ONEIDA TOWNSHIP

By

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A C K N O W L E D G E M E N T S

The writer wishes to express his appreciation for the advice and aid received from Professor L. G. Reeds, who supervised this study, and from Professor H. A. Wood, both of the Department of Geography at McMaster University.

Mention must also be made of the co-operation received from the members of the Department of Soils at the Ontario Agricultural College in preparing the section on soils.

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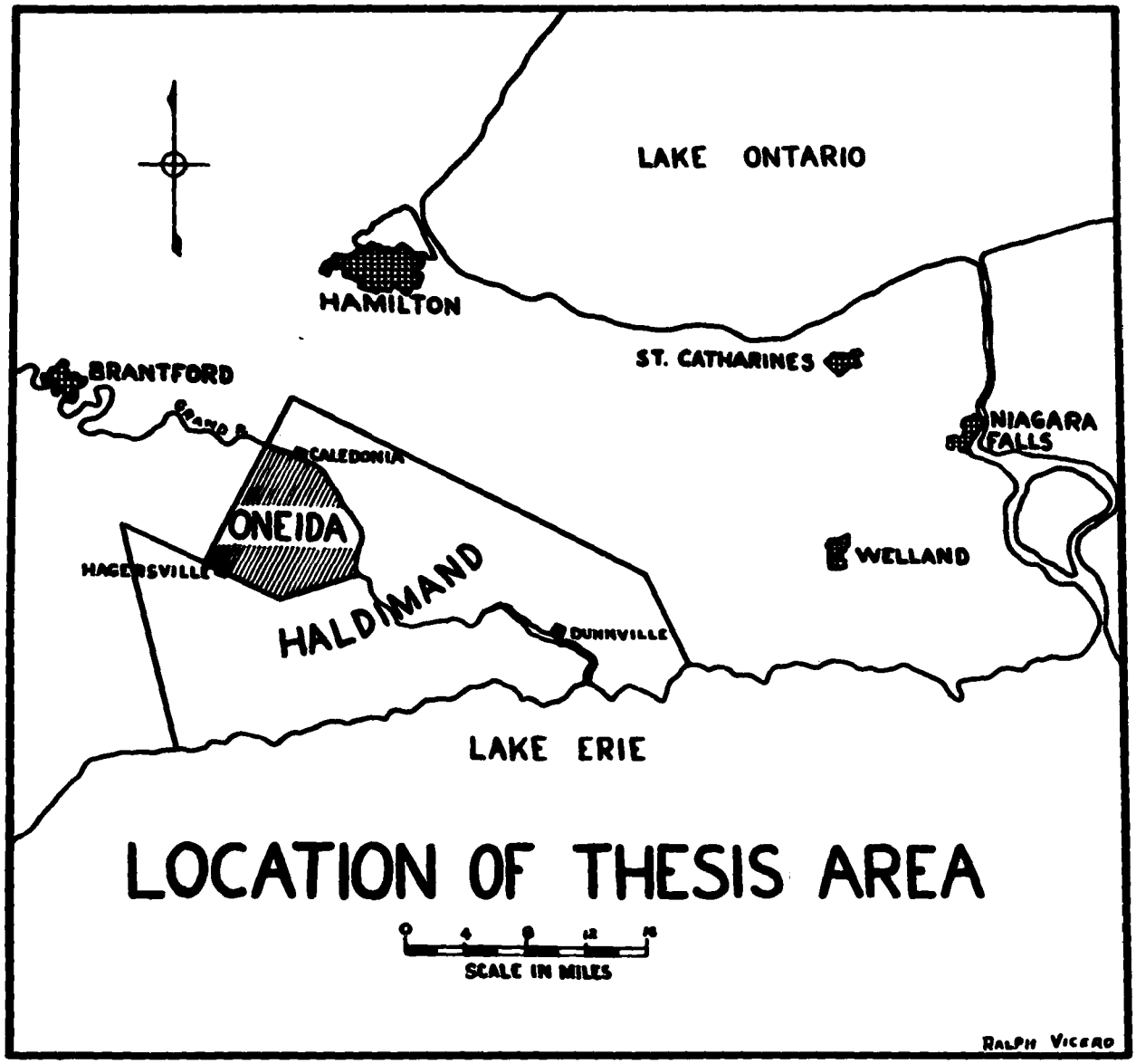
PREFACE

Oneida Township occupies a position at the western extremity of the Niagara Peninsula and lies midway between Lakes Ontario and Erie. The study area comprises one of the ten townships of Haldimand. Its position in relation to southeastern Ontario is shown in Map 1.

Highway 6 is the only important road passing through the area and provides an excellent route to Hamilton which is only fourteen miles away. Map II is the Key Map and shows all communication routes, the location of the various communities and industries, and other information needed to understand the geography of Oneida.

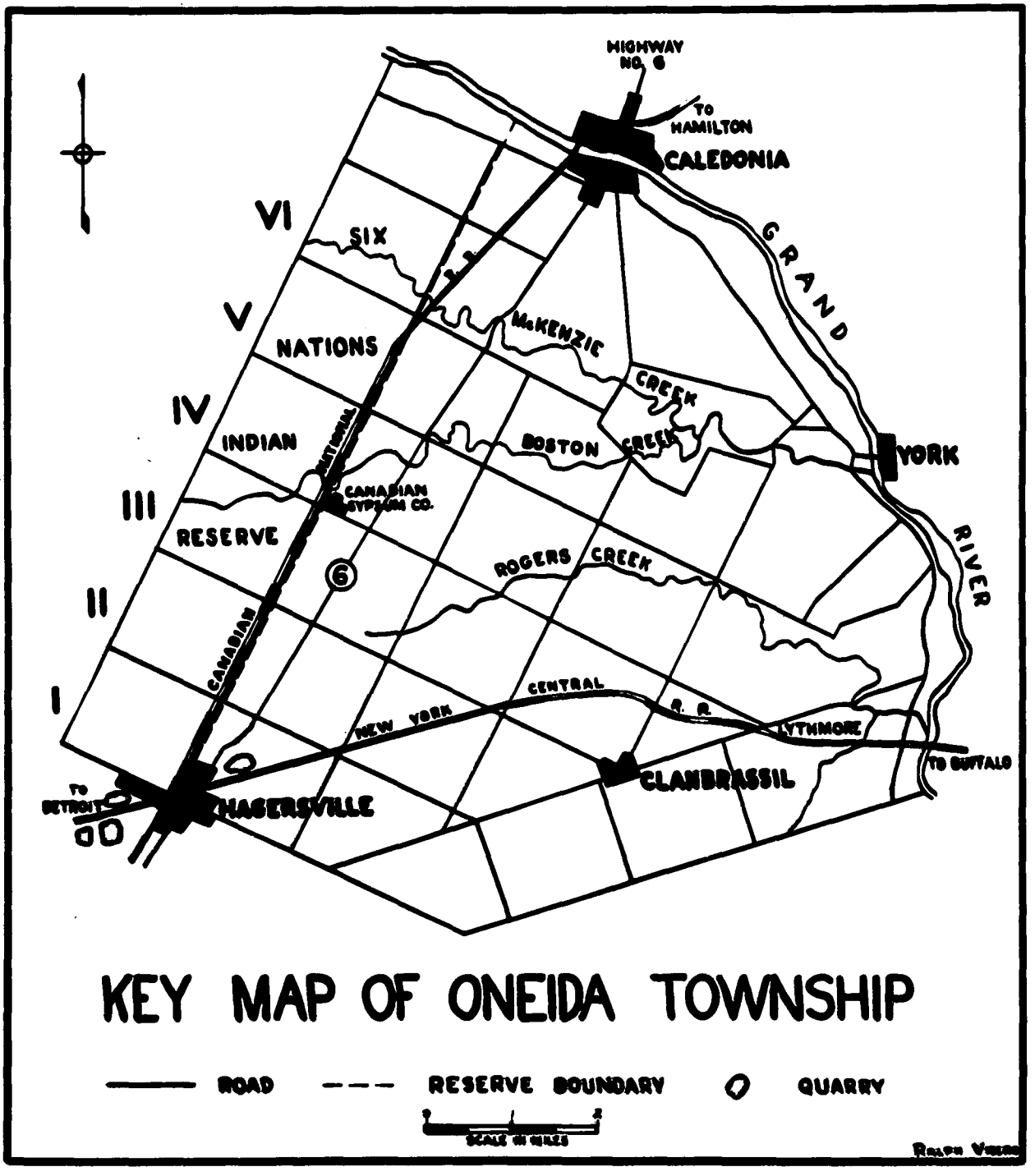
The study is divided into eight chapters. In the first chapter, the elements of the physical geography are discussed while Chapters II and III trace the history of settlement and the evolution of land use. Chapter IV deals with the Six Nations Indian Reservation and its associated social problems. Non-agricultural land use is discussed in Chapter V while the present day agricultural economy is analysed in the following section. An urban study, and the summary and conclusions complete the thesis.

This thesis is intended to be a geographic study of Oneida Township presented on a regional basis. The area will be studied systematically with a view to determining the basic land utilization pattern. The Land Utilization Map in the back cover folder illustrates the land use on a field by field basis and is the result of systematic field observations.


LAKE ONTARIO
HAMILTON
BRANTFORD
ST. CATHARINES
NIAGARA FALLS
CALEDONIA
ONEIDA
HAGERSVILLE
HALDIMAND
WELLAND
DUNNVILLE
LAKE ERIE
LOCATION OF THESIS AREA
SCALE IN MILES
RALPH VICCARO

MAP I

During the course of the thesis an attempt will be made to show how the agricultural development of Oneida reflects the influence of both cultural and physical factors.


HIGHWAY NO. 6
TO HAMILTON
CALEDONIA
VI
SIX
NATIONS
V
IV
INDIAN
RESERVE
III
II
I
GRAND
RIVER
McKENZIE
CREEK
BOSTON CREEK
YORK
CANADIAN GYPSUM CO.
ROGERS CREEK
CANADIAN NATIONAL
NEW YORK CENTRAL R. R.
LYTHMORE
TO BUFFALO
CLANBRASSIL
HAGERSVILLE
TO DETROIT
KEY MAP OF ONEIDA TOWNSHIP
ROAD
RESERVE BOUNDARY
QUARRY
SCALE IN MILES
RALPH VEALE

MAP II

CHAPTER I

PHYSICAL GEOGRAPHY OF ONEIDA TOWNSHIP

Geology

In Oneida Township geology has assumed an important role in the development of the region. Industrialization in the area is almost wholly dependent on the geologic resources. Much of the physical and human geography results from geological influence while the bedrock has had definite affects on land use in the Township. A thorough knowledge of the geology of Oneida thus becomes necessary for a full understanding of the development of the area.

