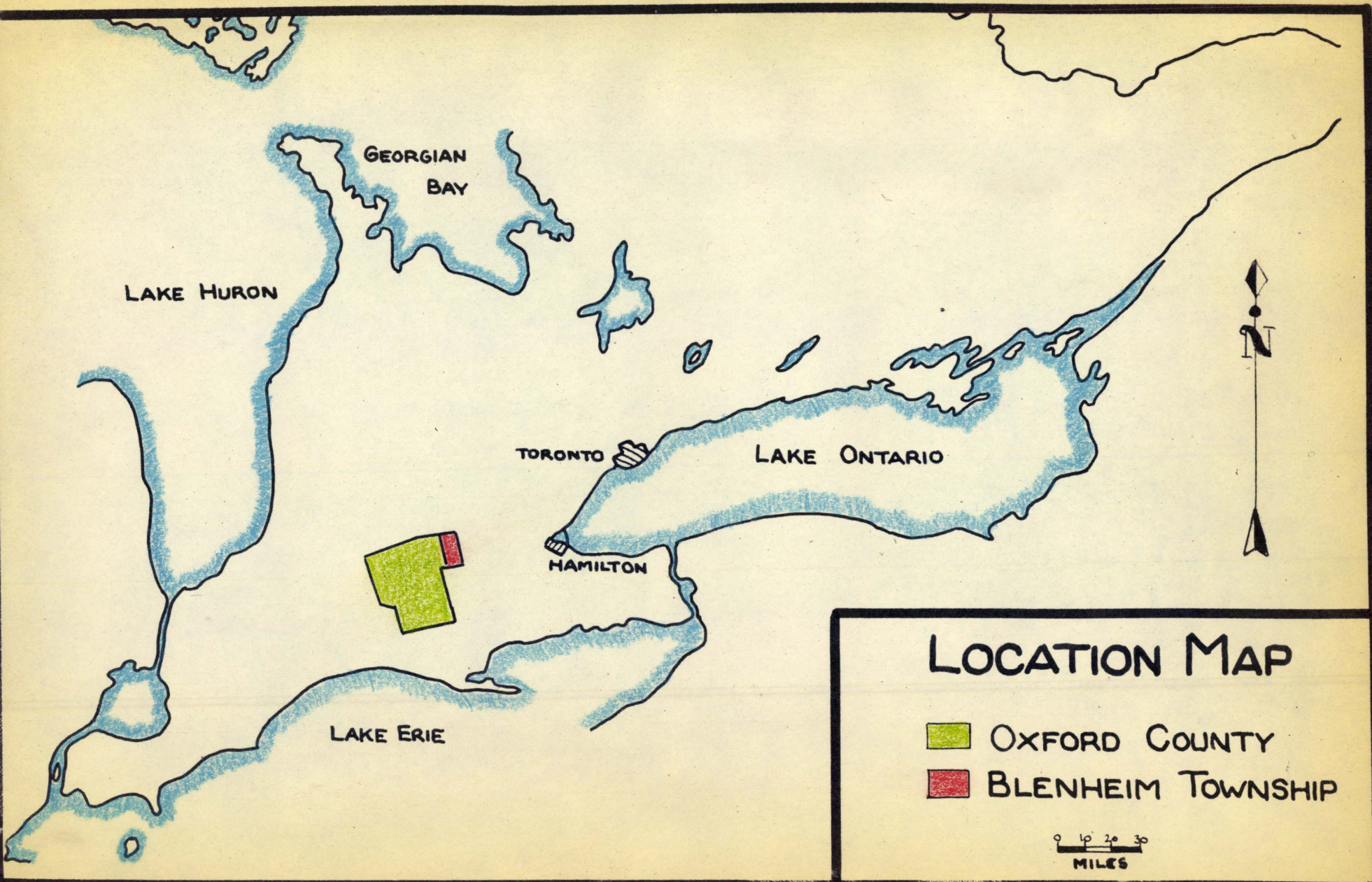
This geographical investigation is centered upon Blenheim Township and has as its main objective a study of the physical and cultural landscapes and their interrelationships. In order to accomplish such a purpose it was necessary to study the physical geography, the historical development and man's use of the land within its boundaries. Field observations provided the most important information in carrying out this investigation. Interviews were also conducted and a careful study has been made of relevant available literature.

Blenheim Township is the north-east extremity of the County of Oxford and is the third largest township in that county, having an acreage of 66,944 acres. Its general location represents a position within a triangle whose apexes are Paris, Galt and Woodstock. It is rectangular in shape with dimensions of approximately 12 miles N - S, and 9 miles E - W.

The township is bounded on the east by the Townships of North Dumfries (Waterloo County) and South Dumfries (Brant County); on the west by the Township of Blandford (Oxford County); on the south by the Township of Burford (Brant County); and on the north by the Township of Wilmot (Waterloo County).

The township represents a portion of the Grand Valley Watershed and as such has a few streams flowing through it. Drainage of its own area is accomplished by these streams which are known as the Nith River, the Black River, Washington Creek, Wilmot's





LAKE HURON

GEORGIAN BAY

TORONTO

LAKE ONTARIO

HAMILTON

LAKE ERIE

# LOCATION MAP

- OXFORD COUNTY
- BLENHEIM TOWNSHIP

0 10 20 30  
MILES

Creek, Alder Creek and Horner's Creek. Traversing its broad area are two major highways and three branch rail lines. Physically, the township is fairly diverse and its development is predominantly agricultural.

BLENHEIM TOWNSHIP

CHAPTER 1 - PHYSICAL GEOGRAPHY

GEOLOGY - The bedrock formations found in Blenheim Township are sedimentary strata of Silurian and Devonian age. The entire study area is underlain by rocks of the Salina formation consisting of brown dolomite, shaly dolomite, limy shale and gypsum. The bedrock is covered by approximately one hundred feet or more of unconsolidated glacial drift.

This layer of drift nullifies any direct effect the bedrock might have on the surface relief. It does, however, exert indirect influences on the physical geography of the area. Because the bedrock materials are predominantly limestone and shale, the soil materials tend to be clayey in nature with a fairly high lime content. The second indirect effect is the south-westerly slope of the bedrock which tends to influence the direction of drainage of the Grand River System.

Surface relief is the direct result of glacial deposits and post-glacial stream erosion. There have been no disturbances of the land surface such as faulting or warping in any portion of the township.

PHYSIOGRAPHY - The glacial drift which so completely covers the bedrock of the township was deposited by at least three advances of glaciers during the Pleistocene period. It was built up by these successive glaciations to a depth of over one hundred feet, but the

existing land forms are the direct result of the last glaciation, known as the Wisconsin. The types of land forms to be discussed are based on field work and classifications presented by Chapman and Putnam in their "Physiography of Southern Ontario".<sup>1</sup>

A glance at the physiographic map of the township (Plate 3), immediately brings one's attention to the extensive pattern of spillways which is prevalent throughout the entire study area. As moraines were built up by successive retreats and advances of the Ontario-Erie lobe of the Wisconsin glaciation, meltwaters had to find drainage channels. As a result, deep spillways were cut in the till plain between the Ingersoll and Paris moraines to accommodate the great volume of meltwater. These broad valleys are deeply entrenched, with respect to the surrounding terrain and usually have gravelly floors. The relief of the spillways is flat and often results in very poor drainage. This accounts for the occurrence of cedar swamps in the lowest parts of the valleys. Nearly all the spillways are occupied by streams such as the Nith River, the Black River, Horner Creek, Wilmot Creek, and Alder Creek. The volume of water which is carried by the streams in these spillways is much less than that which cut the valleys originally.

Blenheim Township found itself directly in the path of the retreating Ontario-Erie ice lobe and as such was subjected to various phases of moraine building. Glaciers tend to form two distinct types

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<sup>1</sup> Putnam J. F. & Chapman L. J., Physiography of Southern Ontario

(Toronto 1951)



Fig. 1. Spillway as seen from the top of a till moraine. A branch line of C.P.R. follows this spillway.



Fig. 2. The Nith River which winds its way throughout the township occupies the largest spillway.



PLATE #4

# RELIEF MAP

	800-850		900-950		1050-1100
	850-900		950-1000		1100-1150
feet		feet		feet	
		1000-1050			





Fig. 3. A spillway gravel pit from which road materials are being taken. Quarrying as a commercial enterprise is of minor significance.



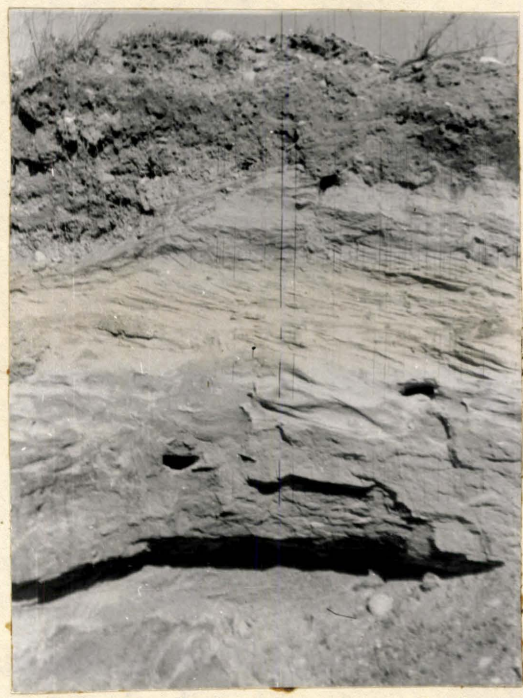
Fig. 4. A small Kame gravel pit along Concession 5.



Fig. 5. Till Moraine as seen from a spillway. An extensive area is covered by this moraine throughout central part of the township.



Fig. 6. Kame Moraine separated by cedar swamps.



very fine  
well-sorted  
sand

very well-  
sorted gravel

Fig. 7. Cross-section of the above kame moraine. This is part of the Waterloo Sand Hills found in N.E. corner of the township



of moraine which are quite easy to differentiate between. There is firstly, the end moraine or till moraine which marks the end point of the advance of a glacier. It appears as a hummocky ridge composed of a clayey or loamy material with boulders. Secondly, there is the kame moraine which is formed by the deposition of meltwaters issuing from a decaying ice mass. This latter type appears as a range of hummocky hills made up of roughly stratified sands and gravels. Both of these moraine types are found in Blenheim Township.

Stretching diagonally from the north-east corner of the township to the seventh concession at the western boundary is a kame moraine. This is not a continuous moraine but is well broken by spillways. The materials are for the most part, sorted and stratified gravels. In the north-east corner, however, the topography is more subdued and the materials are a very fine sand. This portion of the kame moraine represents an extension of the Waterloo Sand Hills. The origin of these hills is puzzling but it has been suggested by Chapman and Putnam that the subdued topography and the presence of fine sandy till indicate that the sands had been left by earlier glaciations and were merely overridden and rearranged by the Wisconsin glacier.

The retreat of the Ontario-Erie ice lobe was not a simple one but was interrupted by several re-advances of this glacier. As a result several till moraines were built up that were recessional rather than terminal. These have become known as the Horseshoe Moraines. The till moraines in the central and eastern portions of the township are extensions of the Ingersoll, St. Thomas and Tillsonburg moraines. The relief of these till moraines is more rugged though not as high



Fig. 8. Reforestation has taken place on a minor scale throughout the township. The above is the largest tract and is found just north of Drumbo.



Fig. 9. A flattish well drained sand plain which is being used for tobacco production.



Fig. 10. The flatness of the sand plain results in many poorly drained areas. Pine Pond occupies part of one of these poorly drained areas of the sand plain.



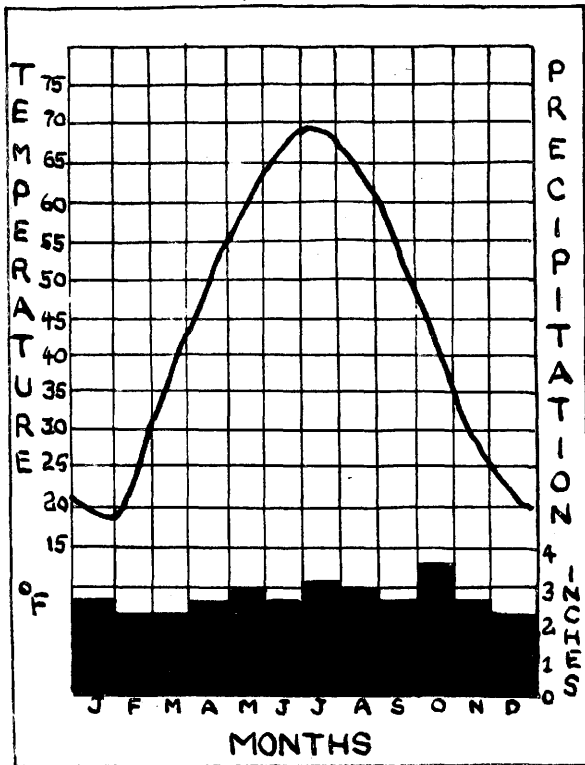
Fig. 11. Black River swamp land.

as that of the kame moraine.

The third type of land form to be found in Blenheim Township is the till plain or ground moraine. This is laid down like a gently rolling carpet as the ice lobe retreats. Some of it may also be deposited under the moving mass of ice. It is generally composed of clayey materials sprinkled with stones and boulders. The resulting relief is undulating to rolling. In the south-central portion of the township, there is an undrumlinized till plain with undulating relief whereas in the north-west corner there is a fluted till plain with more rolling relief. There are no real drumlins in the township but are found in abundance just to the west around Woodstock.

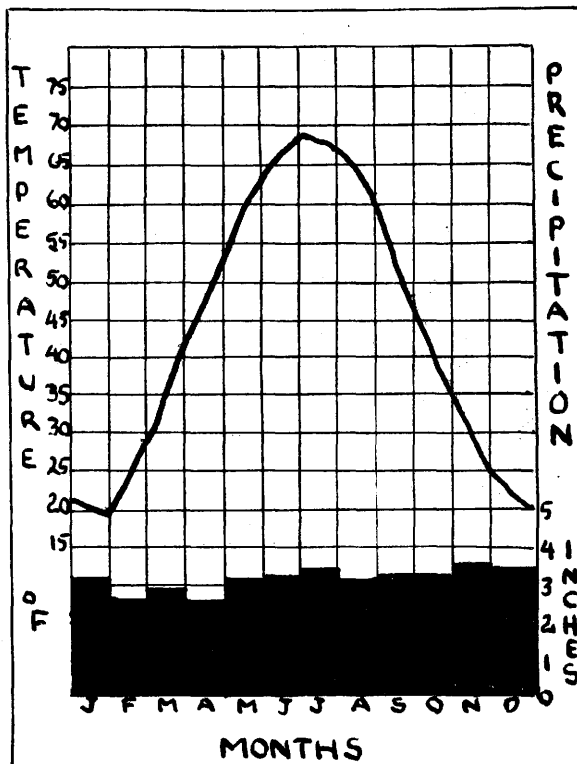
As the ice continued to retreat, the vast amount of melt-water caused the formation of glacial lake Whittlesey and later, glacial lake Warren. Neither of these glacial lakes appear to have penetrated into Blenheim Township but have been the cause of the sand plain which is found in the south-west corner. This represents the extension of the Norfolk Sand Plain which was formed by meltwaters spilling into the glacial lakes. The result was an extensive delta of fine sand. It has given rise to a specialized type of agriculture in this area. Tobacco is the most important cash crop and with its introduction land values have increased greatly.