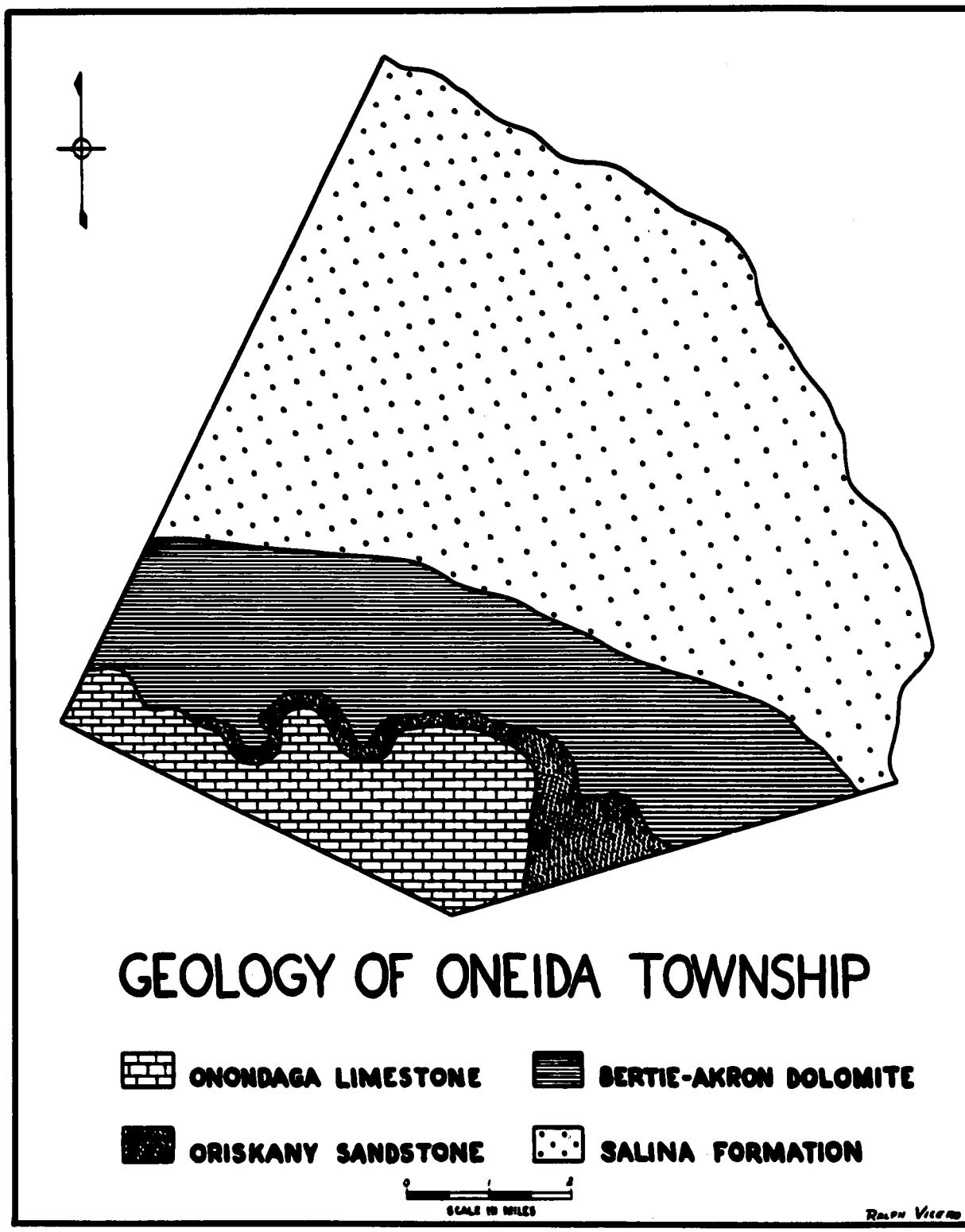
Bedrock Geology

The Township lies within the Ontario lowlands and forma part of the Palaeozoic plain which stretches southward from the Canadian Shield.[1] It is entirely underlain by sedimentary strata with the Silurian and Devonian systems forming the bedrock. (See Map III)

The oscillating seas of the Silurian period resulted in the Clinton formation, which although it does not outcrop in Oneida is of extreme importance to the area because of its value as a resevoir for natural gas. The Clinton is essentially a mass of light grey semi-crystalline limestone which passes into bluish shale at its base.

Toward the close of the Silurian period a slight emergence of the continent converted part of the Silurian Sea into a partially enclosed

1 Unless otherwise acknowledged the information on geology has been obtained from the publications of the Canadian Geological Survey. A list of these appears in the bibliography.


GEOLOGY OF ONEIDA TOWNSHIP
ONONDAGA LIMESTONE
BERTIE-AKRON DOLOMITE
ORISKANY SANDSTONE
SALINA FORMATION
0
1
2
SCALE IN MILES
RALPH VILCOX

MAP III

basin. Consequent aridity caused rapid evaporation and as a result large saline beds formed. The Salina formation in Oneida comprises the bedrock over the northern two-thirds of the Township and is the source of the large gypsum deposits now being worked in the area.

The Salina is dominantly calcareous and shows an alternation of distinct grey and brown intervals. The grey consists of dolomitic shale while the brown is composed by crystalline dolomite. Gypsum is found throughout the succession but the largest quantities are associated with the dolomitic shale zones.

Bordering the Salina to the south in a strip from one to two miles in width is the last Silurian deposit, the Bertie-Akron formation. This series consists of thin bedded to platy, brownish-grey, argillaceous dolomite underlain by dark, hard, compact calcareous and carbonaceous shale. An analysis of the Bertie-Akron shows the following composition: 52% $CaCo_3$, 41% $MgCo_3$, 4% SiO_2.

The Silurian period was brought to a close by a period of continental uplift which resulted in a regression of the existing seas and initiated a period of erosion. This was followed by the invasion of the Devonian seas and the deposition of the Oriskany sandstone. Although patchy in many areas, the Oriskany is found in a narrow band running parallel to the Silurian deposits in the southern part of the Township. It consists of a light grey to white or yellowish, coarse-grained, friable sandstone.

The youngest Devonian formation in Oneida is the Onondaga limestone which outcrops in a narrow belt in the extreme south of the study area. The Onondaga strata consist of grey to bluish, finely

crystalline to dense limestone in beds from 6" to 18" thick. The bedding planes have been made irregular by the development of grey and bluish chert in thin, fairly continuous, lensy beds and nodular masses. Chemical tests of the Onondaga show the following composition: 64% $CaCo_3$, 29% SiO_2, 1% $MgCo_3$. The high silica content of this limestone gives it a greater hardness and toughness than non-siliceous limestones and makes it ideal for road building.

The Onondaga terminates to the north in a low-lying escarpment which follows an inconspicuous and interrupted course across the Township. This escarpment owed its formation to the differential erosion of the soft Salina shales along its base and the harder dolomites and limestones which form its crest. The presence of the Onondaga Escarpment with its soil-stripped surface has had an important effect upon the geography of the area. It has in large part determined the drainage pattern of the region and has provided sites for towns and roads. Meanwhile, the limestone caprock has been the foundation of the extensive quarrying development at Hagersville.

The Palaeozoic rocks of Ontario have suffered no strong deformation and are generally flat-lying. They have, however, a gentle dip toward the southwest which in the study area averages about 30 feet a mile.

Glacial Geology

Oneida Township lies within an area which has been glaciated at four different periods in geologic history. The last of these glaciations, the Wisconsin, transported the surface deposits which we find at present over the Township. The ice sheet fanning out from Lake

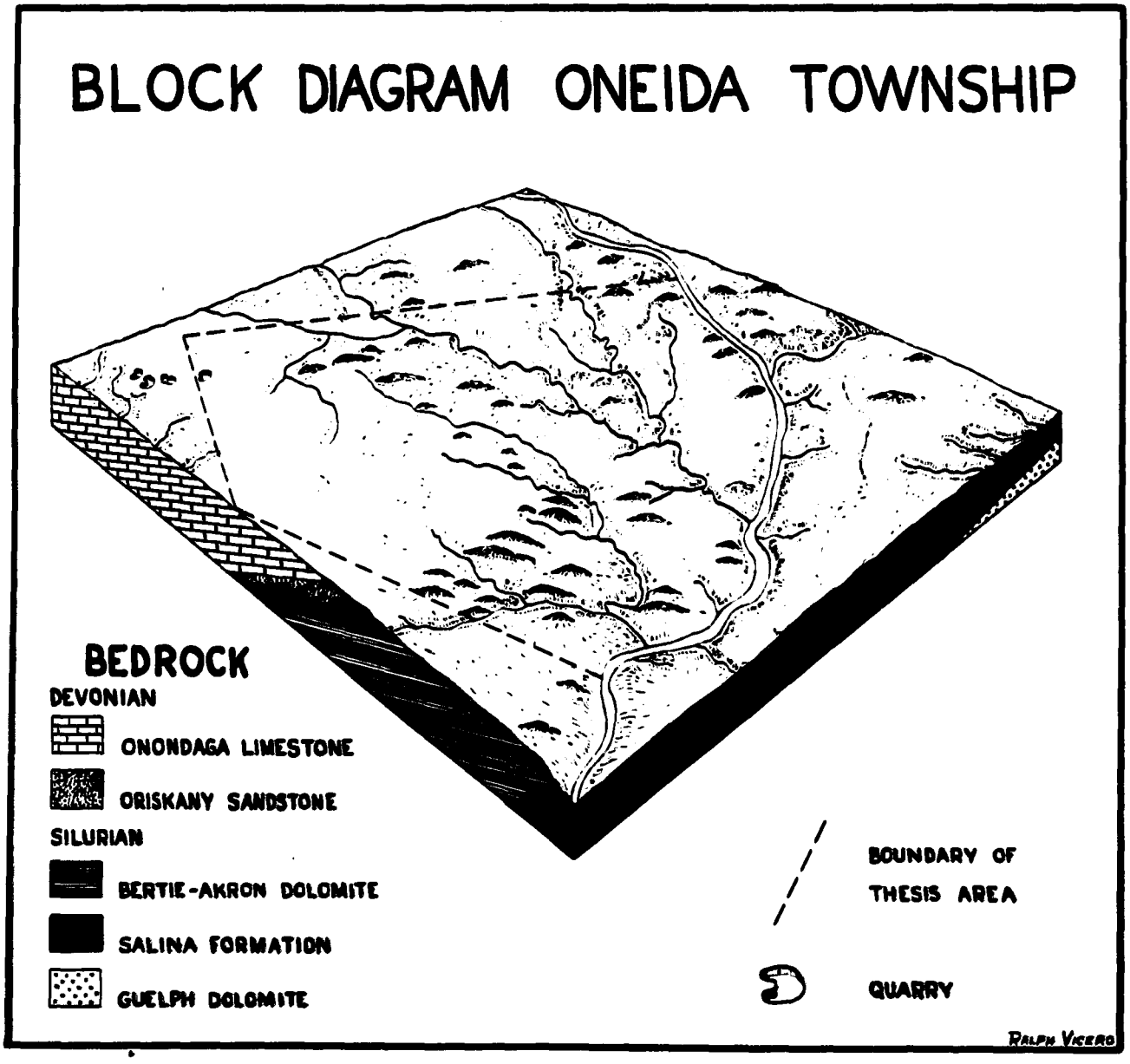

BLOCK DIAGRAM ONEIDA TOWNSHIP
BEDROCK
DEVONIAN
ONONDAGA LIMESTONE
ORISKANY SANDSTONE
SILURIAN
BERTIE-AKRON DOLOMITE
SALINA FORMATION
GUELPH DOLOMITE
BOUNDARY OF THESIS AREA
QUARRY
RALPH VICERO

DIAGRAM I

Ontario formed wide till plains in the Niagara peninsula. In the thesis area, some of this till was moulded into drumlins which lie with their axes bearing about s.70°W. Along the brow of the Onondaga Escarpment a large part of the till was swept away by the advancing ice sheet.

With the retreat of the ice, large glacial lakes formed. One of these, Lake Warren, inundated Oneida Township and deposited a deep layer of clay over the till which either covered or partially buried many of the drumlins. The resultant development has been an association of clay flats and drumlins protruding through these lacustrine deposits.

In the southern part of Oneida especially, the drift becomes comparatively thin so that the present surface of the land reflects the structure of the underlying rock. The Onondaga Escarpment forms the height of land running across the southern part of the study area and divides the drainage system into those streams flowing north to the Grand River and those flowing south to Lake Erie.

The Grand River which forms the northern boundary of the Township is closely associated with the retreat of the glacial lakes. The course of the Grand, which is cut in the soft Salina Vale, was probably deflected by the Lythmore drumlin field while at Cayuga the Onondaga Escarpment causes the river to make a sharp bend.[1]

Climate

According to the classification of Köppen, Oneida Township lies in a region which he designates as a Dfb climate.[2] This type represents a humid microthermal climate in which we have cold winters and

1. Chapman & Putnam, Physiography of Southern Ontario, 1951
2. Trewartha, G.T., An Introduction to Weather & Climate, 1943

warm summers with sufficient precipitation throughout the year for general farming.

Within this broad climatic zone there are regional variations caused by local circumstances. Thus Chapman and Putnam include Oneida in their climatic zone known as the Lake Erie Counties.[1] Being a comparatively small area with little relief, the Township has a uniform climate which is the same as that of the region in which it lies.

Situated at 42'N latitude, Oneida Township lies within an area which is directly in the path of the strongest westerly winds and the majority of the cyclonic storms which cross the continent from west to east. The passage of these storms produces a characteristic type of climate which is noted for its extreme changeability.

Lying midway between Lake Ontario to the north and Lake Erie to the south, Oneida has a modified climate. The influence of these lake waters can be seen in the daily temperature range, frost dates and length of the growing season which are all more favourable than in the adjacent interior regions. The climate is generally quite satisfying for mixed farming.

The following data compiled for the Lake Erie Counties gives a good summary of climatic conditions in Oneida Township:

Mean Annual Temperature	46 F
Mean Winter Temperature	23 F
Mean Spring Temperature	43 F
Mean Summer Temperature	67 F
Mean Fall Temperature	49 F
Extreme Low Temperature	-34 F
Extreme High Temperature	106 F
Daily Range of Temperature	18 F
Average Date of Last Frost in Spring	May 10
Average Date of First Frost in Fall	Oct 10
Average Length of Frost-Free Period (days)	153
Length of Growing Season (days)	203
Average Annual Precipitation	33.8"

1 Chapman & Putnam, The Climate of Southern Ontario (Sc. Agr. 1938)

Average Annual Snowfall	61"
Average Summer Precipitation	8.8"
P.E. Index (Summer)	12.5
Possible Sunshine in Growing Season	54%

Natural Vegetation

According to the classification drawn up by Halliday, Oneida Township lies in the Niagara section of the Deciduous Forest Region.[1] Many deciduous trees in Canada reach their northern limit in this section. The tree associations are predominantly composed of the broad-leafed varieties. Several species, such as the chestnut, tulip tree, hickory, mulberry, rock elm and silver maple find their northern limits in this region.

The characteristic association found in the thesis area is composed of beech and sugar maple on the well-drained sites while on the poorly drained sections are found basswood, red maple, and the red, white and bur oak. One authority describing the old Plank Road states, "The planks, three inches thick, were of pine, oak, maple, beech and poplar". [2] The same authority states that south of the river, pine was widely found. In the early days of settlement, large areas were covered with swampy vegetation which for a long period hindered development.

Oneida has been closely settled and much of the original forest cover has been cleared leaving only small farm woodlots. The area has, however, about 5,000 acres of woodlot much of which is in second or third growth. A large part of the Indian Reservation is still in bush while many cut-over areas which had been pastured are now supporting a scrub vegetation and are slowly reverting to woodlot.

1 Halliday, W.E.D., A Forest Classification for Canada
Bulletin 89, Forest Service
2 Burkholder, M., Hagersville, Past and Present. 1950

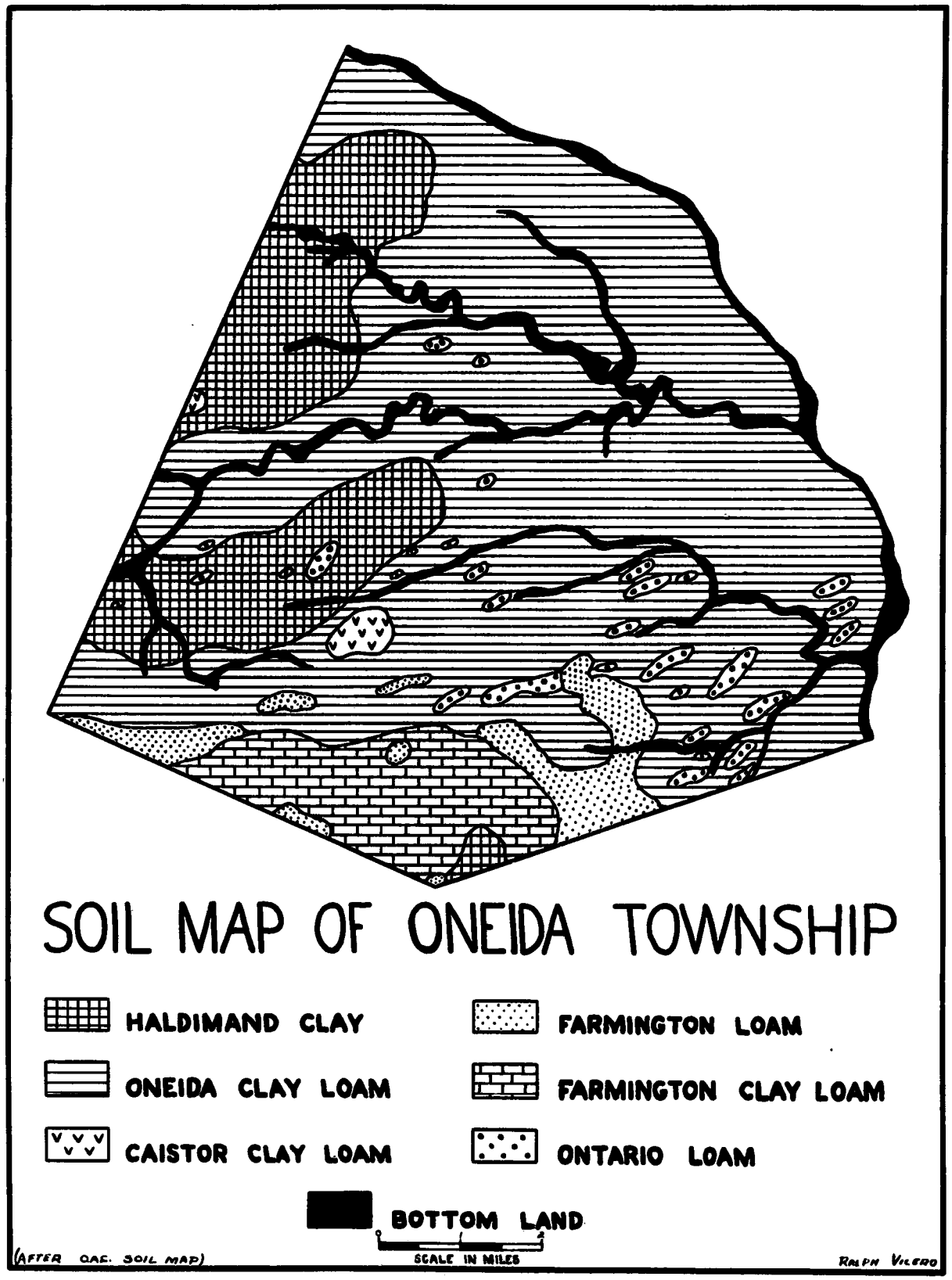
Soils

The study area lies in the Grey-Brown Podzolic Zone of North America. Heaviness of texture, moderate acidity, and low levels of lime and phosphorous are characteristic of the soils in Oneida Township. These soils have been formed from morainic parent materials which contained a large percentage of shale and which were transported from the north by the glaciers. They were subsequently subjected to lacustrine action at which time some deposition took place. The soil survey conducted by the Soils Department of the Ontario Agricultural College shows seven soil types in the Township. These are shown on Map IV.

Haldimand Clay This soil type covers about 6,000 acres in the western part of the study area and could be described as a grey acid (pH of 5.0 - 6.0) soil with fair natural drainage that has developed on a rolling upland of water-washed ground moraine. The surface soil is a light greyish-brown clay or clay loam about 5" or 6" thick. This characteristic grey colour is a result of the low organic matter content.

The A2 layer has 2" to 4" of yellowish-grey clay, often with a fairly high percentage of silt. In areas of poor drainage a yellow-brown mottled layer may be present beneath the A2. The B layer, 8" to 10" thick is composed of a heavy, compact, reddish brown clay horizon found just above the unweathered stratum. The influence of lake waters on this soil is clearly seen in the nature of the profile which in places is almost stone free.