CLIMATE - The absence of any weather recording stations within the township has prevented a detailed analysis of the climate of the area. It is possible, however, to describe the general climatic region within which this township is located. This information combined with a comparison of data from Stratford and Brantford weather stations, will



CLIMATIC CHART  
BRANTFORD

PLATE # 5



CLIMATIC CHART  
STRATFORD

PLATE # 6

enable one to receive a general idea of the climate of Blenheim Township.

Chapman and Putnam classify the area north of Lake Erie as the South Slopes climatic region in their regional analysis of the climate of Southern Ontario.<sup>1</sup> Enjoying a southern exposure, it is not as cold as the region to the north but it does not have as moderate a climate as the region to the south, which benefits from proximity to Lake Erie. The altitude for the township ranges between 900 - 1,150 feet above sea level.

The mean annual temperature for the region as a whole ranges from 43° - 45° F. The winter mean ranges from 18° - 23° F and the spring mean ranges from 41° - 47° F. In these respects, the climate is similar to that of the Lake Ontario region. The summer mean is 66° F and the autumn or fall mean is 47° F. There is a fairly wide range of temperature between winter and summer. The average length of the frost free period ranges from 137 - 143 days, from May 11th to May 20th until September 28th, or in some places October 3rd. The average length of the growing season is from 189 - 200 days.

Rainfall is an important factor, especially to an agricultural township such as Blenheim. The amount of rainfall per year is quite adequate being between 32 to 38 inches and is also quite reliable. Almost half of this total falls between April 1st and September 30th with 7 to 10 inches falling in June, July and August. This adequate summer rainfall is beneficial to crops. Snowfall varies throughout the region from 50 to 90 inches.

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1 Chapman L. J. & Putnam J. F., Climate of Southern Ontario

(Scientific Agriculture, 1938)

Blenheim Township lies in the area between Stratford to the north west and Brantford to the south east. Both of these weather stations are included in the South Slopes climatic region and, therefore, a comparison of their data is relevant.

<u>MONTH</u>	<u>BRANTFORD</u>		<u>STRATFORD</u>	
	<u>Temp. °F</u>	<u>Rnfall. In.</u>	<u>Temp. °F</u>	<u>Rnfall In.</u>
JAN.	21	2.61	21	3.20
FEB.	19	2.12	20	2.65
MAR.	30	2.16	29	2.93
APR.	43	2.54	42	2.67
MAY	55	2.90	54	3.08
JUNE	64	2.65	64	3.17
JULY	69	3.05	69	3.36
AUG.	67	2.93	67	3.04
SEPT.	60	2.63	61	3.31
OCT.	48	3.47	48	3.29
NOV.	36	2.40	36	3.59
DEC.	25	2.24	25	3.42

NATURAL VEGETATION - At the time of settlement Blenheim Township was almost completely forested. Originally, the forests appear to have consisted of sugar-maple and beech with an admixture of pine and hemlock. In the swamps there were such species as white elm and silver maple. From early descriptions and from analysis of the present forest cover, a fairly accurate picture can be drawn as to the character of the original forest.



Fig. 12. Cedar Swamp in the vicinity of Lake Burgess. Township roads have bypassed the many swamps of the central area.



Fig. 13. Lake Burgess Swamp land. Note the dominance of elm & ash and the poorly kept concession road.



A forest classification for Canada by W.E. D. Halliday<sup>1</sup> places Blenheim Township within the Huron-Ontario Section of the Great Lakes-St. Lawrence Forest Region. The prevailing association in this section is broad leafed, but there is a reduction in the number of species. Sugar-maple and beech are the dominant species with an admixture of basswood, white elm, yellow birch, white ash, some red maple, and (Northern) red, white, and bur oak. There are also small groups of hemlock and balsam fir, as well as a scattered distribution of large-toothed aspen, butternut, hickory, ironwood and black cherry. On certain special sites, such as river bottoms and swamps, blue beech, silver maple, slippery and rock elm, and black ash are found. In the south, there is a slight intrusion of the Deciduous Forest Region, resulting in black walnut, sycamore, and black oak.

Because of the close association between soils and vegetation certain species of tree are found on certain soils. Very common to the medium-textured well drained soils is the sugar-maple, beech association. Included with this are basswood, ironwood, white ash and some oak. On all imperfectly drained soils and on all heavy-textured well drained soils, the prevailing association is soft maple and elm. Ash, ironwood and large-toothed aspen occur in this association as well, and sugar-maple is present on the heavy-textured well drained Huron Series. On all poorly drained soils the elm, ash and cedar association is dominant.

This original forest cover was naturally antagonistic to settlement as the trees impeded development. In Blenheim Township

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<sup>1</sup> Halliday, W.E.D., A Forest Classification For Canada  
(Patenaude, 1937)

the rate of deforestation was perhaps a little faster than in other areas, because it was the scene of first settlement in Oxford County. At any rate, the present forest cover represents only 8% of the total land area of the township. It occupies only 5,500 acres (approx.) out of a total area of 66,944 acres, and takes the form of farm woodlots and swamps.

SOILS - The soils of Blenheim Township have developed on a variety of parent materials mainly of glacial origin, in a cool moist climate, under hardwood and mixed forests. Soils formed on similar materials are said to belong to the same catena but there are differences in profile development. These differences are caused by the variety of parent materials and the variety of natural internal drainage conditions. The soils of this township belong to the great soil group, the Grey-Brown Forest Soils, with similarities arising from a common climate, a common vegetation and a fairly uniformly-high proportion of lime in the parent materials.

It is possible to divide the township into two general parts, the till and the lacustrine materials. Till materials consist of unsorted sand, silt, clay, stones and boulders which were deposited under or in front of the glacier as it advanced. Lacustrine materials are those deposited by water which flowed through the ice, or away from ice, or lay in hollows after the retreat of the glacier.

The material used in this account was taken from publications of the Ontario Soil Survey<sup>1</sup> and the soils were spot-checked in the field. The major soil types found in Blenheim Township are discussed in the remainder of this sub-section. These soil types are

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1 O.A.C., Soils Department, Soil Survey of Perth County

These soil types are located on the accompanying soil map which is found inside the back cover. (Plate 4)

#### A. Soils Developed on Outwash Materials

##### 1. Well Sorted Gravelly Materials

(a) Burford Loam - This soil is the well drained member of this catena. It is found on smooth, gently sloping topography. The external drainage is slow but the internal drainage is rapid. It is a light brown gravelly loam over 6 - 12 inches of yellowish-brown sandy or gravelly loam, over 8 - 10 inches of reddish-brown clayey loam, over gravel. General farming is the main activity on this soil but cash cropping can also be adapted to it. Fertility needs include organic matter, potash and phosphate.

(b) Gilford Loam - This soil is the poorly drained member of this catena and is found on smooth, very gently sloping topography. Drainage is slow and the water table is at the surface in the spring of the year. It is a dark brown loam over mottled brown and grey loam and gravel, with clay usually occurring several feet down in the profile. This soil is also used for general farming but a large proportion of it is left in pasture. There is only a small fertility need for potash and phosphates. Drainage improvements are necessary.

##### 2. Well Sorted Sandy Materials

(a) Fox Sand - This soil is the well drained member of this catena and is found on level to gently sloping topography. Very good internal drainage keeps water erosion at a minimum but there is a danger of wind erosion. It is a light brown sand over 1 - 2 feet

of yellow sand, over 2 - 5 inches of reddish-brown clayey sand, over grey sand or gravel. It is stone free. This soil is used for the production of flue-cured tobacco along with some general farming. The largest fertility problem is maintaining adequate organic matter in the top soil.

(b) Granby Sand - This soil is the poorly drained member of this catena and is found on level to depressional topography. It has a very poor natural drainage and is left mostly in pasture and woodlots. Its needs include phosphate and potash plus drainage improvements. The cost of drainage improvement is usually warranted because of the high value crops which can be grown on it after this handicap is rectified.

## B. Soils Developed on Till Materials

### 1. Fine Textured Till

(a) Huron Silt Loam - This is the well drained member of this catena and is found on rolling topography. It is a brown silt loam over 5 - 10 inches of light greyish-brown silt loam, over 8 - 12 inches of reddish-brown clay loam, over grey stony clay loam. There are some stones in the surface soil. General farming and dairying are the most common types of land use. Good yeilds can be obtained from cereal grains, corn, hay and alfalfa. Fertility needs are organic matter, phosphate and potash.

(b) Perth Silt Loam - This is the imperfectly drained member of this catena and is found on undulating topography. Erosion is slight and natural drainage is poor. It is a brown silt loam over light greyish-brown silt loam, grading into mottled reddish-brown and

grey stony clay loam and silt loam. There are some stones in the surface soil. It supports many types of farming including dairying, general farming, and specialized crops. Fertility needs are organic matter and phosphate.

## 2. Medium Textured Till

(a) Guelph Loam - This is the well drained member of this catena and is found on smooth moderate slopes. It has good external and moderate internal drainage. It is greyish-brown loam over 6 - 12 inches of light greyish-brown loam, over 8 - 12 inches of reddish-brown clay loam, over grey stony loam and clay loam. There are fewer stones than the amount found in Dumfries soils. This soil is well adapted to small grains, turnips, red clover, alfalfa, and hay. The most common activities are general farming and dairying. Fertility needs are organic matter, phosphate and potash.

(b) London Loam - This soil is the imperfectly drained member of this catena and is found on smooth, gently sloping topography. Erosion is light and both internal and external drainage are poor. It is a brown loam over light greyish-brown loam, grading into a mottled reddish-brown and grey stony loam and clay loam. It is mainly used for general farming and is fairly well adapted for oats, barley, turnips, red clover, pasture and hay. Its fertility needs are organic matter and phosphate.

## 3. Coarse Textured Till

(a) Dumfries Loam - This is the well-drained member of this catena and is found on irregular slopes. There is erosion on the steeper slopes. It is a greyish-brown loam over 6 - 15 inches of

yellowish-brown loam, over 8 - 10 inches of reddish-brown clay loam, over coarse grey stony loam and clay loam. There are many large stones and boulders found throughout the profile. General farming is again important but a great deal of this soil is left in pasture. Fertility needs are organic matter, phosphate, and potash.

### C. Soils Developed on Outwash over Till

Dumfries Sandy Loam - This soil is well drained and is found on hilly topography with many natural depressions. Natural drainage is good but there is erosion on the steeper slopes. It is a light brown sandy loam over 1-2 feet of yellowish sandy loam, over 5-8 inches of reddish-brown clayey sand, over coarse grey stoney loam. General farming and dairying are important on this soil and its fertility needs are organic matter, phosphate, and potash.

### D. Miscellaneous Soils

1. Bottomland - This is the soil which occupies the land, lying along a stream course, which is subject to flooding. The topography is usually slightly undulating and drainage is variable. It is dark brown or brown loam with very little horizontal differentiation. These areas are utilized mainly for pasture. Fertility needs are variable.

2. Muck - This is a very poorly drained soil found on flat to depressional topography. It is a black, partially decomposed organic matter over grey sand, sandy loam, or clay loam. Such areas are usually left in swamp, woodlots or remain idle.

LAND TYPES - Within a given area of sufficient size, it is usually possible to form certain physical units apart from those described



PLATE # 7

## BLENHEIM TOWNSHIP LAND TYPES

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: brown; border: 1px solid black; margin-right: 5px;"></span> SWAMPS</li> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: red; border: 1px solid black; margin-right: 5px;"></span> RIVER FLATS</li> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></span> SAND PLAIN</li> </ul> | <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: lightgreen; border: 1px solid black; margin-right: 5px;"></span> DRUMLINIZED TILL PLAIN</li> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: blue; border: 1px solid black; margin-right: 5px;"></span> FLUTED TILL PLAIN</li> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: green; border: 1px solid black; margin-right: 5px;"></span> MORAINIC UPLANDS</li> </ul> |
|---|--|

SCALE 1 IN. = 1 1/3 MI.



as physiographic. The basis of delineation for these units is by examination of the topography, natural drainage and soils. A correlation of these physical factors will often give a unit which is generally physically homogeneous. Such a unit is called a land type. It was found that there were six land types in Blenheim Township. These land types have been mapped (Plate 7) and are briefly discussed in the following paragraphs.

### 1. Morainic Uplands

This is the most extensive land type found in the township as it covers much of east Blenheim. The area considered in this division has the greatest amount of relief and consists mainly of till and kame moraine. The main soil type found in the morainic uplands is the Dumfries loam. The general topography is rolling to hilly and natural drainage is good. On the less hilly sections, the dominant soil type is Guelph loam. This unit also takes in any land that has rolling topography, good natural drainage and modified soils which are similar to the Guelph and Dumfries loams.

### 2. Undrumlinized Till Plain

This land type is found in the south-central portion of the township and is characterized by an undulating relief. Natural drainage varies from fair to poor. This area is part of the larger physiographic unit known as the Oxford Till Plain. The land is quite uniform having Perth Silt loam as its dominant soil type. Along the southern edge of this unit, the topography becomes a little more undulating and the soil type is Huron Silt Loam.



### 3. Fluted Till Plain

In the north-west corner of the township there is a further occurrence of the Oxford Till Plain. However, this portion has been slightly drumlinized or fluted resulting in a fairly rolling topography. Natural drainage is good and the dominant soil type is Guelph Loam. The homogeneity of this whole corner is broken by its dissection by the Nith and Black Rivers. The lands associated with these are noted on the map. (Plate 7)

### 4. Sand Plain

In the south-west corner of the township, on both sides of Horner Creek, is an extension of the Norfolk Sand Plain. This is characterized by nearly flat to undulating topography and generally poor natural drainage. Fox Sand, Granby Sand and Brady Sand are the dominant soil types found on the sand plain. Because the topography, drainage and soils of the upper portion of Horner Creek were similar to those of the sand plain, this area was included in this land type. Thus, the area occupied by the sand plain type is larger than that occupied by the physiographic sand plain.

### 5. River Flats

This land type includes most of the land adjacent to the various creeks and rivers that is subject to periodic flooding. These areas are undulating in relief becoming flatter towards the river bottomland. The spillway portion of this land type has fairly good natural drainage with the dominant soil type being Burford Loam. The bottomland soils are darker brown loams and have variable natural drainage.

## 6. Swamps

This land type includes all the remaining areas which are very poorly drained and have given rise to swamps or ponds. Areas of the sand plain as well as the lower portions of many spillways are included in this land type. The soil type that is dominant is the muck soil.

## CHAPTER 2 - HISTORY OF SETTLEMENT AND OF THE AGRICULTURAL DEVELOPMENT

### (a) The Area Before Settlement

Blenheim Township lies in the heart of what became known to the white man as "Indian Territory". Before the first French explorers even discovered this land west of Lake Ontario, it was the home of various tribes of agricultural Indians. The main tribes were: the Hurons, in the area between Georgian Bay and Lake Simcoe; the Neutrals, bordering Lake Erie; and the Tobacco Nation, a smaller nation in the central area. These three groups of Indians were actually akin to each other. They were similar culturally and ironically they shared the same fate. This fate was either annihilation or expulsion from their lands by the war-like confederacy of the Iroquois from the south of Lake Ontario.

These Indians were, for the most part, agriculturalists and were the first to cultivate the virgin soils of this area. The sandy soils of Blenheim Township were most likely utilized by the Tobacco Nation to grow their primitive tobacco crops. The main crops of these Indians in general, were maize, beans and pumpkins. After the time of planting came the time of waiting. For the men it was a time of raiding and hunting but for the women it was a time of tending the fields. In September the warriors would return after the women had harvested the corn with their primitive implements to store it away. It is evident, then, that the white man was not the first to realize the agricultural potentialities of this area.