Many streams have cut their courses through this soil type and consequently considerable erosion has taken place. In several localities, the second and third horizons of the profile have been


SOIL MAP OF ONEIDA TOWNSHIP
HALDIMAND CLAY
ONEIDA CLAY LOAM
CAISTOR CLAY LOAM
FARMINGTON LOAM
FARMINGTON CLAY LOAM
ONTARIO LOAM
BOTTOM LAND
(AFTER CAE. SOIL MAP)
SCALE IN MILES
RALPH VILERO

MAP IV

exposed. Good examples of this are seen along the hillsides bordering many of the stream valleys. Farmers in the district often speak of the hard, red clay knolls present in their fields. These are simply the eroded exposures of the heavy reddish-brown horizons in the normal profile.

The topography of the Haldimand soil type is undulating to flat but in the land bordering the streems steep slopes are found. While the surface drainage is generally fair, the heavy impervious sub-soil restricts the internal drainage considerably.

In general, the potential fertility of the Haldimand clay is quite high but at present much of the land is in poor condition. Organic matter content is low and often nitrogen is deficient. The available calcium and phosphorous content is low while potash and magnesium levels are high. As a rule, free carbonates do not occur within 16" to 20" of the surface unless erosion has taken place. This illustrates a rare instance in which erosion may have beneficial effects.

Caistor Clay Loam On the second concession there is an 800 acre tract of Caistor Clay loam. The stone-free nature of the profile and the flat topography reflect the strong influence of lacustrine action on this soil type. The low lying condition of this area has given rise to extremely poor drainage both externally and internally. Pond holes and marshy tracts are quite common on the Caistor. As a result, little of the area has been cultivated and forestry is the only land use.

The A1 horizon of this soil is composed of a dark grey layer which has a pH of 5.0 to 6.0. A lighter leached A2 layer about 7" in thickness follows and overlies the greyish-brown B horizon. Due to the restricted drainage conditions which prevail, a mottled appearance is characteristic of the lower horizons. Any effort to bring the area

covered by Caistor Clay loam under cultivation would require very careful management in order to improve the drainage and raise the low fertility levels.

Farmington Clay and Clay Loam Extending over about 5,000 acres in the extreme south of Oneida are the Farmington clays and clay loams. These soils are composed of materials similar to the Haldimand clay but they have been differentiated because of the nearness of bedrock to the surface. The Farmington soils are for the most part located on the brow of the Onondaga Escarpment, an area that was scoured by the ice during the Pleistocene Epoch.

Farmington loam has been mapped where the limestone bedrock is about a foot below the surface. The surface soil, which has frequent stones, is usually a light brown, friable loam, alkaline in reaction, (pH of 5.5 to 7.0) and quite low in organic matter. Because of its shallowness, there has been almost no differentiation of soil horizons.

The topography, which is necessarily the same as the bedrock, is flat to gently undulating. Surface drainage is only fair while the internal drainage depends largely on the nature of the bedrock and is,as a result, severely impeded. Thus in the spring the Farmington tends to be too wet while in the summer it dries out quickly.

Where the soil deepens to about three or four feet, Farmington clay loam is mapped. Being deeper than the loam member of the series, this is a better agricultural soil even though it suffers from adverse drainage conditions.

Heaviness in texture is the common characteristic of the aforementioned soils. The undesirable physical properties which make heavy soils difficult to work are all present and frequently prevent the most profitable utilization of these soils. The movement of air and water is retarded by the fineness of the clay particles and the soil

readily becomes water-logged. These soils have a high water-holding capacity and when wet they tend to puddle easily becoming plastic or waxy in nature. As a result, they warm up slowly and may be considered late soils. Upon drying, these soils become very hard and tend to shrink and "bake". Large cracks are formed in the soil which often may cause much damage to plant roots.

From a chemical standpoint, the heavy-textured soils are inherently low in phosphate, lime and organic matter while potash levels are generally high. These characteristics are a reflection of the high shale content of the parent materials. The low lime content is responsible to a considerable extent for the relatively low organic matter content and low nitrogen level, while the acid reaction aggravates the phosphate deficiency problem by fixing that element in an unfavourable form.

There is a great inherent potential fertility in these soils though their heavy texture is a counteracting factor to their productivity. Under good management these heavy clay soils are suited to a wide variety of crops. Large sections of the shallower Farmington soils, however, have been unwisely brought under cultivation. The Farmington loam should be considered as submarginal cropland which is better suited to pasture.

The improvement of moisture relationships and the promotion of a more friable and improved structure is essential in the good management of these soils. The plowing down of manure, clovers, old straw or hay and grass cannot be over-emphasized as a means of raising the organic matter content of the soil. Meanwhile the addition of lime is of prime importance in overcoming the acid reaction. Since tile drains have been shown to be impractical in the heavy soils of Oneida, the maintenance of a good tilth would do much to aid the free movement of water and thus lessen the serious drainage problem.

Oneida Clay Loam The Oneida clay loam covers over 30,000 acres mostly in the central and eastern parts of the Township. It is a fairly well-drained acid soil (pH 5.3 to 6.3) which has developed on a rolling moraine containing a large proportion of shale. The surface soil is composed of a grey to light brown clay loam layer about 5" to 6" thick. A greyish-brown clay loam 5" to 7" thick comprises the A2 horizon while the B layer is usually a reddish-brown clay about 6" to 8" in depth. The unweathered parent material is a stony grey clay loam and silt loam. Stones are common throughout the profile but are rarely excessive.

The topography of the Oneida clay loam, especially in the area of scattered drumlins, is rolling to hilly. The active stream dissection and the uneven nature of the original moraine are reflected in the present topography. The relatively pervious nature of the soil has resulted in a fairly free movement of water in the profile. Drainage is thus good but on the steeper slopes it may be excessive resulting in some erosion. Compared with the heavier clays, the Oneida clay loam is an early soil which may be worked from 7 to 10 days earlier in the spring than the Haldimand.

The Oneida differs from the Haldimand in several important aspects. Its rolling topography and light-textured soil contrasts with the flat heavy-textured Haldimand plain. While stones and boulders are rare in the Haldimand, in the Oneida they are frequent owing to the comparative freedom which this type has had from the influence of lake waters. Its potential fertility is also higher because of improved physical properties and the greater availability of plant nutrients.

The chief needs of this soil include the application of lime and phosphate fertilizers and the plowing down of legumes and manures to raise the nitrogen and organic matter content.

Ontario Loam Scattered throughout the Township in oval patches are tracts of Ontario loam. Similar to the Oneida clay loam, this acid soil (pH of 6.0-7.0) has developed on rolling and drumlinoid moraine. Light in texture, the Ontario loam is commonly found associated with the drumlins in the south-eastern part of the Township.

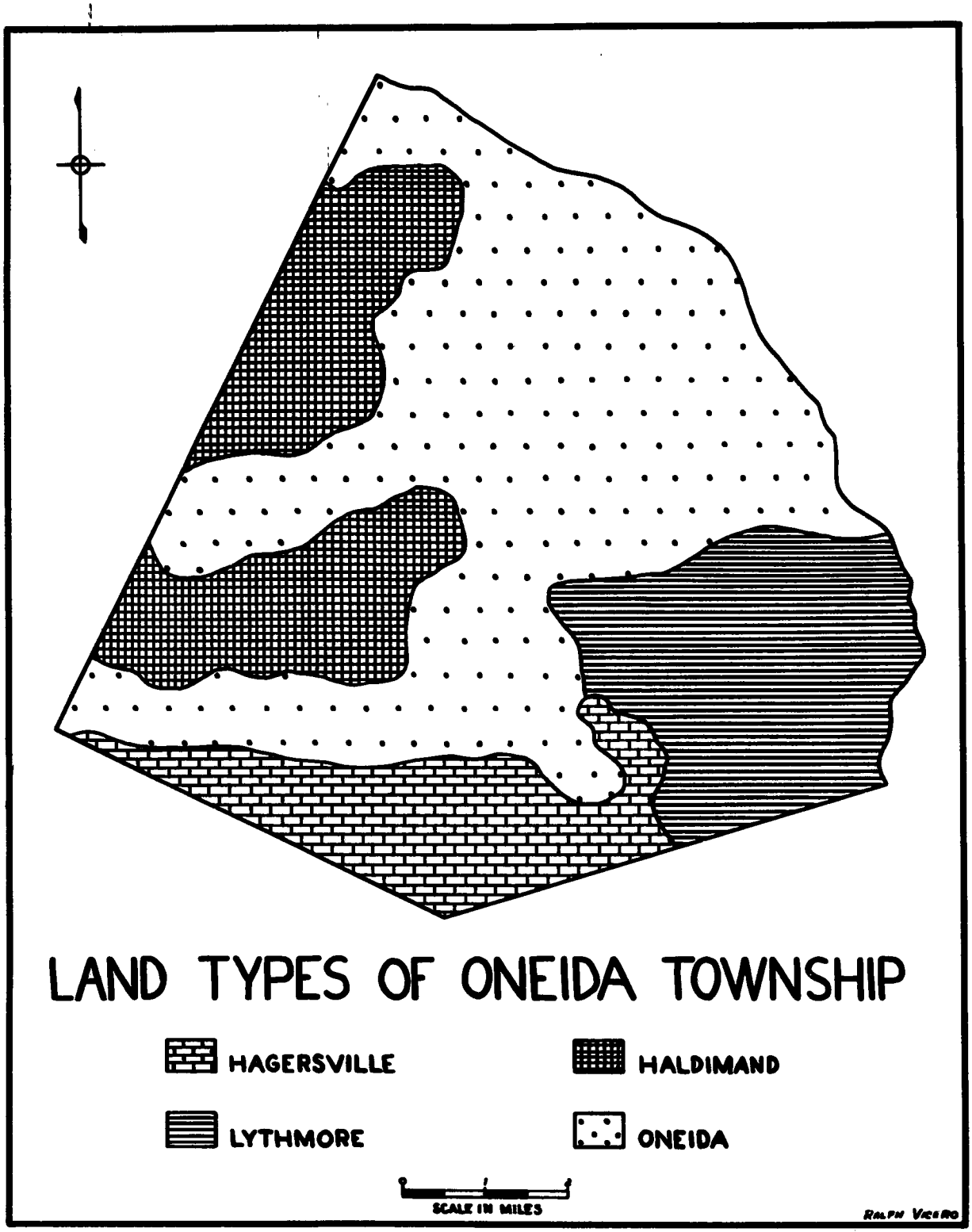
Characteristic of this soil is good internal and surface drainage. The soil is well aerated and exhibits rapid warming qualities. A high percentage of shale, limestone, sandstone and crystalline materials is found in the profile. When treated with lime, phosphates and organic matter, the Ontario loam produces excellent crops.

Bottomland Bordering the stream courses are the azonal soils known as bottomland. The seasonal flooding to which this submarginal land is subjected has resulted in the formation of a complex soil type in which the occurence of glei is quite common. The excessive moisture found in this type of soil tends to restrict its use to pasture.

Land Types

The grouping of areas which have similar soils, topography and drainage conditions has given rise to the unit known as the land type. The land type, being based on physical factors, presents a homogeneous appearance and gives the geographer a convenient division with which he may correlate agricultural, economic and social data. On the basis of the aforementioned criteria, the study area has been divided into four land types which have been plotted on Map V. A brief description of each type follows:

Oneida Land Type The Oneida Land Type is the most extensive type recognized in the region. It comprises a large area in the north and


LAND TYPES OF ONEIDA TOWNSHIP
HAGERSVILLE
HALDIMAND
LYTHMORE
ONEIDA
SCALE IN MILES
RALPH VICARO

MAP V

Oneida Land Type

Haldimand Land Type

central part of the Township and extends to the southern boundary. The dissection which has resulted from the MacKenzie and Boston Creeks has given this type a rolling to hilly topography which stands out in contrast to much of the lacustrine deposits of the adjacent areas. The elevations range from less than 600' along the stream beds to a maximum of about 725' The soils in this land type are almost exclusively the light well-drained Oneida clay loam.

Haldimand Land Type This land type consists of two tongues extending through the Reservation into the western end of the Township. The soils of this land type consist mainly of the heavy textured, poorly drained Haldimand clay. The topography of this type is a fairly smooth upland area being broken only by some steep slopes near the stream banks and by the tops of an occasional drumlin protuding through the lacustrine clay deposits.

Also included in this land type is a tract of Caistor Clay loam on the second concession. This soil type is characterized by its poor drainage and its flat topography. Due to the poor physical condition of the Caistor, this soil type has been left in woodlot.

Hagersville Land Type Extending in a band of one to two miles in width across the southern extremity of the Township is the Hagersville Land Type which consists essentially of a limestone plain. Throughout this area, the limestone bedrock is everywhere located just below the surface of the soil at depths ranging from a few inches to three or four feet. In some places there are rock outcrops. During the period of glaciation this limestone plain was stripped of much of its soil. The soils in this land type are similar to the Haldimand clays and are mapped as Farmington clay or clay loam depending on depth of bedrock.

Hagersville Land Type

Limestone outcrop on the Hagersville
Land Type.

This land type occupies the highest surface elevations in the Township averaging well over 700'. Being unaffected by stream dissection and due to the shallow nature of the drift, the topography of this land type reflects the flat lying characteristics of the underlying rock formations. Drainage is only fair to poor with pond holes occurring in several places.

Lythmore Drumlin Field. The Lythmore drumlin field is located in the southeastern portion of the Township adjacent to the Grand River. It has been differentiated from the Oneida Land Type because of the presence of drumlins protruding through the clay deposits. The axis of these drumlins, of which there are about thirty, are orientated in a northeast-southwest direction. After the period of glaciation these drumlins were submerged under water and as a result many were wholly covered with clay while others show only their tops remaining. Even at that, some of these drumlins rise between 75' and 100' above the level of the land. Their length may extend from one-half to one mile. The presence of these drumlins gives this area bold relief which contrasts with the other land types of the Township.

The soil in these drumlins is classed as Ontario loam and is characterized by its stony nature. The inter-drumlin areas consist of Oneida clay loam. Drainage is good but seepage from the drumlins results in swampy tracts in some of the basins.

Lythmore Land Type. Notice the wooded character of the drumlin crests.

This road over the drumlins indicates the bolder relief of the Lythmore land type.

CHAPTER II

HISTORY OF SETTLEMENT

The original inhabitants of the region which includes Oneida Township were the Neutral Indians. These natives practiced a primitive type of agriculture with maize as the chief crop while a plentiful supply of meat was obtained from the deer and bear which abounded in the dense forests.

After the American Revolution, the Six Nation Indians, who had remained loyal to the Crown, were dispossessed of their lands in New York State. As a result, a treaty was signed in 1784 by Sir Frederick Haldimand offering the Six Nations land in Upper Canada. The government purchased the necessary land from the Mississaugas, who now inhabited the Grand River watershed. The Six Nations under the leadership of Joseph Brant migrated to Ontario where they occupied a large grant of land six miles wide on each side of the Grand River from its mouth to its source.

After about ten years possession, the Indian chiefs came to the conclusion that their lands were too extensive for their own use and thus decided to sell parts of their grant in order to buy blankets, guns, and ammunitions. In this way large parts of Haldimand were sold. With the exception of a strip of land one mile wide in Oneida Township, All Indian lands in Haldimand were sold in 1832. In return for the surrender and sale of their lands to the government, over $ 43,000 is divided yearly among the members of the Six Nations.

Before the sale of the Indian lands, the only white settlements in the area were found on lands granted or leased by Chief Joseph Brant. The first white settlers in the district were members of the Butlers Rangers, a band of irregular cavalry which was organized during the Revolution. Celebrated for their promptness, daring and unwavering loyalty to the King, the Rangers fought at the side of the Indians. Thus many of the Rangers became personal friends of Joseph Brant.

When the British government granted the Six Nations land in Upper Canada, Brant invited a few of his old companions to settle there, giving them tracts of land along the Grand River. Thus it was that in 1784 Henry Nelles and his five sons became the first white settlers in Oneida Township and Haldimand County.

Grants of land in Oneida were later made to Mrs. Dennis and Nicholaus Cook. The latter received his grant through fife playing which made him a great favourite with the Indians. The Ardross Block, containing about 1,200 acres was given to Thomas Runchey on condition that he build a grist mill on the MacKenzie Creek. The Anderson Block was obtained by Robert Anderson as a reward for erecting a grist mill, saw mill and distillery. Since the Township was not open to settlement until the final government purchase in 1832, it was on these few blocks of land that the early white inhabitants settled.

For the most part, these grants of land were located along the Grand River and in later years they proved a hindrance to road building. Road surveys tended to skirt these grants and as a result a curious and irregular road pattern developed in northeastern Oneida.

The area south of the Grand River was at this time known as the Indian Bush. The whole area was wet and swampy and few settlers could be tempted to locate in the interior. Few mill sites were available and settlement lagged behind waiting for the construction of roads. The few settlers who did arrive located along the Grand River where transportation was fairly easy and where mill sites were more readily available. The Grand River Navigation Company had been formed and a lively trade had resulted on the river in lumber and agricultural products.

One of the more important river communities which developed was Mount Healey. When lumbering was at its peak, this prosperous village was the centre of the industry. It had a grist mill, a plaster mill, several shops and many homes. With the rise of road and rail transport it rapidly declined until today it is non-existent.[1]

The importance of the Long Point settlement on Lake Erie and of Hamilton at the head of Lake Ontario pointed to an ever-growing need for a road connection. Travel between these two communities necessitated a long detour through Brantford. Accordingly, in 1839 the Hamilton-Port Dover Plank Road was begun and completed in 1844. The road was to be kept in repair by toll gates placed at six mile intervals. The building of this road provided the impetus for settlement of the interior and settlers flocked to the area.

In the early pioneer period the Irish composed over a half of the settlers who came to Oneida. The second largest group were the Scotch while the English did not come in large numbers until after 1871. Early census reports also show large minority groups of Germans, Dutch and Americans. The racial composition of the Oneida settlers can be seen from the following table.

1 Haldimand Historical Atlas, 1879

TABLE I

Year	Irish	Scotch	English	U.S.	German	Dutch	Indian	Reservation
1851	571	329	181	116	---	---	---	---
1861	368	281	221	114	---	---	---	---
1871	971	627	827	---	109	203	414	---
1881	715	620	769	---	251	---	444	---
1891	---	---	---	---	---	---	---	---
1901	402	496	476	---	111	14	492	---
1911	329	482	532	---	77	---	580	---
1921	285	403	594	---	41	---	23	517
1931	224	341	577	---	---	---	---	429
1941	197	342	462	---	47	67	---	362

To meet the increased traffic which resulted from the construction of the Plank Road, Hagersville was founded in 1847 primarily as a stopping place for the stage coaches. The building of the Canada Southern Railway in 1870 and of the Hamilton-Lake Erie Railway in 1873 which intersected at Hagersville, aided in the steady expansion and development of both Hagersville and Oneida Township. Exploitation of the vast reserves of Limestone and gypsum at Hagersville have also contributed greatly to the prosperity which the region enjoys today.

Rural Depopulation The rural population of Oneida Township (excluding the Indian Reservation) reached its peak in 1871 when it was listed as 2,783. Since that time there has been a steady decline until the number of rural residents today has dropped to 1,182 (1941). This trend is clearly seen in the following table:

TABLE II

Year	Population	No. of Farms
1851	2,591	358
1861	---	---
1871	2,783	372
1881	2,419	403
1891	---	---
1901	1,513	---
1911	1,474	449
1921	1,377	294

TABLE II (cont'd)

Year	Population	No. of Farms
1931	---	---
1941	1,182	229
1951	---	228

The explanation of this rural exodus cannot be attributed to a deterioration in the productive capacity of the soil since the maximum population was reached before the maximum productivity of the land was realised. An analysis of the census shows that the total acreage of land occupied and improved continued to grow after 1871 and that in spite of the decreasing population the number of farms continued to increase until the maximum number was attained in 1911.

A more efficient use of the land and the introduction of labour saving implements have both contributed to the rural depopulation. In Oneida, however, an important factor has been the decline of the rural villages. Mechanization of the farms have tended to lessen the dependence of the farmers on the local artisans in the rural hamlets. The communities of Hagersville and Caledonia which were situated on excellent transportation routes, were expanding and assuming the functions of the smaller hamlets which had been by-passed by the railroads and highways. Mill sites were no longer as important in settlement location while the disappearance of good timber stands forced many saw mills to close. With the end of stage-coach service the numerous stop-over centres on the old Plank Road rapidly declined.

Thus it was that Mount Healey, at one time a thriving river town has now disappeared while Ballsville on the Plank Road has long since been forgotten. The village of Lythmore a relatively recent example of the rise and decline of a rural community. This village developed in the first decade of the present century when a gypsum deposit was discovered

Farm abandonment on the limestone plain near Hagersville.

The remains of the Lythmore gypsum mine.

in the area. A large plaster mill was erected which employed about twenty-five men. Around this industry developed a thriving community. Difficulty in mining the gypsum coupled with the increasing competition from the newly constructed mine at Hagersville led to the abandonment of the Lythmore property in 1931. Within a year the village had disappeared.

Farm abandonment and farm amalgamation has been in evidence in some sections of the Township. In times of prosperity there was an over-expansion of farmlands into what could be termed submarginal land. Thus areas of the limestone plain and imperfectly drained portions of the Haldimand clay were brought under a more intensive cultivation. Many of these areas have since been abandoned.