### (b) The Pioneers 1794 - 1818

In 1792, the four districts of Upper Canada were divided into

nineteen counties. The County of York, in the District of Niagara, stretched as far west as the River Thames. It included, as its West Riding, Blenheim Township. In 1798, however, by Act 38, George III, the township became a part of the County of Oxford.

In 1793, the Governor of Upper Canada, who was John Graves Simcoe, ordered the construction of a Military Road from Hamilton to London to replace the Old Stage Road from Hamilton to Chatham. The purpose behind this move by Simcoe was twofold. It would provide a faster and more direct route for reinforcements in the event of an American attack on Western Ontario. Secondly, the lands of the western counties had to be opened up and such a road would provide the means for settlers to spill into that area. This road was a plank road and was called the "Governor's Road". It is now No. 2 Highway and marks the base or southern boundary of the Township.

With the area more easily accessible, Simcoe sought permanent settlers to populate it. Recalling a service rendered unto him during the American Revolutionary War, by an American, Thomas Watson, Simcoe offered this man and his family all of Blenheim Township if they would settle and develop it. In 1793, Watson's son and his cousin, Thomas Horner, came to look over this generous gift. Governor Simcoe ordered the first three concessions surveyed for them. After the completion of the survey, Watson and Horner, constructed a sawmill just west of present-day Princeton on the banks of a creek which now bears Horner's name. Watson returned to the States but Horner stayed on and was then the first white settler both in Blenheim Township and Oxford County.

The construction of a mill in an unsettled area appears rather optimistic but it was one of the conditions these two men had to fulfill in order to obtain the township. The presence of an established mill would act as magnet to new settlers. Thus, with the initial move having been made, the township was open for full scale development.

The remainder of the township was surveyed partly in 1795 and partly in 1798. Shortly after the completion of the mill settlers began to arrive and pioneer farms in the area bordering the Governor's Road. Horner built a grist mill to give further encouragement to settlement. By 1800, there had been 38 lots granted, covering an area from the first to the eighth concessions. The total acreage granted was 7,400 acres. With both a saw and a grist mill erected, and a steady stream of settlers entering the township, Horner was in a position to claim it for his own. The new governor felt otherwise and cheated Horner out of his claim by refusing to acknowledge it. In spite of this misfortune, Thomas Horner remained as a settler in the township and became a leader in this area. It was only fitting that he be chosen as the first member of parliament for the County of Oxford in 1820. At this time the Township and the County were progressing rapidly.

### (c) Frontier Life & Farming

One of the advantages held by these early settlers was the fact they had, for the most part, been born in North America and had grown up with the frontier as part of their background. They knew what conditions to expect and how to deal with them. They were not roamers or explorers but hard working men who wanted to settle in this new land and

mould it to their needs. Gradually the clearing became a common sight in the southern portion of the township. Cultivated land began to replace the forest cover which retreated under the axe of the pioneer.

The farm site was as important then as it is today and since lots were often assigned before the applicants had seen the, it was possible to exchange a poorly located lot for a better one. Soil fertility or drainage were not the deciding factors in these early days but the first farms occupied the most easily developed sites. As a result the first areas of cultivated land appeared on the river flats which were not so wooded or on the sandy soils which were the easiest to plough.

The first job of the pioneer was to establish a temporary shelter on his chosen site because time would not allow the building of permanent structures. It was necessary to begin work at once in clearing the land because before a government grant could be confirmed, five acres of land had to be cleared and cropped before the end of the second year. Clearing the land was an arduous task and usually required the combined effort of all the neighbours. Here lies the basis for the strong spirit of cooperation which is characteristic of pioneer life and is still prevalent in rural areas to a certain extent.

Wheat was the main crop in these early days and was usually planted in the fall. After planting, work began immediately in clearing the woodland for the next year's wheat crop. Throughout the winter the pioneer farmer was occupied with chopping, cutting, and hauling firewood and splitting fence rails. In the spring came "sugaring", as the sugar maple was one of the dominant forest species. The harvested wheat fields

which had not been sown in the previous fall were grass sown in the spring when the frost was completely out of the ground. This was the common practice because the rate of production on new land was greatly lowered if grain was sown a second time. The field was then left in hay or pasture until the tree roots had time to rot and could be easily removed. Once the spring crops had been planted the logging and burning of the new chopping could commence. This was the general pattern or mode of pioneer farming.

In these early days the high costs of carriage kept the township from competing with other parts of the provinces which had been developed earlier. Wheat was the main cash crop but returns were only moderate because of the higher competition. Large amounts of land suitable for pasture gave a distinct advantage to the township in the keeping of livestock. The average number of cattle per farm was higher in Oxford County than anywhere else in Ontario. Although dairying was still a minor activity the production of cheese became a lucrative business by 1812. Hogs and sheep were also kept because they were geared at self-sufficiency.

Progress was rapid and before 1810 the practice of yearly chopping new ground was gradually abandoned as a necessity. Instead peas were sometimes substituted for wheat in the first year and then was followed by rye, whereas corn and oats followed the remaining wheat crops. Tobacco and potatoes were grown in small amounts on the smaller fields near the farm buildings. As the saw mills became well established frame buildings began to appear and boards were made available for floors

and wall coverings. By 1806 the township could boast several "good" homes and farms began to prosper. The size of the home as well as the farm buildings depended upon and varied with the size of the clearing.

(d) Period of Growth (1818 - 1867)

In this period, the population of Blenheim Township began a steady climb. Emigration from Europe to North America, checked by wars until 1816, had begun again. It reached a maximum in the 1830s but began to slacken off by 1855. The majority of these new settlers were from the British Isles but there was also a steady stream of Canadian and American settlers.

Development and settlement of the township took place from south to north. The area bordering the No. 2 Highway had been the scene of early development and now it was pushing northward. In the 1830s, a great number of Scottish immigrants settled in the vicinity of the fifth concession. At Princeton and Canning there were small but flourishing settlements. As far north as the seventh line there was a small village built up around a mill and known as Moscow. By 1844, there was a sufficient concentration of rural population in the vicinity of the seventh line to warrant the erection of a permanent church, of the Baptist denomination. The village of Drumbo sprang up around this church and as settlement pushed northward other villages such as Bright, Washington, and Plattsville were laid out in the 1850s.

Apart from the large number of available settlers there was another reason for the growth of the township at this time. This was the introduction of the "New South Wales System", in 1826. It cut



down the restrictions to settlement posed by large holdings of undeveloped land and the Crown Reserves. This was accomplished by abolishing the fees paid by ordinary settlers for their Crown grants and by providing for an auction of Crown lands with a standard price based on current prices for wild land in the area. This brought about competition for good locations and consequently raised prices and induced owners to sell their unimproved holdings. Thus, with land now made more readily available and with more and more available settlers, this part of Blenheim's history can well be called the period of growth.

As the population increased and times changed, the communications of the township were bettered. Plank and gravel roads connected it to the larger urban centers and markets both to the east and the west. This was also the age of the railroad and a branch line of the C.N.R. passed through Princeton with branch lines of the C.N.R. & C.P.R. passing through Drumbo. All these improvements meant the lessening and disappearance of isolation and hardship which plagued the settlers of the frontier period. New ways of life and new farm techniques began to appear.

(e) Developments in Farming (1818 - 1867)

As mills, smithies, and well-stocked stores became more and more abundant, the old make-shift conditions were gradually done away with. By 1841, the agricultural landscape had been improved by way of well tended farms and farm buildings. The shortage of cash remained a problem and for this reason home crafts did not yet disappear.

Wheat had become the most important cash crop but a

limited demand made wheat prices uncertain. As wheat growing increased, small trade in wool, pork, beef, hides and dairy products bolstered the farm economy. The demand for wheat began to rise in the latter half of this period. To go along with it there was a rise in the demand for provisions by new settlers and various improvement groups. As a result, the shortage of cash was less acute and the farmers of Blenheim Township turned to production for sale. They depended chiefly, but not entirely, on wheat. In 1852, a new type of spring wheat was introduced which brought about an increased yield per acre because of a smaller loss by rust. Very little fall wheat was grown at this time because of its susceptibility to the wheat midge. In 1854, the Crimean War and the Reciprocity Treaty with the United States caused the demand for wheat to soar. Wheat prices were unprecedented but by 1857 the price had once again fallen. Wheat still remained the principal crop till after 1867.

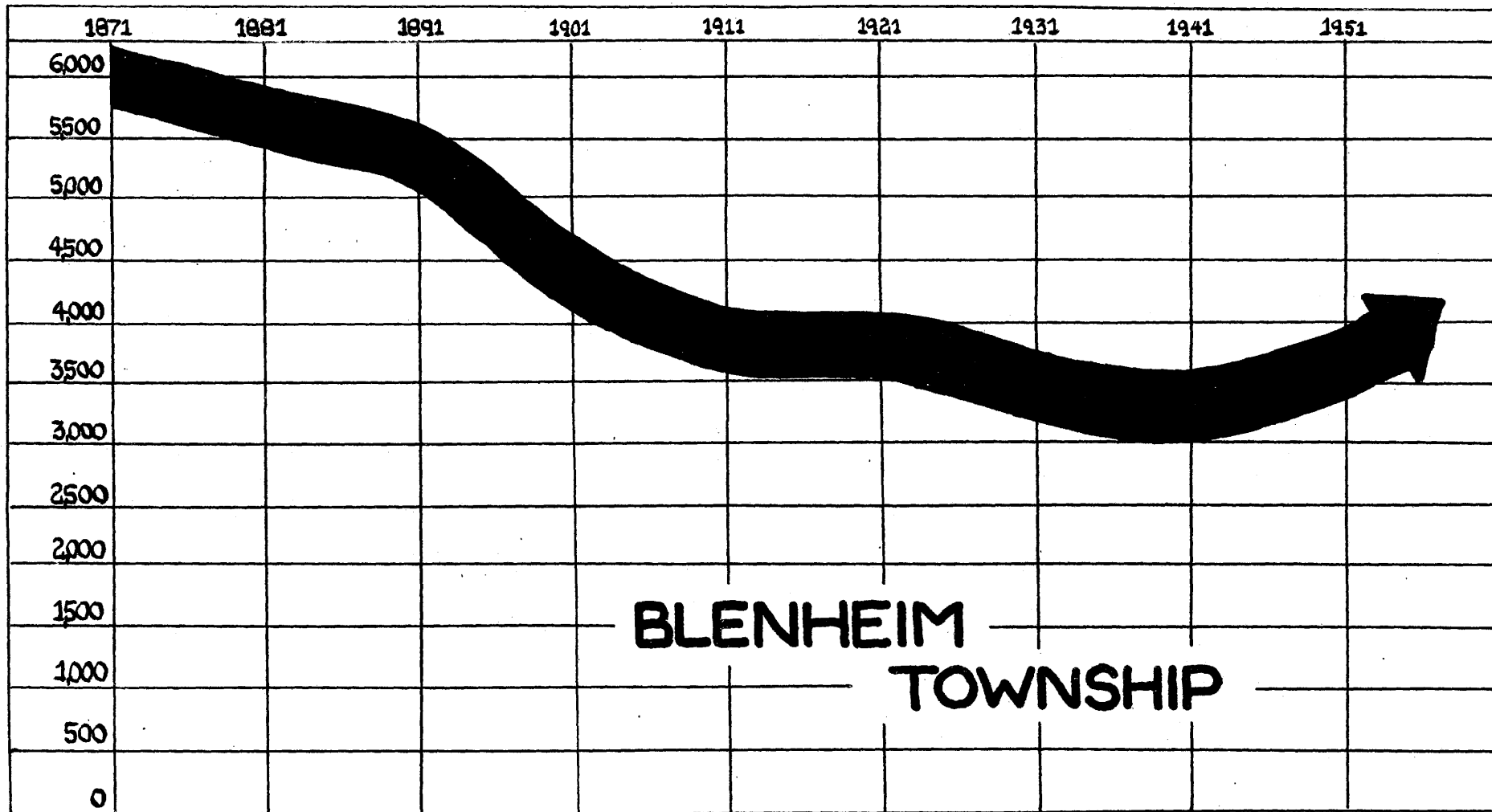
In 1850, on a farm two miles south of Drumbo, a picnic developed into a discussion of crops and livestock and led to the formation of the Blenheim Agricultural Society. The importance of good livestock was realized by the Society and they held the first calf show in Oxford County. As it grew along with the township, the Society put on larger shows and fairs so as to display nearly all the products of the farm as well as those of the rural home. This aroused interest was a great boon to the quality of the township's livestock. Imported stock, such as the Clydesdale, vastly improved the quality of horses. Durhams and Ayrshires replaced the small hardy cows of the pioneers.

Dairying was stimulated by these changes and by the increasing demand for milk. Trade with the United States was especially brisk during the civil war, when the American dairymen considered Oxford County milk cows the best in Ontario. Butter-making remained only a sideline but cheese-making was becoming an important industry. At the time of Confederation, Blenheim Township had reached its peak in development.

(f) Period of Change & Adjustment (1868 - 1914)

The years between 1867 and 1875 have often been referred to as the "Great Boom Period". During this period there are few records for Blenheim's history or development. It is reasonable to assume that the township prospered along with the rest of the province. This period of prosperity was abruptly brought to a close by a very severe depression in the early 1890s. The rural areas, such as Blenheim Township were hardest hit and many of their inhabitants moved to the large urban centres where the situation was not as grave. Consequently, this was the beginning of the long term rural depopulation that has continued until the present. Population decline since 1781 is mapped on a chart (Plate 8 ). This movement from rural to urban was aided by the improvement of communications and transportation routes and by the increasing prosperity of the towns.

The opening of Western Canada introduced two new problems for the township. Firstly, a number of the discouraged farmers left the township to open new farms in this fertile area and secondly, the introduction of hard western wheat on the Ontario market placed Ontario wheat in a precarious position. Wheat farming became an uncertain



**BLenheim  
TOWNSHIP**

**POPULATION CHART  
(1871-1951)**

resource and the farmers of the township began to undertake general farming and a greater emphasis on dairying and the raising of beef cattle. The keeping of hogs increased but sheep raising declined. Increased competition on the wool market by Australia and New Zealand, lack of necessity for wool by the farmers themselves, and better returns from raising dairy cattle, beef cattle and hogs; were all responsible for the decline in sheep raising at the turn of the century.

Much of the old wheat acreage was replaced by pasture, hay, or oats. In 1878, the Ontario Farm Tile Drainage Act made possible certain drainage schemes which brought a good deal of the wet land under cultivation. The decline in farm labour had hampered production but this was counteracted by the introduction of the tractor and by the use of the mechanical binder. At the outbreak of war in 1914, the agricultural landscape had once again changed.

(g) Since 1914.

The war of 1914-18 relieved the strained agricultural situation by introducing a large demand for agricultural products. This increased prosperity caused rural depopulation in Blenheim Township to slow down to a mere 163 people between 1911 and 1921. Production of beef, pork, and dairy products was greatly increased. The depression of the thirties, however, dealt agriculture a cruel blow and population decrease in the township was heavy again. The situation was alleviated by the outbreak of the second World War.

In spite of the great lack of farm labour, a high rate of farm production was maintained during the war years. The demand for milk, and beef rose and these two activities flourished. They

remain today as components of the three main aspects of the agricultural economy today. At the end of the war it was found that the sandy soils of the township responded very well to tobacco. As a result specialization in tobacco has become the third important type of agricultural land use. Economically it is first, having greatly increased the township assessment.

The township today is a fairly prosperous one and is fully developed agriculturally except for those areas of poor drainage. Population is increasing and the attitude of the people is very optimistic. Blenheim Township is thus, a productive and progressive area.