CHAPTER III

SIX NATIONS INDIAN RESERVATION

In 1784 the British Government granted the Six Nations Indians of New York State a tract of land six miles wide on each side of the Grand River. This grant was made in recognition of their valuable services during the War of American Independence and as compensation for the loss of their former lands along the Mohawk River. Under the leadership of Joseph Brant the Mohawks migrated to their new lands and were followed later by groups of Onondagas, Oneidas, Cayugas, Tuscaroras and Senecas.

The Indians, seeing that they had more land than they could use, proceeded to sell large tracts to white buyers. As abuses crept into the system of land sales, the Indians soon became resentful of the generosity and poor business methods of their leaders. The whites continued to encroach upon Indian lands while illegal deeds and irregular leases were everywhere common.

To cope with the situation, and to prevent the Indians from being further cheated, the government decided on a new policy by which the tribes would be settled on a small reservation and completely segregated from the whites. The vigorous opposition which this plan encountered ended in 1831 when all Indian lands were surrendered to the government. Out of parts of these lands which lay in Brant and Haldimand Counties, the government formed the present Reservation.

The Reservation in Oneida, comprising upwards of 7,000 acres, lies in a strip one mile wide along the western boundary. The Indians who were assigned to this area were not part of the Six Nations but were members of the Mississaugas who had inhabited the region prior to its surrender in 1784.

The sale of the remainder of the territory surrendered by the Indians was carried out by the government and realised over $800,000. With the interest from this sum the government maintains for the benefit of the Indians such social services as hospitalization, poor relief, medical and dental care, funerals, education, in addition to repairs to bridges and roads. Any money left over after these expenses have been paid is divided among the members of the tribes as an annual bounty.

In 1924 the Indian Council was re-organized to comprise 48 chiefs and 12 councillers. The Council, which controls and administers the internal affairs of the Reservation, meets regularly and discusses all questions which pertain to the well-being of the Indian. Final control of all Indian matters lies, however, with the government-appointed Indian Agent. The Council meets at Ashwekan which is the administrative and geographical centre of the Reservation.

The formation of the Reservation has condemned the Indian population to a state of isolation and political serfdom. Except in cases of crime or capital offense, they are not subject to the laws of Canada. They have no vote in Provincial or Federal elections and are exempted from both the land tax and the income tax. Relations with the whites often become strained since no action can be taken against them for breach of contract or non-payment of debts. Whites cannot live on the Reservation

but an Indian may marry a white woman and both will share in the bounty. Property may be sold among the Indians but not to whites. If an Indian chooses to leave the Reservation he forfeits all his rights and privileges.[1]

Referring to the relationship of the Indian to the law, one writer says: "A relationship that - distasteful because insulting - which revives some of the harsh processes of an antique bondage; which destroys and undermines sources of strength and which goes far to extinguish a manly, sober purpose and which has almost shattered his pride and self-respect.[2]

The presence of the Indian Reservation in Oneida Township has been the major factor in preventing a full and efficient utilization of the land for agriculture. If the land Utilization Map (in folder) is examined, it will be seen that most of the Reserve is wooded or has scrub and pasture. Little or no effort is being made to bring much of the land under cultivation, while land that has been in crops at one time has been abandoned, and allowed to grow up in bush and weeds. Even where fields are cultivated, methods of agriculture are poor and yields are invariably small.

The underlying cause of this alarming situation can be attributed to the nature of the Indian. The average Indian has a strong dislike for work and the years of inactivity in this field have made him a particularly indolent and unresourceful individual.

In particular, agriculture, never well-developed in the Indian economy, was looked upon as a woman's task. Tilling the land had little appeal to the Indians and with the advent of a sedentary life on the Reservation, cultivation of the land lagged considerably. The braves who had little experience in agriculture were too lazy to clear and cultivate the

1 Dunham, M., Grand River, 1945
2 MacKenzie, J.B., The Six-Nation Indians, 1907

land and contented themselves with selling the timber off their lands to the whites. The renting of land to the whites is a trend which has developed recently and is an important source of revenue to many Indians. This practice has developed to such a degree that over 50% of the farmlands of the Reservation have been disposed of in this manner.

Governmental policy in regards to the Reservation has also helped to foster and encourage this attitude in the Indian. This policy, as laid down in the Indian Act, has tended to make the Indian the ward of the government and he has come to expect help as his due. So numerous have been the privileges and benefits which he receives that he has lost all sense of responsibility. The result has been the development of a feeling of security based on government support.

This care-free and irresponsible attitude is reflected in the living conditions found on the Reservation. Indian families which usually average about four children, live for the most part in absolute squalor and filth in small dilapidated shacks which lack any of the modern conveniences. Sanitary practices are absent and the children and parents alike dress in torn and dirty clothing. The unfortunate part of this situation is the apparent lack of concern on the part of the Indian himself.

A factor which has contributed to the land use pattern has been the heavy clay soils which cover most of the Reservation. Though potentially fertile, in order that it may be successfully utilized, this soil nevertheless requires careful management and considerable labour in tillage. This effort the Indian has been unwilling to put forth.

The indifference and apathy of the Indian has even pervaded his attitude towards education. Education is looked upon as useless. Only in the past few years has there come a realization that in education lies

Housing on the Reservation.

Housing on the Reservation. These dilapidated shacks are typical of large areas of the Reserve.

the solution to many of their social, political and economic problems. Those Indians who have had some education have been able to raise their living standards and have built farms comparable to those of the whites.

The majority of Indians have turned to sources other than agriculture for their livelihood. Thus large numbers are to be found employed in the gypsum mines at Hagersville and Caledonia and in the stone quarries in the Hagersville district. Employment in these industries has tended to raise the living standards to a considerable extent. It must be said, however, that Indian employees are not always welcomed since they are noted for their unreliability. These Indians who are employed off the Reservation usually retain their residence on the Reserve in order to preserve their many privileges and benefits.

The population of the Reservation reached a maximum of 580 in 1911. Since that time it has experienced a sharp decline. Considerable numbers have moved into the nearby communities of Hagersville and Caledonia while large numbers have migrated to the United States in search of better opportunities. The following table illustrates the population trends in the Reserve.

TABLE III

Year	Population
1851	226
1861	---
1871	414
1881	444
1891	---
1901	492
1911	580
1921	517
1931	429
1941	362

The Reservation as it is today presents a serious economic, social and political problem. The present system of maintaining the Indians has been a failure and has contributed to the aggravation of the problems.[1] A new policy towards the Indian population must be formulated which will educate them in the ways of clean and respectful living and will instil in them a sense of responsibility and citizenship.

1 At the time of writing, a government committee is examining the entire Indian policy with a view to its complete re-organization and improvement.

CHAPTER IV

EVOLUTION OF AGRICULTURAL LAND USE

Agriculture was first carried on in Oneida Township by the early Indians who practised a primitive type of cultivation based on Indian corn which was the staple crop. Beans, squash and sun-flower were supplementary crops.

The settlers of the pioneering period in Oneida adopted much from the Indian agricultural economy. For years Indian corn was the only kind of grain grown. Since there were no grist mills in the region, the settlers were forced to employ the most primitive methods for making flour. By selling the timber from their lands most of the farmers found a welcome source of income which helped them endure the crucial first years of settlement. Potash, made from the ashes of burned trees also provided a ready source of income. A common crop in the early period was buckwheat which was reputed to have the qualities of a soil conditioner.

The early farmer had only a minimum of livestock. These might include 2 or 3 cows, some sheep, a few pigs, some poultry and a yoke of oxen. In the pioneering period oxen were indespensable and it was not until 1850 that they were supplanted by the horse.

As his land became increasingly cleared, the farmers gradually revised his agricultural practices. The favourable soils and climate of Oneida provided ideal conditions for the production of

wheat. This soon became the dominant crop in the Township. At first spring wheat was grown in large quantities but by the turn of the century its acreage had become insignificant as compared with that of fall wheat. Wheat became the one important product which the farmer sold as a cash crop. In 1850, Oneida marketed 86,000 bushels of wheat.

There were also large acreages of peas, Indian corn, oats, barley, and potatoes. Since these were primarily intended for local consumption, they did not enter into commerce to any extent. Next to the wheat crop in 1850, the oat crop occupied the largest acreage. Since this crop was considered essential for the feeding of horses, it steadily increased in importance.

In the latter part of the nineteenth century the growth in pea production was phenomenal. This crop reached its peak in 1891 when over 50,000 bushels were produced. With the advent of the pea weevil the crop declined rapidly. Peas were a favourite with farmers because of their dependability as a crop and their merit in fattening hogs. Frequently grown as part of a rotation to prepare the land for wheat, the pea crop was sometimes harvested and threshed and sold to the northern lumber camps.

Of the farm animals in Oneida in 1850, pigs and sheep were most common. The sheep, which reached their peak in 1861, were kept primarily for their wool which was woven into cloth in the homes of the settlers. The number of oxen, though declining, still outnumbered the horses.

The following tables, compiled from census reports, shows the changes in crop acreages and animal raising.

TABLE IV

Year	Wheat	Barley	Rye	Oats	Peas	Buckwheat	Corn	Potatoes	Turnips
1850	4,449	85	16	958	214	122	233	390	32
1861	5,396	1,122	6	1,769	1,913	259	126	337	51
1871	3,888	-----	---	-----	-----	---	---	173	--
1881	6,263	-----	---	-----	-----	---	---	278	--
1891	5,511	2,399	---	4,009	-----	---	---	147	51
1901	-----	-----	---	-----	-----	---	---	---	--
1911	4,690	1,418	32	6,487	733	22	147	---	--
1921	3,127	1,088	116	5,378	-----	---	---	151	--
1931	3,137	874	53	6,361	-----	---	---	87	--
1941	2,050	931	2	4,927	-----	---	---	87	--

TABLE V

Year	Horses	Cows	Others	Sheep	Swine	Hens & Chickens
1851	449	1,650	647	1,846	1,939	-----
1861	749	1,419	1,464	3,277	2,685	-----
1871	-----	-----	-----	-----	-----	-----
1881	-----	-----	-----	-----	-----	-----
1891	1,188	1,500	2,187	2,542	3,789	15,439
1901	-----	-----	-----	-----	-----	-----
1911	-----	-----	-----	-----	-----	-----
1921	-----	-----	-----	-----	-----	-----
1931	1,005	1,764	1,504	1,504	1,643	72,108
1941	951	2,704	933	933	3,313	64,359

By 1881 over 65% of the land had been cleared and changes were appearing in the agricultural economy. Wheat, which had been the basic crop of the farmer, now reached its highest production and gradually declined. Wheat, peas and potatoes constituted the most important cash crops. General farming predominated with the chief crops being fall wheat, oats and hay.

Although important as a grain growing area, Oneida was becoming increasingly noted for livestock raising. On the whole the quality of the cattle was poor and few thoroughbreds were to be seen. The building of the railways in 1870-3 gave an impetus to the raising of

dairy cattle and gave rise to an industry which has been expanding ever since.

The number of orchards reached their maximum in 1881 and even though soils and climate are favourable for some of the hardier tree fruits, orchards have all but disappeared. Neglect and disease have combined to hasten the destruction of the orchards.

The agricultural development of the first half of the twentieth century is characterized by an increasing trend toward a specialization of the farm economy. The partial self-sufficiency of the late nineteenth century disappears as crops which had been used for domestic purposes declined. The acreage of occupied land reached its peak in 1911 and since then there has been a steady abandonment of sub-marginal land.

Production of rye, barley, peas, buckwheat, corn, potatoes and turnips has been steadily decreasing while farm orchards have all but disappeared. Though wheat production is declining, it still remains an important cash crop. Oats have come to be the leading grain crop while hay and pasture acreages have increased with the rising importance of the livestock industry.

With the increasing mechanization of the farm, the number of horses has rapidly declined. Meanwhile the raising of sheep in the Township has been steadily losing importance. Although the number of beef cattle declined slightly, the Township remains an important producer of beef.

The most significant change in the last fifty years however, has been the rapid expansion of the dairy industry. The large urban centres in the region have created an increasing and profitable

market for milk and dairy products. In response to this market Oneida farmers have placed an increasing emphasis on the raising of dairy cattle in their general farming economy.

The changing emphasis in land use and animal husbandry can be seen from an examination of Tables V and VI. It will be noticed that the acreage under crops increased to a maximum in 1891 and has gradually decreased. The most significant change in the land use pattern is to be seen in the growth of pastures. Grazing land reached its lowest acreage in 1911. Since, the demand of the growing urban centres for milk and dairy products has led to an increasing specialization in the dairy industry. Today, 25% of the area under crops is used for pasture. This expansion of the dairy industry is shown in the sharp increase in the number of cows between 1931 and 1941. During this period, their numbers increased by 60% to a total of 2,704. Approximately half of this number consists of dairy cattle. Since 1941 this percentage has probably increased.

The changes in land utilization over the last 100 years are shown in the following table.

TABLE VI

Year	Acres Held	Under Crops	Pasture	Bush	Orchards
1851	33,216	11,064	1,402	20,572	178
1861	34,927	15,021	5,472	14,033	401
1871	39,258	20,844	3,986	------	618
1881	40,445	25,167	3,935	------	833
1891	40,405	28,778	3,090	7,827	710
1901	------	------	-----	------	---
1911	44,909	25,836	1,320	4,153	522
1921	40,376	22,114	5,813	4,057	361
1931	37,962	22,181	5,813	4,091	---
1941	33,453	20,191	5,336	3,796	3

CHAPTER V

PRESENT AGRICULTURE OF ONEIDA TOWNSHIP

Agriculture is the dominant industry of Oneida Township. The generally level topography, the favourable climate and soils, the proximity of large urban markets and the initiative and the progressive nature of the farmers have been factors which have contributed to the prosperous state of the industry. This prosperity has been due to some extent to the diversification of the products produced. Although mixed farming dominates the agricultural economy of the Township, special emphasis is placed on certain enterprises within this economy.

The degree of intensity of the agricultural use of the land is not uniform throughout the study area. Differences in soil texture and the nearness of the bedrock to the surface are factors which have produced significant variations in the agricultural development. On the other hand, cultural differences among the population have had a pronounced effect upon the land utilization of the region. It will be seen that the presence of the Indian inhabitants in the Township has created an effective barrier to the full utilization of the agricultural resources of the area.

The diversification of agriculture in Oneida has given the farmer a stable income and has aided him in maintaining the fertility of the soil by the proper rotation of crops. Nearly every farmer in the area grows some wheat, oats, and barley and raises some hogs, poultry, dairy and beef cattle. Most of the farmers raise a certain amount

of fruit and vegetables which are used for domestic purposes. Scattered apple trees are common, but these, like most other fruit trees are greatly neglected. The products of the farm woodlot often provide the farmer with a small income and with a source of winter fuel.

The mixed nature of the agricultural economy in Oneida can be best illustrated by an examination of the following statistics for an average farm. The average farm in Oneida (exclusive of the Reservation) is 134 acres in size. Of this 115 acres are in a cleared or improved condition while the remainder is in woodlot or waste land. Of the cleared land, 21 acres are in oats, 9 in fall wheat, about 38 in hay crops, 7 in mixed grains, and 22 in improved pasture. Barley, corn, garden crops and farm buildings occupy the remaining area. Each farm has an average of 10 dairy cows, 9 beef cattle, 14 hogs, 295 fowl and a few horses and sheep.

An analysis of these statistics show that within the general farm economy of Oneida, there is an emphasis placed upon the raising of dairy cows and beef cattle. There were in 1941, 2,460 milk cows in the Township. These were predominantly Holsteins although herds of Ayrshire and Jerseys were accasionally encountered. Of these cows, 1,833 were being milked at the time. Since that census, however, the number of dairy cows has tended to increase until now dairying dominates the economy of the average mixed farm.

Although the increased development of the dairying industry can be attributed in part to the favourable conditions of the physical environment, economic factors have provided the principle stimuli for this expansion. The tremendous conurbation which has occurred around the industrial centres of Toronto and Hamilton has created an ever-expanding market for fluid milk, butter, cheese, and other dairy products. It is the presence of this highly profitable market only one or two hours drive

A fine herd of Holstein dairy cows on the Oneida land type.

The raising of beef cattle on rented Reservation pastures by the whites is an important activity in the Reserve.

by transport which has caused the development of the dairying industry in the Township. Further increases in the urban population of these centres will inevitably lead to a more intensive use of the land and a greater emphasis on the production of fluid milk.

The availability of excellent transport routes to large urban markets has been an added factor which has aided the industry. At present there are eight trucking firms which are shipping milk out of the Township. The great bulk of this milk production is sold to the Toronto-Hamilton market.

Some of the products of the dairy industry are used locally however. The two creameries of the area, located at Hagersville and Caledonia, collect cream from the farmers for the manufacture of butter. The separating of cream from the whole milk has been declining in recent years since most farmers have found it easier and more profitable to sell whole milk to the truckers.

This increasing emphasis on dairying has brought to the general farmer a valuable source of steady revenue. The size of this income can be seen, if we consider that an average farm in Oneida ships about 300 lbs. of milk per day at a price of approximately $ 4.00 per hundredweight. Dairying however, requires a high degree of capitalization in machinery, stock, and buildings. The effect that this has had on tenancy is seen in the fact that over 85% of the farms are owner operated.

The farm economy in Oneida reflects to a considerable degree the rising importance of the dairying industry. The largest single crop in the area is hay, the principle varieties of which are alfalfa, clover, and timothy. This crop constitutes over 46% of all the field crops of Oneida. Hay is rarely grown as a cash crop and is grown almost exclusively as winter feed for farm animals. After the hay is out in the summer, the

fields provide excellent pastures for several months. Alfalfa is the main hay crop grown in the area due in part to the abundant yields which it produces. Also, the roots of the alfalfa plant penetrate deeply into the soil and are able to withstand the hot summer heat better than other grass crops.

The production of ensilage is a recent development which is rapidly expanding. The cultivation of corn for green cattle feed has become more popular as dairying assumes a greater importance and as farmers strive for a more balanced diet for their animals. Sorghum has also been introduced as a fodder crop since it has a tendency to sweeten the ensilage in the silo.

The striking increase in the pasturage acreage of the Township is a further reflection of the importance of dairying and beef raising. Twenty-seven per cent of the improved land in Oneida now lies in pasture.

Although pasture and hay acreages have been increasing steadily, that of cereal crops still occupies the most extensive area. Over 9,500 acres, or 50% of the field crop acreage is devoted to the cultivation of grain crops. With the increased emphasis being placed on the raising of livestock, oats has completely replaced wheat as the dominant cereal crop. The oat acreage is greater than the combined area of all other cereals and covers 26% of the acreage devoted to field crops in Oneida. Oats are grown mainly for use on the farm as feed for poultry, dairy and beef cattle.

At one time wheat production dominated the farm economy of Oneida but since the beginning of the century this crop has gradually declined in importance. Today, it comprises 11% of the field crop acreage in the Township and is the second most extensively grown cereal. The wheat crop is almost exclusively of the fall wheat variety. Wheat

cultivation is mainly intended to provide a cash crop for the farmer and in this respect it forms an important part of the farm economy.

The production of other cereal crops, especially barley and rye, has been decreasing each year until now they form an insignificant part of the farm cropping system. These varieties are usually found, however, with oats as mixed grains. Mixed grains have a high fodder value and constitute about 9% of the field crop acreage of Oneida.

Oneida has always been an important producer of grass seeds. In recent years, however, production has been steadily decreasing as it becomes increasingly difficult to obtain a proper catch. This decline is reflected in the changing policy of the seed cleaning mills in Hagersville which now must import uncleaned seed from the west to maintain their plants in operation. At one time alsike was the important seed crop grown but this has subsequently been replaced by clover.

The growing mechanization of agriculture has caused a rapid decline in the number of horses found on most farms. So scarce have horses become that prices have risen to a higher level than that which previously existed. Although most farms keep one or two horses for general utility purposes the tractor has for the most part supplanted them for most farming operations.

Oneida Township is an important producer of beef. Although dairy cattle outnumber beef cattle, large herds of Herefords were encountered, especially on the heavier clay soils. Many farmers own large herds of steers which they turn loose on the Reservation. This aspect of beef raising will be dealt with later.

The raising of swine and fowl is also an important activity on most of the farms in the region. There are several farms near

Hagersville which deal exclusively in poultry. One farm has developed a thriving business buying chickens on the local markets and after dressing them, selling them to the Hamilton meat stores. There are several farms which engage in turkey raising. Hogs can be regarded as part of the mixed farming economy. They require little attention and are fed kitchen wastes, skim milk and grain.

The agricultural economy of the Indian Reservation contrasts radically with the highly developed and prosperous appearance of the remainder of the Township. The attitude of the Indian, which has been described in Chapter III, has resulted in an haphazard and poorly developed system of cultivation. Less than one-half of the Reservation has been developed for farms while, of that area which has been occupied, only 65% has been improved. This area which has been improved is of such a poor quality that it can in no way compare to the improved farms of the adjacent sections of the Township off the Reserve.

The average Reservation farm is about 103 acres of which 69 are in improved land while the remainder is in woodlot, scrub or permanent pasture. Instead of improving agricultural practices and working toward a more efficient use of the land, the Indian has been increasingly abandoning his farmsteads.

An examination of the land utilization map in the back cover folder shows the land use of the Reservation to be dominated by three categories which reflect the cultural lag of the native population. Thus 85% of the area has been classified as either woodlot, pasture, or scrub.