## CHAPTER 3 - NON-AGRICULTURAL LAND USE

### A. RECREATIONAL

Recreational land use in Blenheim Township can be discussed very briefly because of its minor importance to the economy of the township. At present there is a little interest along this line on the part of the farmers and the township people. The suitability of most of the land to agricultural development of one sort or another has left little area that might be utilized for recreation. There are two bodies of water to be found in the Township, Burgess Lake and Pine Pond. The former is found in the middle of a very dense swamp and is inaccessible. The latter is found in the south-west corner of the township and is privately owned. The owners have limited its development to their own use. The only area with suitable recreational qualities is the river flats and bottom land of the Nith River.

There has been some development along the banks of the Nith already. A total of ten cottages are situated along its course with a slight concentration in the north. There is also the Peacehaven Scout Camp which occupies 28 acres of bottom land near Drumbo and has facilities to accommodate 200 boys. The depth of the Nith is sufficient along most of its course to enable swimming and bathing. The Grand Valley Conservation Authority has proposed a picnic site development program which can be likened unto a large wheel with each river of the watershed acting as a spoke. The Nith River being the most naturally suited of these waterways, is the main spoke in this wheel. That portion of the river which flows through Blenheim Township is particu-

larly favourable and has garnered thirteen of the thirty proposed sites.

This picnic site development program appears to be the limit of future recreational development in the township. Any drainage schemes for the wet areas would not be for the purpose of obtaining added recreational land but rather for agricultural use. Recreation will remain limited to those areas that cannot be utilized agriculturally.

#### B. URBAN

Because most of the land in the township is ideally suited for agriculture, only small portions have been given over to urban development. There are no large urban centres within the township but there are several small villages. There have been many suggested classifications of towns and villages which might apply to this area. One of the best classifications used in dealing with urban centres is their treatment by orders. This classification is briefly outlined below.

- First Order - Commercial centres which have complete wholesale and retail facilities
- Second Order - Commercial centres which have limited wholesale but complete retail facilities
- Third Order - Centres which have no wholesale but fairly complete retail facilities
- Fourth Order - Centres which have only a few specialty shops but have a bank open every day
- Fifth Order - Centres having three or four stores, one being a general store, and a bank open only one or two days a week
- Sixth Order - All remaining centres which can be classified as urban

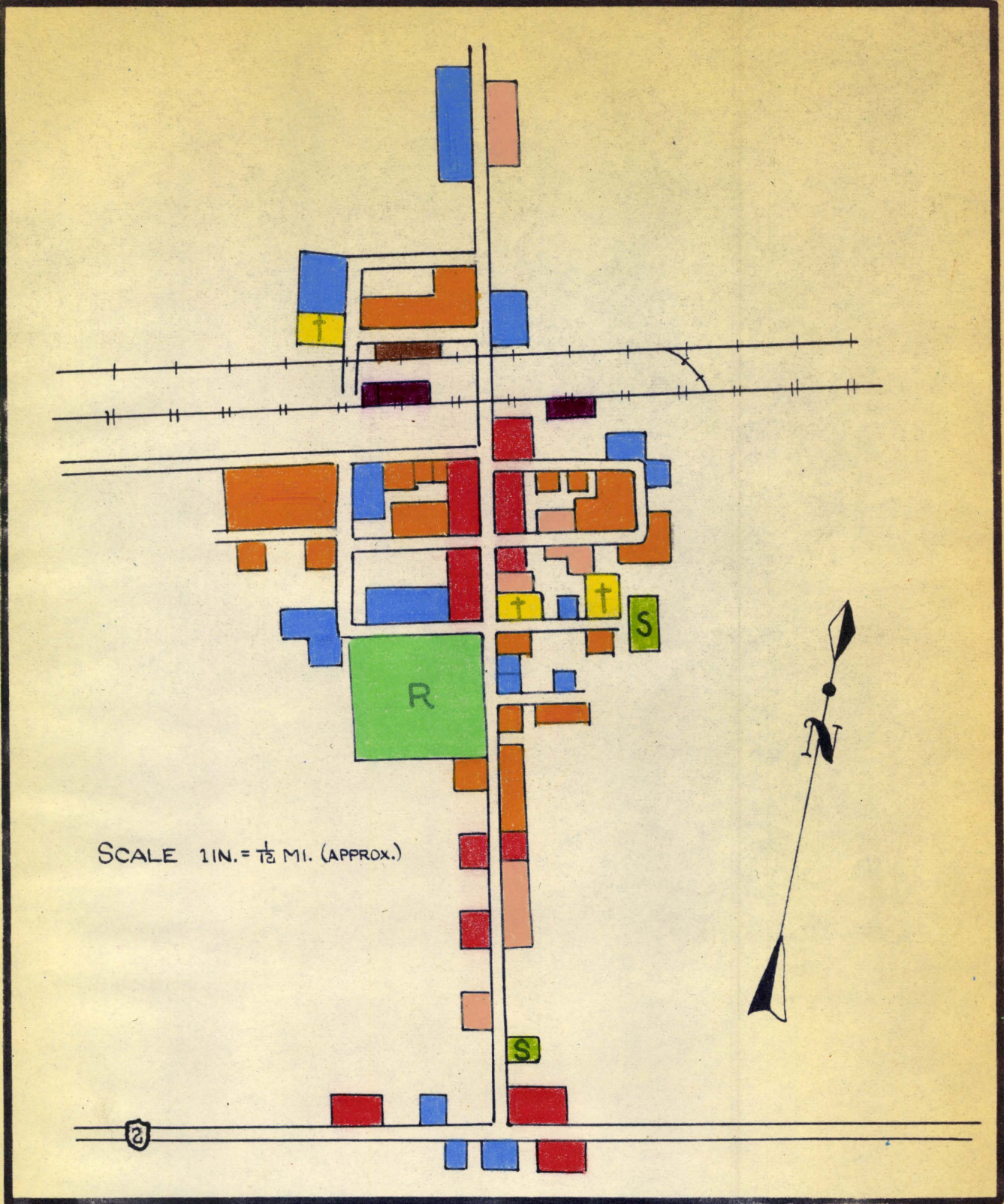


The urban centres of Blenheim Township fall into the last three orders of this classification. Princeton, Drumbo and Plattsville are fourth order towns and as such are dealt with more intensely. Bright is the only fifth order town and Washington, Canning, Wolverton and Richwood are all sixth order towns. These towns are discussed individually in the remainder of this chapter and an attempt is made to point out their function, their trade influence and where possible, their historical development.

PRINCETON










The police village of Princeton lies at the southern end of the north-south road running through the centre of the township. It is the oldest village in the township having been settled as early as 1794. In its earliest days it was known as the Governor's Road settlement until Thomas Watson, one of the early settlers, named it Princeton after his hometown in New Jersey, Prince Town. As was the reason for most early settlements, Princeton did not develop because of the presence of a saw or a grist mill, but owes its beginning to its proximity to the old Governor's Road, now the No. 2 Highway. Unfortunately, there are no historical records on the development of the village.

The present population of the township is 376 persons (1956). This figure is probably not as high as it was before the turn of the century because the township as a whole had reached its peak between 1860 - 70. As the township became depopulated so did Princeton. However, the population is now gradually increasing both in the township and in Princeton. The increase in the village population can be attributed to the larger area now incorporated in the village. Princeton has tended to spread out along its



SCALE 1 IN. = 1/2 MI. (APPROX.)

# PRINCETON FUNCTIONAL PATTERN

	RAILROAD PROPT.		1ST. CLASS		RECREATION
	INDUSTRIAL		2ND. CLASS		CHURCH
	COMMERCIAL		3RD. CLASS		SCHOOL

main street and along No. 2 Highway. The branch line of the C.N.R., which passes through Princeton and the No. 2 Highway have been the major factors in Princeton's development.

A land use map has been made for the village (Plate 9) and represents only the village core rather than its extensions east and west along the No. 2 Highway. The classification of homes in this and the other urban centres of the township is not applicable to the larger urban centres. For example, a home in the city classified as second class would obtain a first class position in these small villages.

The only functioning industry is a feed mill and the commercial facilities include two hardware stores, two electrical appliance stores, two general stores, a beauty salon, four gas stations, a restaurant, a bank and an insurance office. Primary education is well provided for by two new public schools. There is a post-office, a library and a railroad station. In the interests of recreation there is a flood-lighted baseball diamond and a small pond which is used in the winter as a skating rink.

Although No. 2 Highway has aided in the development of Princeton in numbers, it has impeded its commercial progress. Much trade by-passes this small settlement and is centred in the larger urban centres of Paris, Brantford, and Woodstock. The trade influence of Princeton includes most of southern Blenheim Township, having a stronger pull from the north of the village than from the south. Brantford and Woodstock appear to exert the strongest outside influence on Princeton itself.



Fig. 14. Princeton Public School,  
one of two new public schools  
found in Princeton

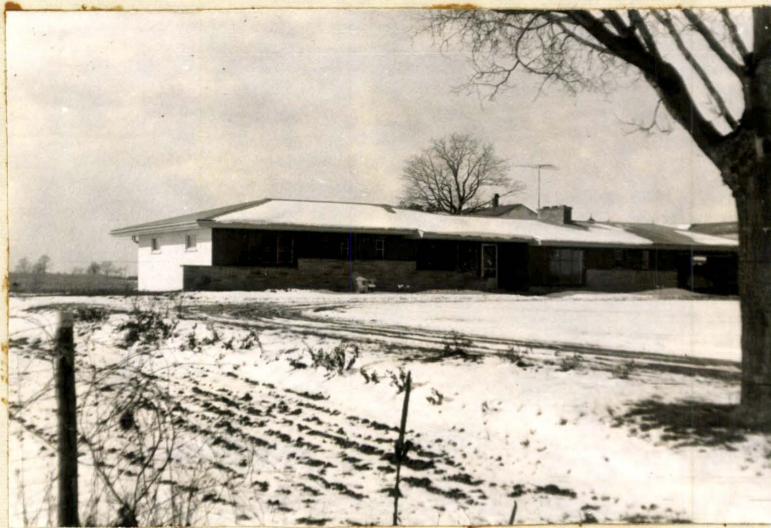


Fig. 15. First class home found in Princeton  
and is indicative of the growing number of  
commuters that are settling in this small  
village adjacent to No. 2 Highway

Of particular interest to the lack of industry problem in Princeton, is the closing and abandonment, in 1954, of a fairly large Borden's Dairy Plant. This plant had provided good employment for many persons both in and around the village. Several interviews with village businessmen and with the Borden Company revealed the reason for the closing of the plant. The increased supply and demand for fluid milk could not be efficiently handled by this outmoded plant. As a result the plant was closed down in favour of a larger more modern plant at Burford.

Princeton's position between Paris and Brantford to the east and Woodstock to the West, will limit future industrialization. Until these urban centres become so large as to necessitate a decentralization, Princeton is likely to remain a small village.

#### DRUMBO

In 1843, Squire Henry Muma built the first log house on the site of present day Drumbo. He acted as a land agent for a man named Street who held the deed to the land in this area. By 1851, there were sufficient settlers to necessitate the survey of the settlement. Squire Jackson, one of the early pioneers of this settlement, accompanied a Dr. Gwynne on his commission by the Government of Upper Canada to establish post offices in Blenheim Township. As they were approaching the settlement of "The Windfall" as it was first known, Jackson was reminded of Drumbo, Ireland, by the resemblance of the contour of the settlement's site to the back of an ox. It was then named Drumbo.

During the 1850s, Drumbo made rapid progress. A Post Office



Fig. 16. The village of Drumbo showing one of its main streets. Commercial section is the largest of any in the township.



Fig. 17. Adequate primary education is available in the township as is displayed by the new Drumbo Public School; Secondary education, however, must be obtained outside the Township.



Fig. 18. Turnip Waxing Factory in Drumbo. Turnips are waxed and stored here to await shipment by rail to the United States.

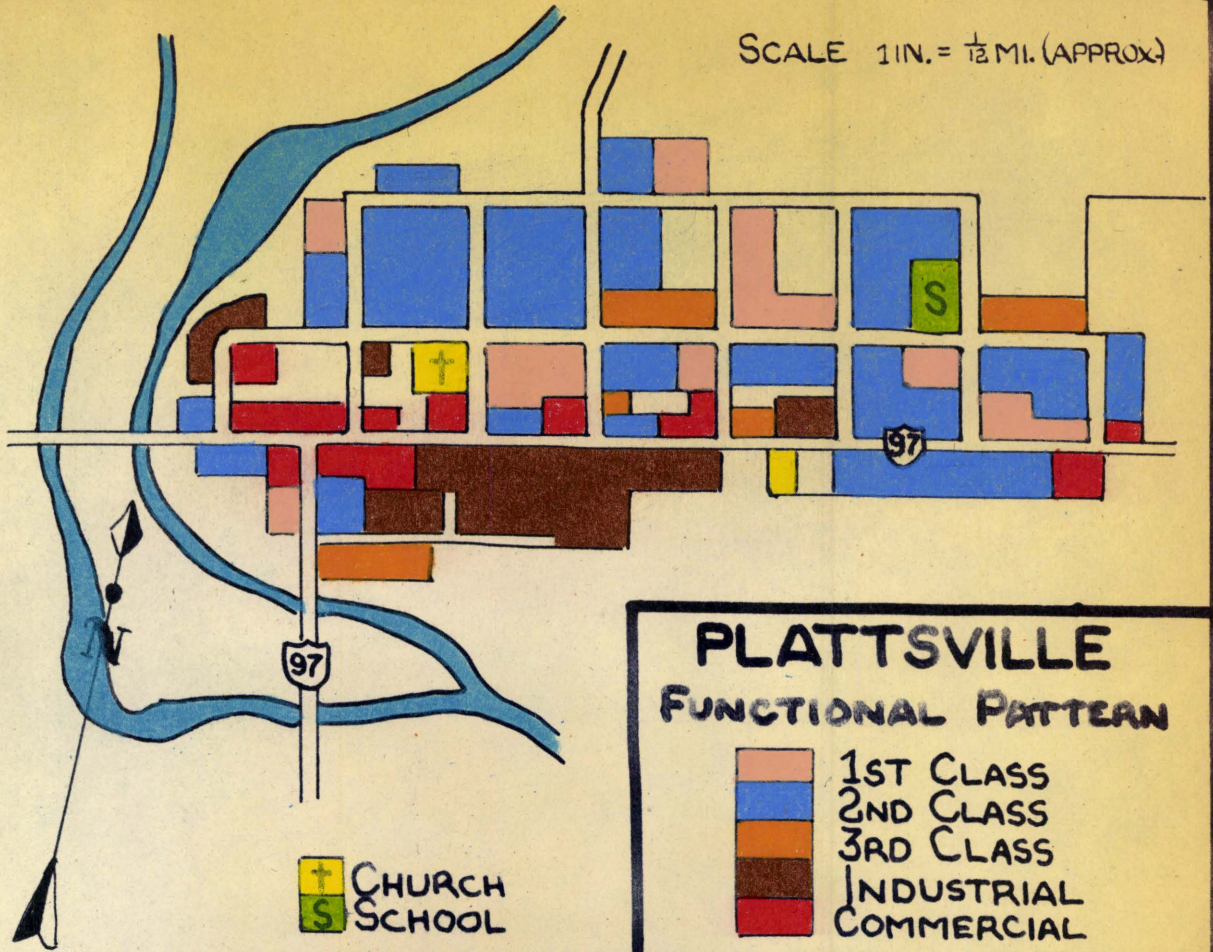
was established in 1852, a line of the Grand Trunk Railway (now the C.N.R.) passed through the centre of the village in 1854, and the population was 700 and hopes for an even more prosperous community were high. There was a very large commercial group in the village and industry consisted of a foundry, a planing mill, and a feed mill. The foundry produced plows, cultivators, agricultural implements, and castings of every kind such as mill gearings and machinery work. Drumbo was a thriving ambitious town in the heart of a prosperous agricultural area.

These ambitious hopes were dashed, in 1864, by a disastrous fire. When the smoke had cleared, two main streets were in ruins and over 50 places of business had been razed. Many businessmen left and those who stayed were dealt another cruel blow by a second fire in 1864. Discouraged and badly charred, Drumbo remained at a standstill until 1876. At this time, a core of faithful inhabitants began to rebuild and the town began to look like a new community centre again. It still has not reached the mark of the old Drumbo.

To-day the population stands at 356 persons and industrialization is negligible. There is a small feed mill and a small turnip waxing factory. The village is predominantly commercial having a large trade area throughout the central portion of the township. Many of its inhabitants are employed at Penmans or Consolidated Sand and Gravel in Paris. Kitchener and Brantford tend to exert the strongest outside influence on the village.

Drumbo then, serves as a commercial centre for the surrounding agricultural area. It also offers recreational facilities in the

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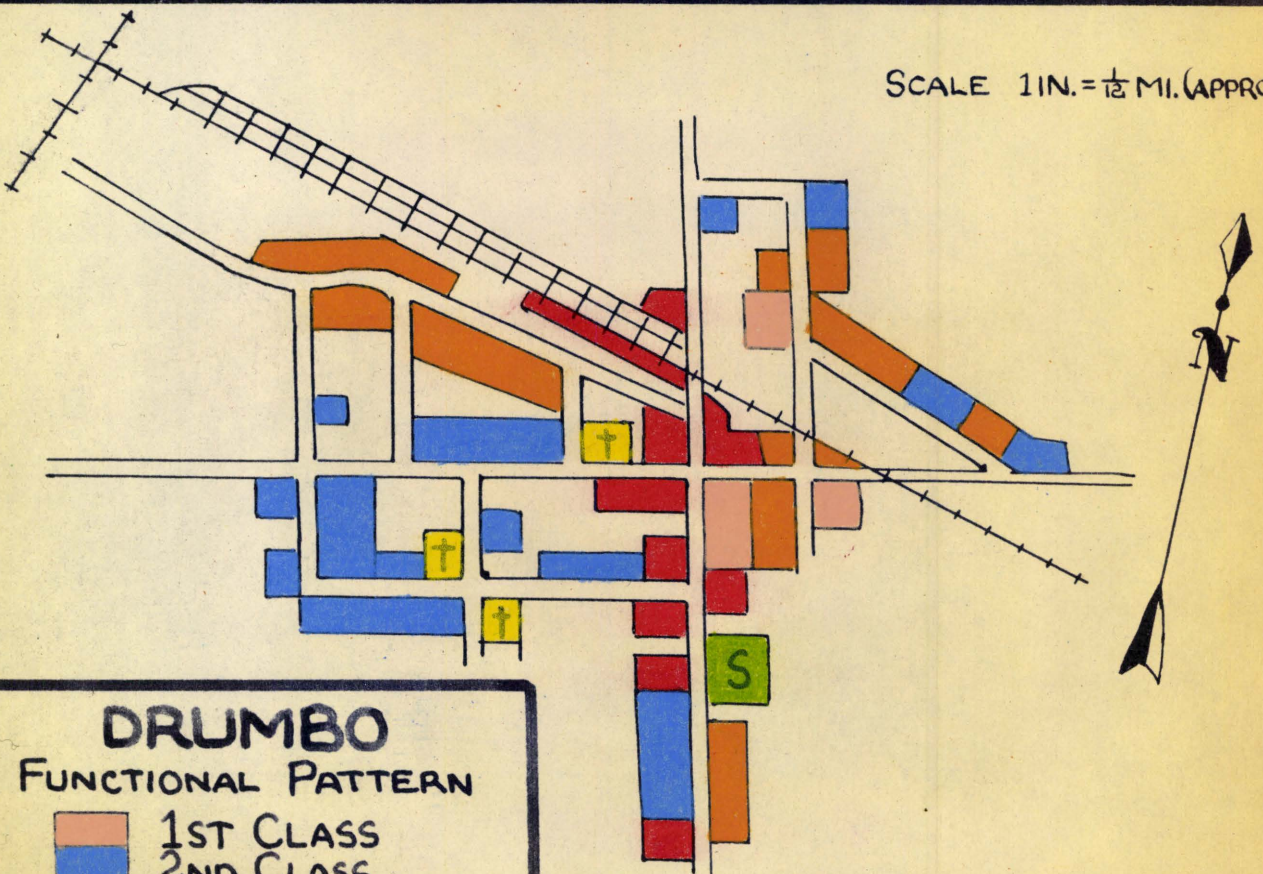


### PLATTSVILLE FUNCTIONAL PATTERN

- 1ST CLASS
- 2ND CLASS
- 3RD CLASS
- INDUSTRIAL
- COMMERCIAL

PLATE # 10

SCALE 1IN. = 1/2 MI. (APPROX.)



### DRUMBO FUNCTIONAL PATTERN

- 1ST CLASS
- 2ND CLASS
- 3RD CLASS
- COMMERCIAL

- + CHURCH
- S SCHOOL



form of an arena, two pool rooms, a baseball diamond and a dance room in the town hall. Because of the decline in population, Drumbo lost its continuation school but has acquired a new public school which also houses the town library. The prospects of future industry are bleak mainly because of the lack of available water. When the village decides to do something about this they may have a chance but meanwhile it seems to be backpeddling.

### PLATTSVILLE

As the trend in the settlement of the township took place from south to north, Plattsville is one of the younger communities. It is situated on the Nith River at the thirteenth concession. Its founder and first settler was Samuel Platt who came in 1851. Platt built a flour mill on the banks of the Nith River and then proceeded to lay out plans for the village.

Platt was an avid organizer and desired to build a thriving community. By 1858, the settlement boasted a woollen mill, a foundry, a barrel factory and a furniture factory as well as Platt's grist mill. Setting a strong example, Platt's mill was very up-to-date and produced a high quality flour which won a prize at the World's Fair in 1873. Blessed with available water power, fairly good road connections and a strong community spirit, the village flourished. By 1868, there were over 1,000 persons living in Plattsville, a large enough number to maintain four churches of the Lutheran, Baptist, Evangelical, and Presbyterian faiths. There was a town hall and a large skating arena. In 1887, a weekly newspaper was published to serve northern Oxford County, and was called



Fig. 19. The village of Plattsville looking east along No. 97 Highway



Fig. 20. The Plattsville Community Arena, largest of its kind in Blenheim Township. It provides a recreational facility for a wide area.



Fig. 21. The old factory of the Canada Sand Paper Co. The new extension is found directly across the street.

the Plattsville Echo.

The depression of the 1880s and the 90s caused a decrease in population. This was aggravated when Plattsville lost her proposed rail connections, as the branch line of the C.N.R. passed through Bright instead. As a result, there was a further decline in population and in spirit. In 1935, a fire destroyed the main street and many of the places of business. With all these discouragements the village seemed doomed to further decline.

This did not occur, however, but instead Plattsville has increased its population to 464 persons largely due to the presence of a substantial industry. This industry which has played an important part in the rebirth of Plattsville is the Canadian Durex Abrasives Company. The raw materials used by the industry are not taken from the immediate area. Resins, varnishes and most of the grain is imported from the United States. One-third of the paper is obtained from Canada and the remainder is imported from the United States. Canada and the British Empire contribute the animal glues. The company employs approximately 150 men and women. There are no particular geographical reasons for the location of this industry in Plattsville. There are no rail connections, road conditions are not the best and labour supply is not good. There was, however, available water supply and an available factory vacated by the Canadian Office and School Furniture Company. These appear to be the main reasons for its locating in Plattsville.

Whatever its reasons were, the industry prospered to the point that expansion was necessary. At the time this report was being compiled a new million dollar extension to the plant was nearly completed. This extension will provide employment for about 250 more people. This will

undoubtedly bring a rise in the population of Plattsville. Such an increase would mean increased commercial activity and possible attraction of some light industries.

The present trade area of Plattsville takes in a large part of the northern portion of the township. The north-east corner, however, is under the influence of Ayr (North Dumfries Township). Kitchener, Stratford and Galt exert the strongest external influence on the town itself. Plattsville acts as a commercial and industrial centre for the surrounding area. A large modern skating arena serves the recreational needs of the people and also houses the fairs held by the Blenheim Agricultural Society.

In contrast to Princeton and Drumbo, Plattsville, appears to have the best outlook for the future. It is based on a solid expanding industry and its people are more optimistic and more community-minded than in the other villages.

BRIGHT

The village of Bright is situated on the western boundary of the township at the eleventh concession. Population of the village proper is just below that of Plattsville but the portion of Bright that actually lies in Blenheim Township has a population of 149. The village was laid out in 1863 and progressed rather slowly. With the completion of the branch line of the C.N.R., Bright prospered. For many years, it was called Plattsville Station because it served Plattsville in this respect. However, as the village obtained a measure of independence from the domination of Plattsville it was renamed Bright.



Fig. 22. Bright Cheese-Butter Mfg. Co. located on the northern outskirts of Bright. Much of the milk from N.W. Blenheim Township is sent to this plant.



Fig. 23. The village of Washington looking east along No. 97 Highway. This small settlement is a crossroads village.



Fig. 24. This general store is the nucleus of the small sixth order centre of Washington.

The majority of the commercial establishments in Bright are found in adjacent Blanford Township. The portion which lies inside Blenheim Township is mainly residential. Trade influence in Blenheim is small because both Plattsville and Drumbo are prominent in this area. The largest influence Bright holds over this northern part of the township is the presence of the Bright Creamery and Cheese Factory, to which many Blenheim dairy farmers send their milk.

### WOLVERTON

Wolverton is located on the Nith River at the eighth concession. It was founded in 1848 by Enos Wolverton who had built a mill on the banks of the Nith at this point. After a promising start the village of Wolverton has declined to the point that the only urban character left is the grouping homes around a general store. Its trade area is only small and it falls mostly under the influence of Drumbo. Its present day function appears to be as a settlement for many of the retired persons of the township.

### RICHWOOD

The very small cluster of houses that makes up Richwood is located on the fifth concession line, about one-quarter of a mile from its intersection with the northern branch line of the C.N.R. At the time this line was completed, Richwood expanded and the railroad maintenance shops were to be built here. However, they were moved to Stratford and the village has declined to the point where the only business establishment is a general store. This store meets the needs of the people only in the immediate area. The few homes still left in

Richwood house people who commute to Brantford and Paris.

CANNING

Canning, like Richwood, represents a small cluster of houses around a general store. The occupants of this village also commute to Paris and Brantford. Its trade area is very small and the village itself is dominated by Paris.

## CHAPTER 4 - PRESENT DAY AGRICULTURAL LAND USE

Blenheim Township, as previously mentioned, is largely an agricultural area. A favourable climate with mainly well drained productive soils, and a progressive group of farmers, have all contributed to the present intensity and prosperity of this activity. It was man and not the land that was responsible for the decline in farm population and production during the years from 1871 - 1941. At present production and population are increasing. The number of farms is less but they are larger. The township still remains agricultural in nature and outlook.

Agriculture in Blenheim Township falls into two basic categories; specialized farming and general farming. Specialized farming is concentrated on the well drained, light-textured sandy and sandy loam soils primarily in the area occupied by the sand plain land type. There are other smaller areas of specialized agriculture throughout the township. The remaining portions of the township not occupied by swamps or woodlots are occupied by general farming with an emphasis on livestock-raising. Certain tables have been prepared which show trends in all aspects of the agriculture of the townships. These tables not only give an insight to the agricultural development but are also indicative of the present conditions.

### (a) Specialized Agriculture

The greatest portion of the specialized farming areas are devoted to the cultivation of tobacco. Tobacco is a relatively new crop to appear on the agricultural scene. Blenheim soils and climate



Table # 1Land Use in Blenheim Township in Acres

YEAR	AREA OF OCCUPIED LAND	IMPROVED LAND	UNDER CROPS	PASTURE	UNIMPROVED LAND
1862	57,136	37,973	26,118	11,200	-----
1881	65,780	48,922	36,872	10,577	-----
1911	62,632	49,678	36,186	-----	12,954
1921	63,896	46,953	34,766	8,673	16,943
1931	65,771	48,622	37,015	9,148	17,149
1941	64,244	47,215	35,685	8,672	17,029
1951	61,757	46,141	31,272	11,240	15,646

Table # 2Crops of Blenheim Township in Acres

YEAR	WHEAT	BARLEY	OATS	RYE	HAY	FIELD ROOTS	MIXED
1861	10,207	459	3,486	19	-----	495	-----
1881	8,811	-----	-----	---	6,675	-----	-----
1911	7,554	1,859	10,040	314	8,572	-----	1,340
1921	5,084	1,276	10,522	926	9,728	-----	2,500
1931	3,788	1,497	8,347	858	10,526	1,756	6,479
1941	4,011	1,296	6,028	720	9,970	1,354	9,249
1951	4,977	141	7,364	780	8,567	675	4,739

Table # 3Livestock of Blenheim Township

YEAR	HORSES	CATTLE	SHEEP	SWINE
1851	1,158	2,743	6,438	3,924
1861	1,937	2,883	7,407	3,437
1931	2,229	9,530	2,094	5,186
1941	1,927	10,291	1,138	8,978
1951	812	9,800	1,505	9,979

were not recognized as being favourable to tobacco until the end of the second World War. Since that time, tobacco has been largely responsible for the great increase in the township assessment. It rose from \$4,497.432 in 1941 to \$11,045,469 in 1951. As the demand for tobacco grew so did its cultivation in the township, bringing large returns and increased land values.

Conditions although not ideal were generally favourable for the cultivation of tobacco. There is an adequate moisture supply in the summer months to meet the requirements of the shallow roots of tobacco. Soils are favourable and the growing season is sufficient although there is a risk of frost. The only physical problem presenting itself at this time is that all suitable areas are taken up. There are several remaining areas of favourable soils but these are not adequately drained to permit cultivation.

Because of a surplus of tobacco in 1926 - 27 the market price dropped. In spite of this, acreage continued to increase and the market price fell further. In 1934, the Natural Products Marketing Act laid the basis for the establishment of the Flue-Cured Tobacco Marketing Association. Although acreage in Blenheim Township was insignificant at that time, the results of the Association's work is significant in the Township at the present time. It placed a limitation on the number of acres that could be used for tobacco.

Associated very closely with tobacco production is the cultivation of rye. It is often alternated in long strips with tobacco. Rye is grown chiefly because it loosens the ground and keeps it friable. It is also grown to replenish the soil with potash and phosphate which

tobacco requires in liberal amounts.

The farms in the tobacco area are fairly large, quite prosperous and utilize modern methods and machinery. Associated with the well-kept farms are small neat drying barns which are essential units in the production of the flue-cured bright leaf tobacco. These are the kilns in which the harvested leaves are dried or cured from heat from flues.

In Blenheim and in other tobacco areas an interesting process called "topping" is employed by the growers. When tobacco plants in the field have flower buds in the early pink stage, it is customary to break off(top) the stem with the flower buds leaving a bunch of leaves. This process results in a broadening growth of the leaves and an increase in quality. The quality of Oxford County tobacco is among the best in Ontario.

The 1957 tobacco crop was good but problems have recently developed in tobacco marketing. The old system of selling the whole crop of an individual producer to a single buyer has been discarded by the Flue-Cured Tobacco Marketing Board in favour of a new system of bale-auction. After curing, the tobacco is stripped and sorted by grades into bales of approximately 60 pounds. These bales are then supposed to be sold in lots or pallets of ten, at a price of anywhere from four to seventy-five cents depending on the quality and size of the leaf. This new system is geared to move tobacco quickly and in quantity. New warehouses at Delhi, Tillsonburg and Aylmer have been built by the Board to hold the tobacco for auction. The Buyers Association apposed the installing of this new system on the grounds that it would increase prices and not allow them to see what they are buying. In a possible attempt to

thwart the new system, the buyers are taking only minimum amounts of crop. The result is that many of the farmers in Blenheim Township and elsewhere have not (January 1958) as yet sold their crops and are afraid of a loss due to spoiling in their barns. Many farmers are unable to pay off their 1957 bank loans and the banks in Drumbo, Princeton and Plattsville are reluctant to make further loans for 1958. A crisis has developed and unless solved could possibly have a serious effect on tobacco farming and on the economy of the township.

(b) General Farming

The greatest portion of Blenheim Township is devoted to general farming. There is a strong emphasis on the raising of dairy and beef cattle. Hogs and sheep are also raised. The areas not occupied by pasture or swamp are given over to field, forage, and fodder crops which are used mainly as feed for the livestock. There is also a small specialization in root crops, especially turnips.

Diary farming is not a new activity in the township but has its origin with the decline of wheat as the dominant cash crop in the 1850s. The actual number of milk cows has decreased in the last 15 years in spite of the greater demand for milk. This is due to the fact that the sand plain has been given over to tobacco. The cool microthermal climate and the large amounts of improved and natural pasture are responsible for the emphasis on dairying. Markets are near and transportation facilities fairly good. The Holstein, Guernsey, and Ayrshire are the dominant breeds of milk cows kept in the township. The dairy farms are large and fairly prosperous and produce the bulk of



Fig. 25.

Both of these photos illustrate dairy farms. The size of the buildings and of the farms themselves indicate the prosperity of dairy farming and its importance in the economy of the township.

Fig. 26.



their own feed. The raw milk is sent to various centres for processing as fluid milk, butter and cheese. There are no processing plants within the township itself. In the north-east the majority of the milk goes to the New Dundee Creamery whereas in the north-west it is sent to the Bright Cheese and Butter Mfg. Company. In the vicinity of No. 2 Highway, the majority of the milk is shipped to Woodstock, Brantford or Burford milk factories. The milk from the central area tends to go to either of the aforementioned centres.

The raising of beef cattle is also an important activity in the general farming area. It is not quite as intensive as the dairy farming but is well distributed throughout the township. There is a slight concentration in the north where the pastures are rougher and often unimproved. The natural pastures bordering the Nith River are chiefly used for the raising of beef cattle. The predominant breeds of cattle to be found in the township are Hereford and Durham. The majority of the cattle are marketed in Toronto.

Hog and sheep farming are also carried on in this general farming area. The gradual increase in the number of swine kept in the township has been in direct response to the increased demand for pork. There is a concentration of hog raising in the vicinity of No. 97 Highway which provides good transportation to the meat packing plants of the large urban centres to the east and the west.

As mentioned in the historical chapter, sheep raising is only a minor activity. It is concentrated along the central part of the eastern boundary and the eastern section of the tenth concession. This concentration is attributed to both physical and human factors.

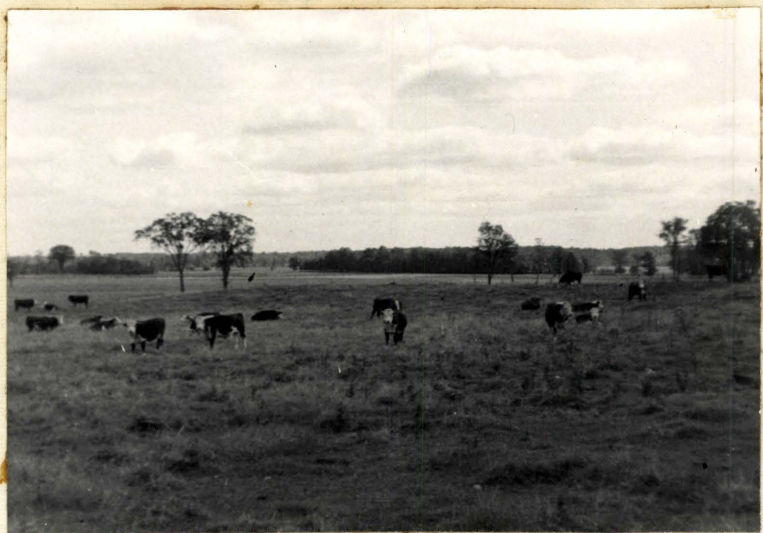


Fig. 27. Hereford Beef Cattle grazing on the flatter lands of the spillways



Fig. 28. The river flats of the Nith River are very often utilized as pasture. Beef cattle are predominant on these lands while Dairy cattle graze on the better pastures.



Fig. 29. The raising of Hogs is common throughout the northern portion of the township. It does not approach the intensity of beef and dairy cattle production.



Fig. 30. Sheep raising is now only a minor activity in the township. It is concentrated in a small area between the 9th and 11th concessions along the eastern boundary.



Physically, the relief is steeper and more rugged than elsewhere and the pasture is not generally conducive to good quality cattle. Actual interviews revealed a very interesting factor in the location of sheep in the area. Many of the farmers have none of their sons at home, resulting in a shortage of help. This shortage prevents cattle raising because of its high demand for labour. Sheep require little attention except at shearing time and this is done by an expert shearer from Galt. As a result, sheep are raised both for wool and for meat. The wool is marketed in Weston to the Weston Wool Growers and the Canadian Cooperation of Wool Growers.

Fodder and field crops dominate the general farming and agricultural landscape. Hay and other fodder crops still occupy the greatest acreage. Although there are no figures available at present, there is an increasing cultivation of corn. Adequate summer rainfall, a sufficient growing season and fairly good drainage conditions have resulted in this increase in corn. It is used mainly for ensilage or for husking. There is no corn grown for the purpose of human consumption. Closely associated with corn is the increasing acreage devoted to the production of oats. Because of its tolerant soil requirement, oats are often grown after a heavy feeder such as corn. Wheat is still produced as a cash crop but on a much smaller scale than in previous years. The majority of wheat grown is of the fall or winter variety. Mixed grains and a small amount of barley are produced as feed for livestock. Rye occupies a relatively small acreage and is grown mainly in rotation or association with tobacco.

Many farmers in the general farming region devote several acres



Fig. 31. Many farmers throughout the township devote a few acres to turnips. This cash crop is an important contributor to the farmer's income.

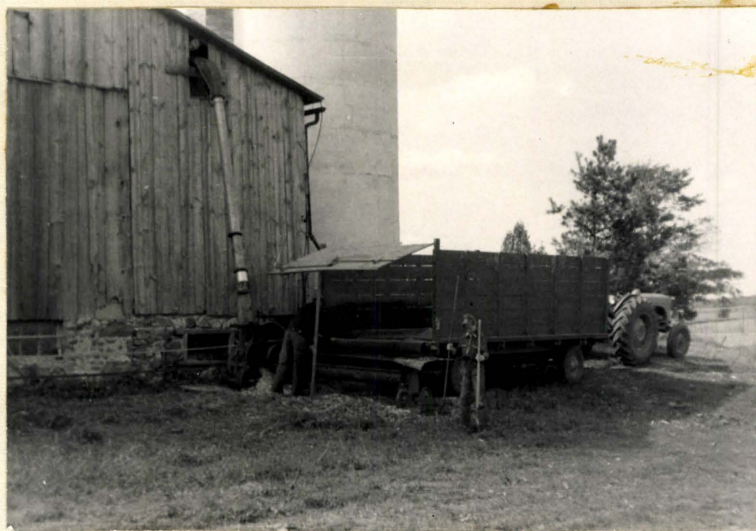


Fig. 32. This photo shows the storing of corn as feed for livestock.

to turnips as a cash crop. The type of turnip grown is a regular mild table variety and is grown for export rather than for local use. It is exported to the states of New York and Pennsylvania and to several of the southern states of the U. S. The turnips are generally planted at the end of May or sooner if frost conditions permit and is harvested in late September. The average marketing price is sixty cents a bushel and goes as high as one dollar a bushel for earlier harvested turnips. The risk of early planting is often quite profitable. The harvested turnips are taken to the turnip waxing factories at Bright, Drumbo and Richwood. Here the turnips receive a protective layer of wax, are sorted in small grades for the southern states and in larger grades for the states of New York and Pennsylvania, and are then stored to await shipment. Shipping is usually by rail, each car holding approximately 600 bushels, but it is also shipped by refrigerated transport trailers.

Although only a minor activity, poultry farming is quite prosperous. There are only three large poultry farms in the township but each of these are highly developed (fig. 33). There are several farms which keep a small number of poultry but these are of only minor importance in the total farm economy. The dominant breed of poultry is that of the heavy Vantress Cross.

North of the village of Drumbo, just before the tenth concession, there is a very large farm of special agricultural interest. This farm occupies an area of 1,190 acres and is run by the Community of the Brethren, the Hutterites. They settled this area about fifteen years ago and have developed the farm as a community enterprise. There are about 50 Hutterites occupying the farm at present under the leadership of



Fig. 33. Poultry farms are not common in Blenheim township. This is Riley's Poultry Farm on concession 2, one of the largest more prosperous ones.



Fig. 34. A prosperous tobacco farm on the sand plain.

King Julius. They are very efficient farmers and the farm is extremely well run and quite prosperous. It could even be called a cross-section of the agricultural land use of Blenheim Township for on it, Holstein dairy cattle are raised, a small proportion of tobacco is grown, 200 acres are devoted to feed crops, and there is a small production of vegetables. They also have a 60 hive bee apiary and breed geese for chain store markets. It is a model of the agricultural nature of the township.

(c) Land Values

A visit to the office of the township clerk, Mr. Haynes, led to the acquisition of valuable information from the 1956 Assessment Rolls. From the information received it was possible to plot a sample of the farm values. The large number of farms in the township and the limited time available for field work necessitated a sampling only rather than complete coverage of all the farms. The results, as discussed below, are also presented in map form (Plate 12). The pattern of farm values is such that isopleths could not be used satisfactorily.

If a comparison is made between the land types (Plate 7) and the soil types (Plate 3), it can be seen that nearly all the land classified as less than ten dollars per acre is coincident with the areas of swamp and poor drainage. The poorly drained area of the Black River swamp has some land valued at less than a dollar an acre. Areas with a little better drainage are utilized as rough pasture and are valued between ten and fifteen dollars per acre. The majority of the northern section has land values ranging between fifteen and twenty-five dollars per acre whereas in the south-west where there is more

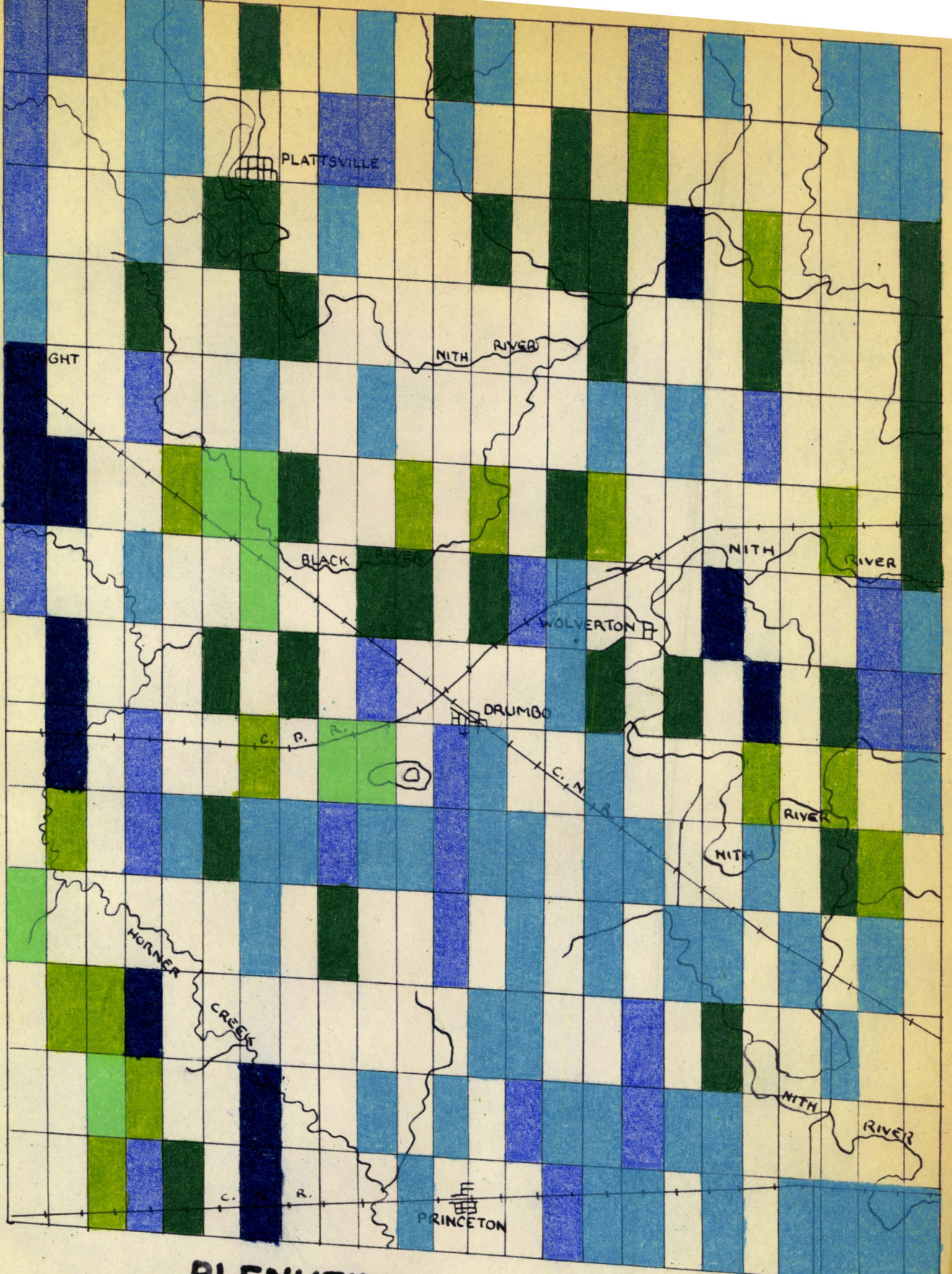


PLATE # 12

**BLENHIM TOWNSHIP**  
**SAMPLE OF LAND VALUES IN DOLLARS**

- 0-10
- 10-15
- 15-20
- 20-25
- 25-35
- OVER 35

SCALE 1 IN. = 1 1/3 MI



improved pasture the values range between twenty and thirty dollars per acre.

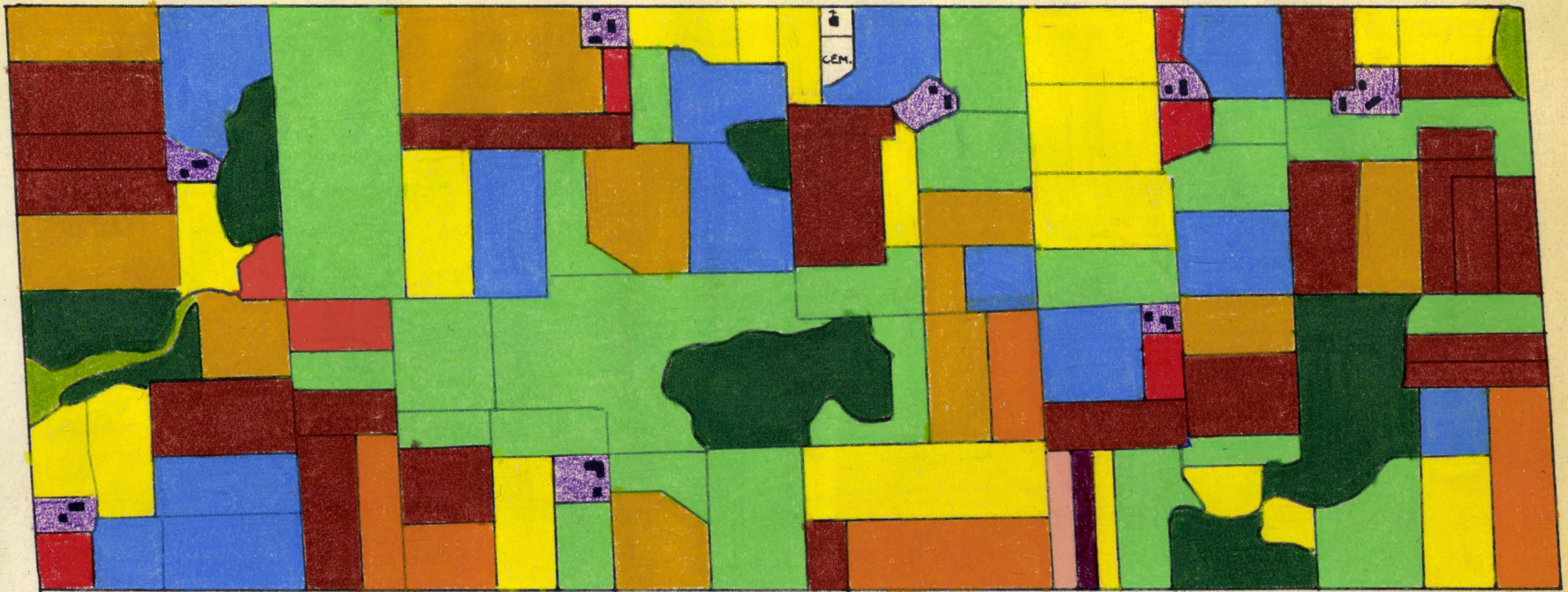
All the land showing values of over thirty-five dollars per acre is being utilized for the production of tobacco. The greater portion of these farms are found on the Sand Plain land type but there are other areas which have qualities favourable to tobacco. Examples of these are the two blocks found in the east-central portion of the township between concessions seven and eight. A few of these tobacco farms are assessed as much as fifty-five dollars an acre, attesting to the economic importance of this type of farming.

(d) Land Use

In order to better understand the agricultural land use of the township a series of sample blocks were studied through actual field observations. A discussion of their location and present land use is given in the following sections.

(i) Sample Block "A" (Plate #13)

This sample is found in the Morainic Uplands land type and represents the east-central concession block below the northern boundary of the township. The large frequency of pasture and hay is indicative of the emphasis placed on livestock in this area. Corn, mixed grain and oats are also grown and are generally used as feed for livestock. Both dairy and beef cattle are kept along with a few hogs. Wheat is grown mainly for feed rather than as a cash crop. There are small orchards associated with some of the farmsteads but these are of little significance. A few acres of root crops are grown in the south-east corner. All available land is used for



# LAND USE : SAMPLE BLOCK A



## LEGEND

	PASTURE
	WHEAT
	GRAIN
	HAY
	CORN
	OATS

	WOODS
	SCRUB
	POTATOES
	TURNIPS
	ORCHARD

	IDLE
	FARMSTEAD
•	HOUSE
	BARN
	STREAM

SCALE 4 IN. = 1 MI.



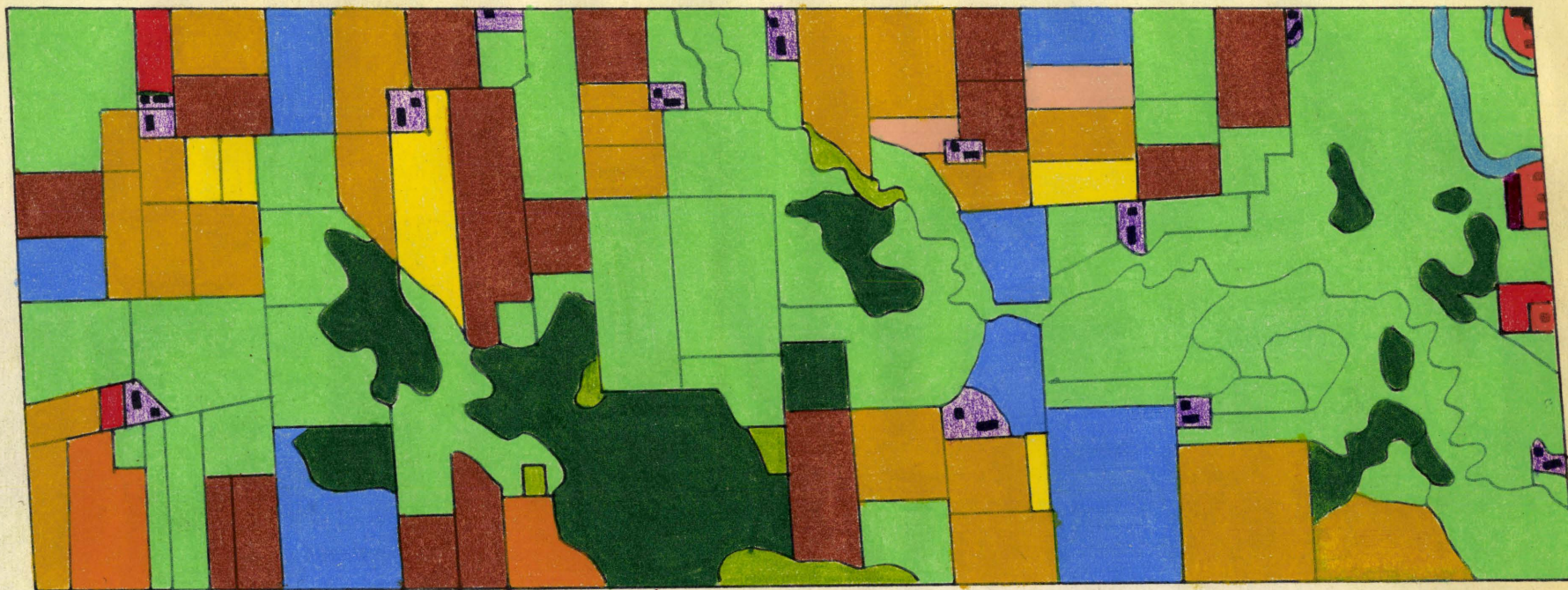
agriculture except for the small number of woodlots.

(ii) Sample Block "B" (Plate #14)

This block is found in the southern portion of the Fluted Till Plain land type. The urban land found in the north-east corner and along the eastern boundary is associated with the village of Plattsville. Of particular note, is the amount of pasture found adjacent to the Nith River and its tributary, Wilmot Creek. This pasture is devoted mainly to beef cattle whereas the remaining pasture is a little better and is devoted chiefly to dairy cattle. Once again there is a large acreage of hay and the field crops, corn, oats, mixed grain and wheat are grown chiefly for feed for the livestock. A very small amount of wheat is grown as a cash crop. There are a few orchards and a small acreage of turnips. The wooded areas are farm woodlots rather than swamp.

(iii) Sample Block "C" (Plate #15)

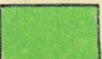





This block is found directly to the south-west of Richwood in the Undrumlinized Till Plain land type. The acreage devoted to pasture is less in this area than in the north but the amount of hay is relatively the same. The pasture is improved and dairy cattle are the dominant type of livestock. A greater amount of land is utilized for field crops such as corn, oats, wheat and mixed grain. The wheat grown in this area is not for feed but for milling. There are a few acres devoted to turnips as a cash crop. The amount of idle land is negligible and the incidence of woodlots or swamp is small. The block is fairly well drained, having a permanent tributary to the Nith River traversing it.







# LAND USE : SAMPLE BLOCK B



## LEGEND

	PASTURE
	WHEAT
	GRAIN
	HAY
	CORN
	OATS

	WOODS
	SCRUB
	ORCHARD
	URBAN
	CEMETERY

	TURNIPS
	FARMSTEAD
	HOUSE
	BARN
	STREAM

SCALE 4 IN. = 1 MI.



# LAND USE : SAMPLE BLOCK C

## LEGEND



	PASTURE
	WHEAT
	GRAIN
	HAY
	CORN
	OATS

	WOODS
	IDLE
	ORCHARD
	CEMETERY

SCALE 4 IN. = 1 MI.

	FARMSTEAD
•	HOUSE
—	BARN
	STREAM
	TURNIPS

(iv) Sample Block "D" (Plate # 16)

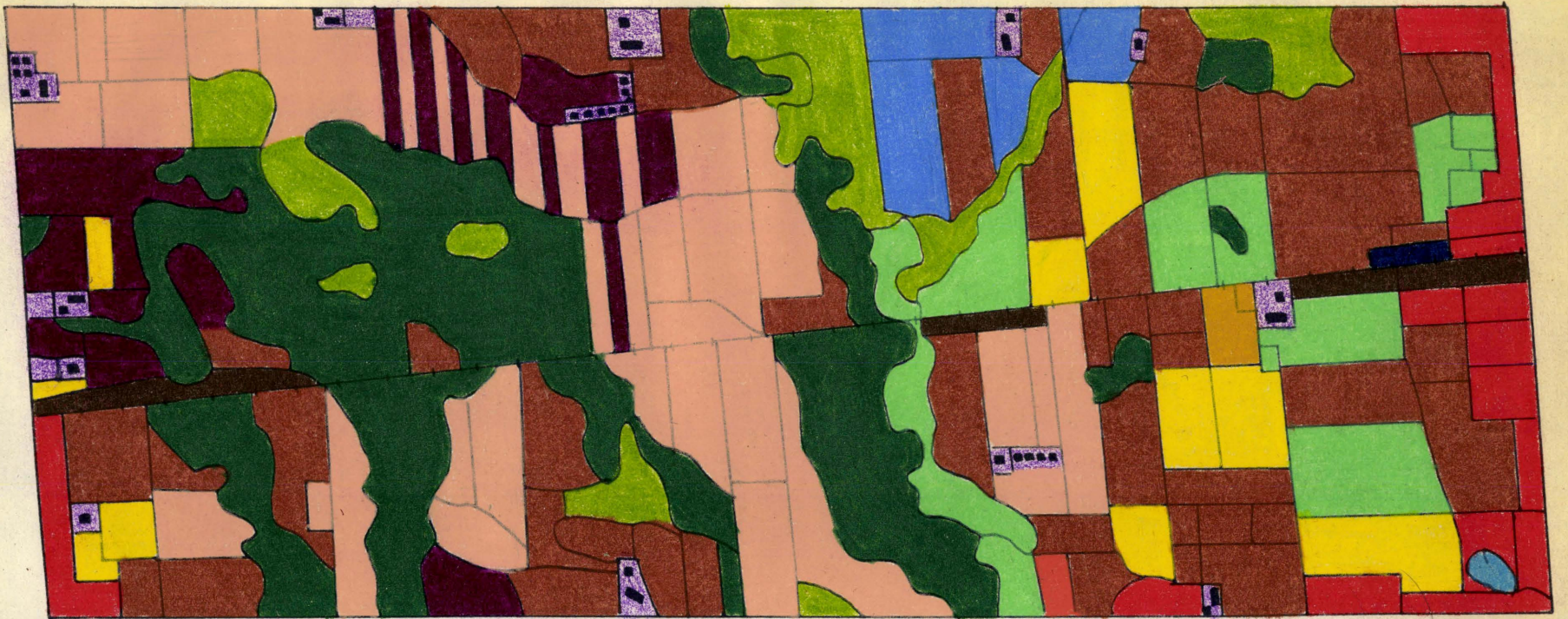
This block is found in the Sand Plain land type, bordering No. 2 Highway. The urban land shown is associated with the village of Princeton and the railroad is a branch line of the C.N.R. which serves that village. The flatness of the sand plain results in many swampy areas and areas of poor drainage, which are left idle or in scrub. The importance of tobacco is readily seen on the map. Associated with the tobacco are alternating strips or fields of rye. There is very little pasture but the incidence of hay is still high. There are also only small acreages of corn and oats. The linear expansion of Princeton is shown by the elongated distribution of urban land along the major routeways of the township.

(v) Sample Block "E" (Plate # 17)

This block is found in the River Flats land type along the eastern boundary, between concessions ten and eleven. The pasture surrounding the Nith River, in the north-east corner is utilized mainly for beef cattle whereas much of the pasture along the southern boundary serves as grazing land for sheep. Hay and pasture are common and a large acreage is devoted to corn. A few hogs are kept as well. The wheat is grown mainly for feed. There are a few large woodlots and a small area of slash. Once again the infrequency of idle land attests to the general intensive use of the land in this township.

(e) Land Capability

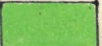





An agricultural land capability table has been prepared for Blenheim Township from material obtained from the Conservation Branch






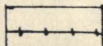



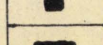

# LAND USE : SAMPLE BLOCK D

## LEGEND



	PASTURE
	WHEAT
	OATS
	RYE
	TOBACCO
	HAY

	CORN
	WOODS
	SCRUB
	IDLE
	URBAN
	CEMETERY

	RAILROAD
	RAILYARD
	FARMSTEAD
	HOUSE
	BARN
	HYDROGRAPHY

SCALE 4 IN = 1 MI.



# LAND USE : SAMPLE BLOCK E

## LEGEND



	PASTURE
	WHEAT
	HAY

	CORN
	SLASH
	WOODS
■	HOUSE

■	BARN
	FARMSTEAD
	HYDROGRAPHY

SCALE 4IN.=1MI.

of the Department of Planning and Development. This table is given below along with a very general description of the land to be found in each class. Unfortunately there was no available map for these land capability classes at the time this report was compiled.

USE	LAND CAPABILITY CLASSES								TOTAL ACRES
	I	II	III	IV	V	VI	VII	WATER	
Idle	40	270	99	24	369	43	--	--	845
Wood Land	9	293	37	5	1624	18	12	--	1998
Hay	257	1102	219	122	122	95	8	--	1925
Grain	445	1708	394	143	213	119	--	--	3022
Row Crops	69	522	48	47	10	8	--	--	704
Horticultural	29	216	53	29	14	2	--	--	343
Urban	---	82	---	2	25	---	--	--	109
Pasture	120	629	211	52	773	66	1	--	1852
Water	---	---	---	---	---	---	--	28	28
Total Acres	969	4822	1061	424	3150	351	21	28	10826

#### Class I

This class includes all land suitable for cultivation without special conservation measures. It must be nearly level, workable, productive, well drained and not subject to erosion or overflow. This land requires the addition of plant foods that are used by crops or lost by leaching. These plant foods may be returned by barnyard manure, green manure crops or commercial fertilizers. Crop rotations to assist in maintaining the productivity are recommended.

#### Class II

This land is suitable for permanent cultivation with some

simple practices often required. Chief types of practices needed are erosion control, water conservation, correction of moderately low fertility and the removal of boulders.

#### Class III

This land is suitable for permanent cultivation with intensive conservation measures. It requires careful and intensive application of practices to conserve soil and water. Similar practices are used as those in Class II land only they are more intensive. Class III land is characterized by steeper slopes, more erosion, stones, boulders and often poor drainage.

#### Class IV

This land is suitable for occasional or limited cultivation. It is generally handicapped by scrub tree growth, steeper slopes, a greater degree of erosion, less fertile soils, and restrictions by stones and boulders. Class IV land may be set aside as a pastured area to be broken up and reseeded every fifth or sixth year.

#### Class V

This land is suitable for permanent vegetation that may be used for grazing or woodland. It is not subject to erosion but is often too wet or stony for cultivation.

#### Class VI

This land is suitable for permanent vegetation that may be used for restricted grazing or woodlot. When used for grazing such restrictions as carrying capacity, deferred grazing and rotation of grazing should be practised.



Class VII

This land is not suitable for cultivation and requires severe restrictions if used for grazing. Much of this land should be kept in woodlot or reforested. It is highly susceptible to erosion.

## CHAPTER 5 - SUMMARY AND CONCLUSION

### (a) Summary

Blenheim Township lies adjacent to and north of No. 2 Highway in the area between Paris and Woodstock. The bedrock is everywhere covered by a deep mantle of glacial drift built up during the Pleistocene period of glaciation and as such has very little direct effect on the topography. The surface relief is entirely the result of glaciation and post-glacial erosion. On the whole, the township is physically diverse and displays such excellent examples of glacial landforms as spillways, till moraine, kame moraine, till plain and sand plain. Drainage is fairly good over most of the area but there are several swamps in low-lying spillways and on the sand plain.

There is a great variety of soil types found in the township ranging from heavy-textured clay loams and loams to medium-textured silt loams to light-textured sandy loams and sands. The climate is of the humid microthermal type with warm summers, cold winters and a fairly uniform and adequate moisture supply. The natural forest cover is basically deciduous with an admixture of coniferous. At present, it occupies only 8% of the total land area and this is made up of farm woodlots and swamps.

Taking into account the specific physical factors such as drainage, relief and soils, the writer has divided the township into distinct physical units. Within each of these units or land types there are similarities in soils, drainage and relief.

The township was first settled by the white man in 1794 and

progress was fairly rapid. The agricultural potentialities became readily visible as the forest cover was gradually removed. By 1871, it was a highly developed and fairly intensively used agricultural district. After this date came a period of rural depopulation caused not by limiting physical factors but by the economic factors of the time. Only in the last fifteen years has the township overcome this trend and is now in a period of increasing population. This is largely due to the introduction of specialized agriculture.

Recreational land use and urban land use are the only non-agricultural types of land use in the township. Recreational use is of minor significance whereas urban use is more important. The small villages spaced throughout the area are essential and integral units in the township's life and economy. Plattsville, Drumbo, Princeton and Bright are the most important of these small urban centres.

The principal use of the land in Blenheim Township is for agricultural purposes. There are two main types of farming. The first of these is specialized tobacco production on the better drained, light-textured soils of the sand plain. However, the greatest proportion of the total area is given over to mixed or general farming with a strong emphasis on the raising of livestock. This emphasis has grown out of physical factors which favour production of hay and forage crops. Cultural factors such as the collapse of the wheat market are also responsible for this transition to livestock.

Dairy cattle are the predominant type of livestock and are found throughout the township on the better pastures and grazing areas. Beef cattle are also kept over most of this area and are gradually in-

creasing in numbers. Hog and sheep raising are also common. The only cash crops of importance are wheat and turnips. A very large acreage is devoted to fodder, forage and field crops which are produced mainly for livestock.

(b) Conclusion

From this study it can be concluded that the present day land utilization in Blenheim Township has been the result of many factors rather than any one particular factor. Physical factors such as warm summers, a favourable growing season, and a variety of soil types have combined with man's own improvements on soils, drainage, and farm methods to produce a generally prosperous agricultural area. Transportation improvements both in road and rail connections and the proximity to large urban markets have also aided the agricultural development.

The predominance of natural pasture in certain sections is related to the nature of the topography. In other parts, the slopes and soil types are conducive to more intensive uses and to the cultivation of field crops. This combination of physical features can best be utilized for livestock farming, the type which has become most important in all sections except the sand plain where the emphasis is on tobacco.

Soil erosion is not a critical problem except in areas of steep slopes. The main problem, as it limits agriculture, appears to be that of drainage. The thriving tobacco production has progressed to the point that there is no available land for further production. There are several areas which have the soil and climatic requirements

for this crop but drainage schemes must be introduced before they can be utilized.

It is quite feasible that a more intense soil conservation program and an introduction of drainage schemes would result in a further increase in agricultural production in Blenheim Township.

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XIV  
XIII  
XII  
XI  
X  
IX  
VIII  
VII  
VI  
V  
IV  
III  
II  
I



PLATE # 2

### PHYSIOGRAPHY of BLENHEIM TOWNSHIP

- |   |                          |   |              |
|---|--------------------------|---|--------------|
|  | SPILLWAY                 |  | KAME MORaine |
|  | DRUMLINIZED TILL PLAIN   |  | TILL MORaine |
|  | UNDRUMLINIZED TILL PLAIN |  | SAND PLAIN   |

SCALE 1 IN. = 1 MI.

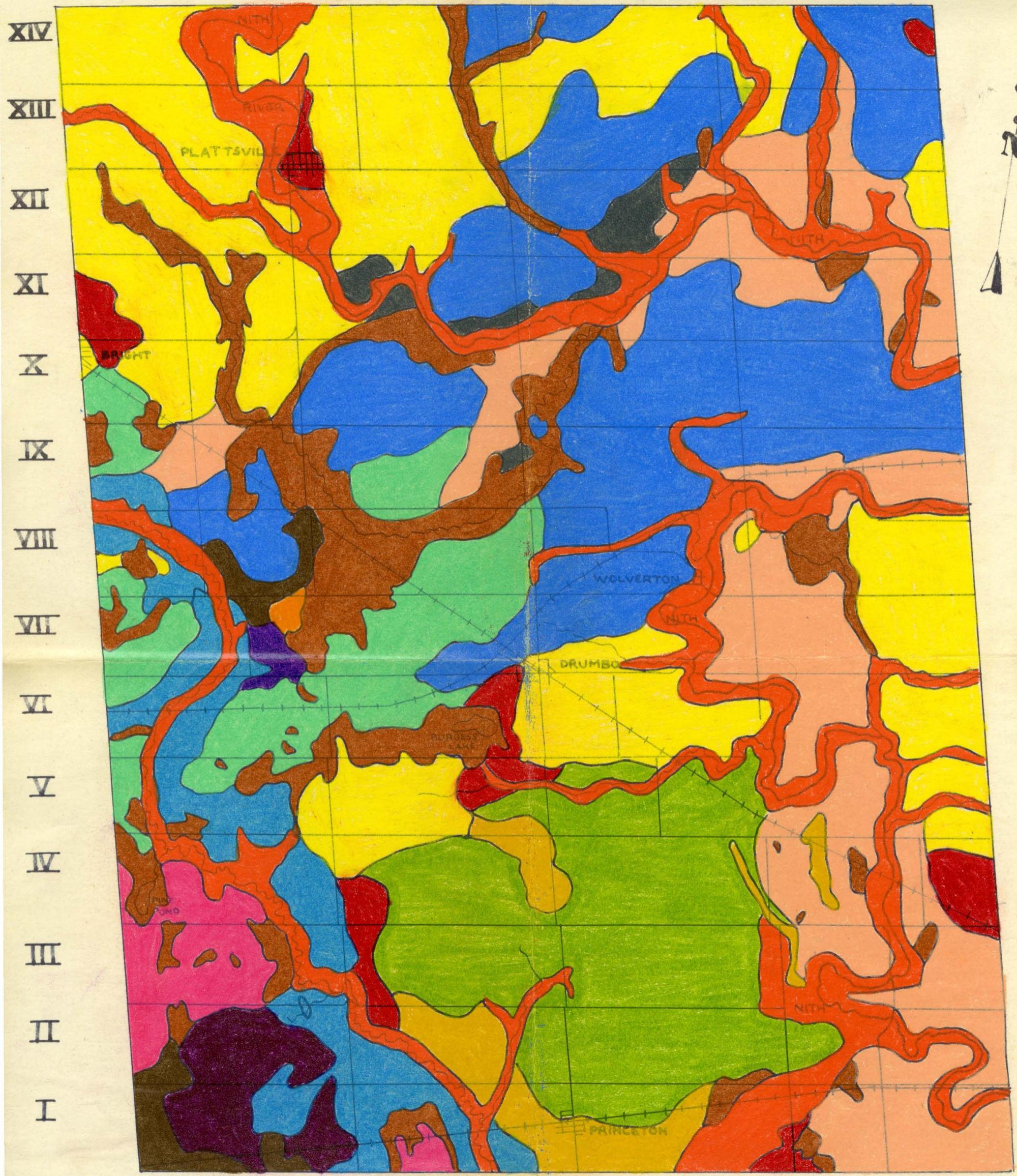


PLATE #3

## SOIL MAP of BLENHEIM TOWNSHIP

- |   |  |   |
|---|--|---|
| <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #f4a460; border: 1px solid black; margin-right: 5px;"></span> BOTTOM LAND</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #8b4513; border: 1px solid black; margin-right: 5px;"></span> MUCK</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #fff9c4; border: 1px solid black; margin-right: 5px;"></span> HURON SILT LOAM</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #90ee90; border: 1px solid black; margin-right: 5px;"></span> PERTH SILT LOAM</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #ff8c00; border: 1px solid black; margin-right: 5px;"></span> PARKHILL LOAM</li> </ul> | <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #4682b4; border: 1px solid black; margin-right: 5px;"></span> GILFORD LOAM</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #800000; border: 1px solid black; margin-right: 5px;"></span> LONDON LOAM</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #f08080; border: 1px solid black; margin-right: 5px;"></span> BURFORD LOAM</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #ffff00; border: 1px solid black; margin-right: 5px;"></span> GUELPH LOAM</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #0000ff; border: 1px solid black; margin-right: 5px;"></span> DUMFRIES LOAM</li> </ul> | <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #90ee90; border: 1px solid black; margin-right: 5px;"></span> DUMFRIES SANDY LOAM</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #8b4513; border: 1px solid black; margin-right: 5px;"></span> BERRIEN SANDY LOAM</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #4682b4; border: 1px solid black; margin-right: 5px;"></span> FOX SAND</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #800000; border: 1px solid black; margin-right: 5px;"></span> BRADY SAND</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #800080; border: 1px solid black; margin-right: 5px;"></span> GRANDBY SAND</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #ff69b4; border: 1px solid black; margin-right: 5px;"></span> BOOKTON SANDY LOAM</li> </ul> |
|---|--|---|

SCALE 1 IN. = 1 MI.









XIV  
XIII  
XII  
XI  
X  
IX  
VIII  
VII  
VI  
V  
IV  
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I



PLATE # 2

### PHYSIOGRAPHY of BLENHEIM TOWNSHIP

- |  |  |
|--|--|
|  SPILLWAY                 |  KAME MORAINE |
|  DRUMLINIZED TILL PLAIN   |  TILL MORAINE |
|  UNDRUMLINIZED TILL PLAIN |  SAND PLAIN   |

SCALE 1 IN. = 1 MI.



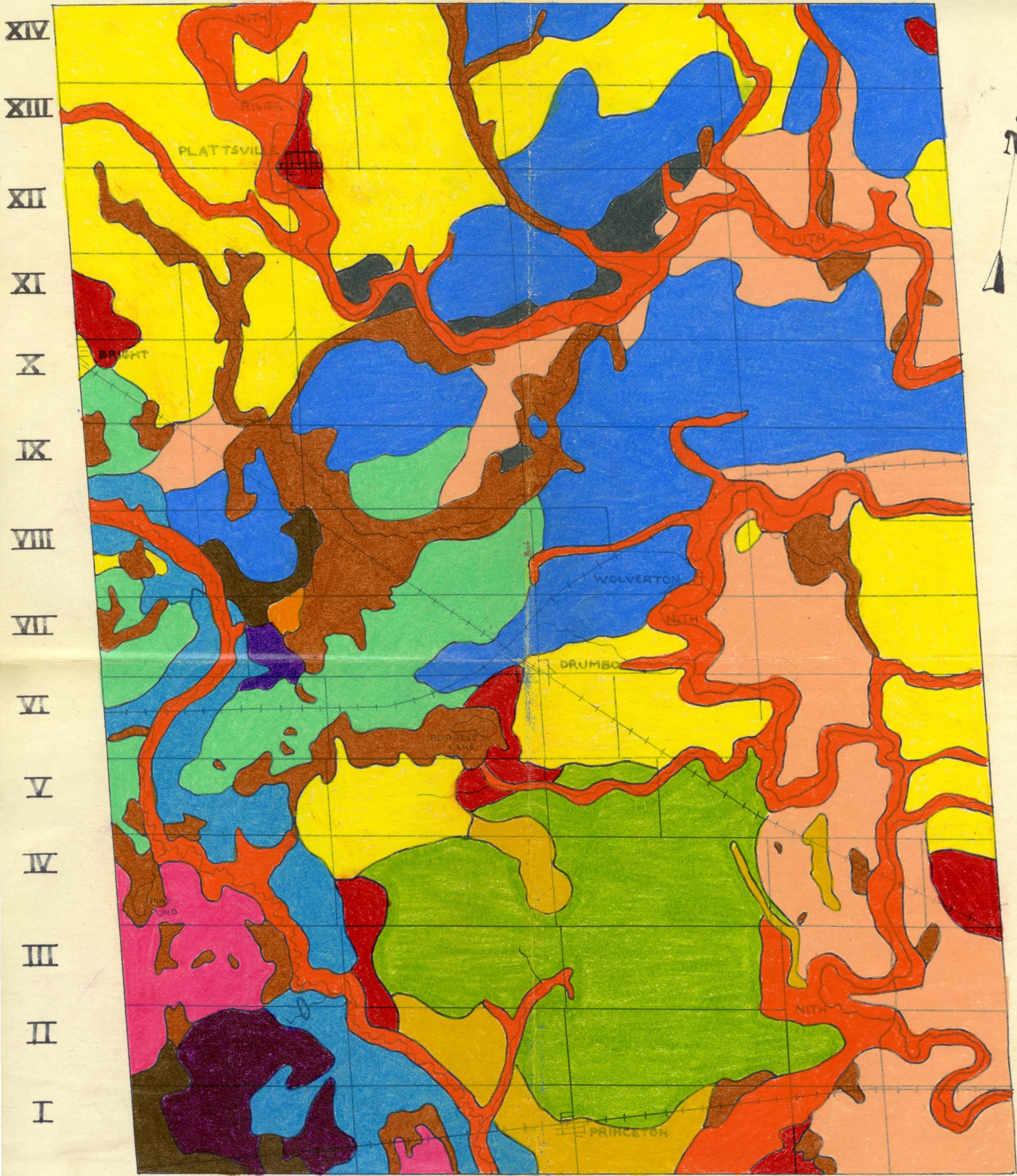


PLATE #3

## SOIL MAP of BLENHEIM TOWNSHIP

- BOTTOM LAND
- MUCK
- HURON SILT LOAM
- PERTH SILT LOAM
- PARKHILL LOAM

- GILFORD LOAM
- LONDON LOAM
- BURFORD LOAM
- GUELPH LOAM
- DUMFRIES LOAM

- DUMFRIES SANDY LOAM
- BERRIEN SANDY LOAM
- FOX SAND
- BRADY SAND
- GRANBY SAND
- BOOKTON SANDY LOAM

SCALE 1 IN. = 1 MI.