The areas of woodlot have been mostly cut-over and few commercial trees remain. Many areas which were once cleared have been so neglected that they are gradually reverting to a bush cover. Many areas of

woodlot are extremely swampy in nature. Extensive pasturing of cattle in the woodlots has also contributed to the poor quality of the trees.

About 30% of the Reservation has been considered as pasture of which the improved category is rarely found. Pastures throughout the area are extremely poor in quality and are as a rule plagued with weeds of every type. No attempt is made to improve upon their condition. As a result, the carrying capacity of these grazing lands is much smaller than its capacity.

The areas which were assigned to the scrub classification are among the poorest lands of the region. These are fields which at one time were either cultivated or pastured but which have since been neglected and allowed to deteriorate to such an extent that they are completely unproductive. Grasses for pasture are almost non-existent as they have been replaced by weeds. All the scrub areas are characterized by an extensive growth of low shrubs and thorn trees. These scrub lands will eventually revert to a bush cover. At present, these areas are lying idle with very little pasturing of animals taking place.

Cultivated crops are found on only 14% of the Reservation lands. The crops which are grown follow the pattern which exists in the remainder of the Township but as a rule the quality of the produce and the yields obtained are considerably lower.

Farming is loathed by the great majority of the Indian population while those who would like to farm find they are unable because they lack the necessary capital. A large number of those who are engaged in agriculture practise it on a part-time basis. In 1941, 62% of the occupied land was owned and operated by Indians. On the other hand, 48% of the farmlands had been rented out to the whites. In the last ten years this

trend has continued and the percentage has probably increased.

These rented lands are an important factor in the economy of the Reserve. While the rents charged are low, they provide a steady source of revenue to the Indian who is too lazy to work his own land while at the same time they supplement the wages which he received from working in other fields. Few of these rented farms are used to grow cultivated crops, but are left in pasture. When crops are grown, yields are generally poor due in part, no doubt, to the loss of fertility which has occurred under the poor management and inefficient cropping systems of the Indian.

The pasturing of beef cattle on these rented lands constitutes one of the most important economic activities on the Reservation. These cattle are wintered off the Reserve and are turned into the permanent pastures and woodlots of the Reservation in the summer months. Aside from providing these animals with adequate supplies of salt and water, very little attention need be paid to them by the owners who realize a handsome profit from this type of enterprise.

There is no single system of crop rotation practised in Oneida although fall wheat, hay, pasture and a spring grain appear most commonly in the cropping system. Fall wheat, which is the chief cash crop, frequently receives the major share of the barnyard manure and commercial fertilizers which are applied. Wheat generally follows sod, summer fallow, or a spring grain. The practice of summer fallowing is still common in Oneida. It is employed to combat the low fertility levels in some fields while in others it is the only method which has been successful in the eradication of the numerous weeds which abound in the area. Chickory and thistle often cause widespread injury to the oat crop, while wild carrot is particularly damaging to pasture fields. Rotations

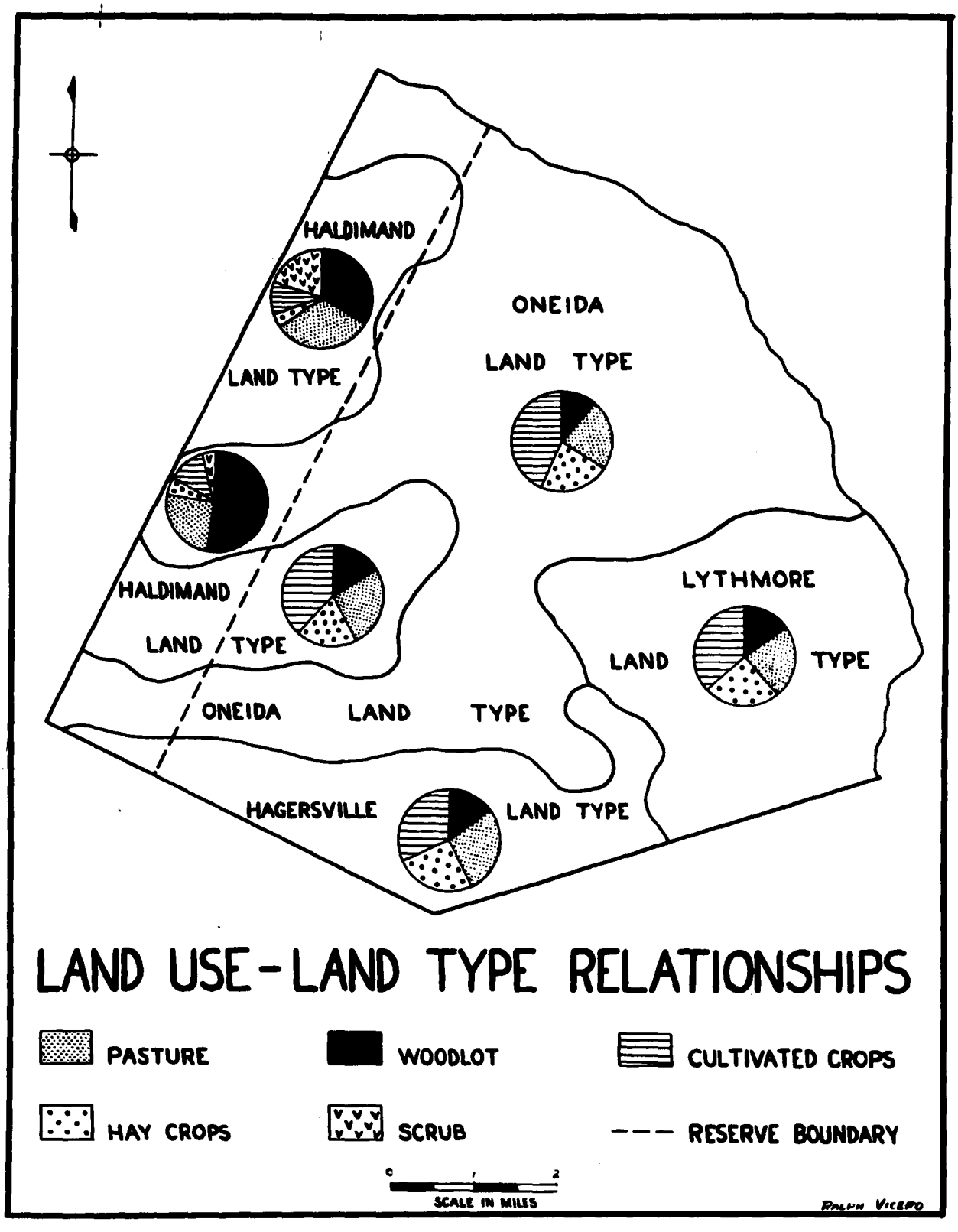
are greatly improved when corn or some other hoe crop is introduced.

On the basis of the foregoing general discussion of the agricultural economy of Oneida, it appears that the Township (with the exception of the Reservation) is in a highly developed condition. The high proportion of improved land to the total farm land (85%) is a reflection of the high degree of agricultural development. The prosperity of the region is further emphasized when we consider that the average value of the land of an average farm in Oneida is $ 3,122 -- over $ 122 higher than the provincial average. Also, the value of the buildings is $ 2,838 - over $ 338 higher than the Provincial average.

We will now proceed to examine more closely the variations in the general land use pattern which occurs from land type to land type. These differences in the agricultural development bear a direct relationship to the changing pattern of soils, landforms, and in some places to the geological structure. In the section which follows, an attempt will be made to show any relationships which may exist between these factors and the agricultural development of the various land types. These land type - land use relationships are illustrated on Map VI while the land use pattern of the whole township is shown on the map in the back cover folder.

Non-Reservation Area

Oneida Land Type This land type comprises the best agricultural land in the Township. Soils are almost entirely of the Oneida clay loam. This loamy texture of the soil and the rolling topography have to a certain extent, lessened the serious drainage problems which exist in the other parts of the study area. As a result of the improved


HALDIMAND
LAND TYPE
ONEIDA
LAND TYPE
HALDIMAND
LAND TYPE
LYTHMORE
LAND TYPE
ONEIDA LAND TYPE
HAGERSVILLE
LAND TYPE
LAND USE-LAND TYPE RELATIONSHIPS
PASTURE
WOODLOT
CULTIVATED CROPS
HAY CROPS
SCRUB
RESERVE BOUNDARY
0
1
2
SCALE IN MILES
RALPH VICERO

MAP VI

drainage conditions, cultivation of the land can be commenced from 7 - 10 days earlier in the Spring than in the other land types.

With only 11% of the area in woodlot, the Oneida is the most highly developed and most intensively cultivated of all the land types. The excellent physical conditions of the soils have given rise to the most extensive acreages of cereal crops. This is particularly true of wheat which thrives on the well-drained Oneida slopes. Approximately 43% of the area is devoted to cereal cultivation. The high quality of the farm homes and barns and the amount of machinery used is an indication of the prosperous economy of the region.

In the past few years several new crops have been introduced to the area. Several farmers are growing soybeans both as a cash crop and for feeding purposes. Corn acreages have been increased each year. Tests which have been conducted in the area by O.A.C. have shown that corn is climatically adapted to the region. Yields of up to 100 bushels per acre of husking corn have been obtained in one test plot.

Although climate and soils are suitable for the growth of apple orchards, the culture of this fruit is almost non-existant. In the earlier days of settlement, fruit orchards were quite common. The outbreak of disease among the trees, however, combined with neglect by the farmers have destroyed the orchards.

Lythmore Land Type In the Lythmore land type, the prevailing land utilization pattern shows clearly the influence of the drumlinized topography. Soils, which consist predominantly of the fertile, well-drained Oneida clay loam, give rise to excellent physical conditions for agriculture. The drumlins, however, have resulted in significant

Swampy inter-drumlin area in the Lythmore land type.

Farm buildings on the Oneida land type. Note the corn stubble in the foreground.

differences in the land use as compared to that of the Oneida land type.

The greatest variation is apparent in the area devoted to cultivated crops which decreases to 37% of the total acreage. In some areas, steep slopes may be encountered on the drumlins and this factor has hampered the growth of cereals. At the same time, many of the inter-drumlin areas are poorly drained and may even be marshy. The cultivation of crops is thus restricted in these areas. Notwithstanding these limitations, a large quantity of good quality grain is grown in this land type.

The decrease in the acreage of the grain crops has resulted in an increase in other types of land use. Woodlot, which comprises 15% of the area, is commonly found on the crests of the drumlins. The cultivation of grains on the drumlin slopes is not only difficult for machinery but also results in considerable erosion. Thus many of the slopes are used for pasture and hay crops. Many of the inter-drumlin areas, on the other hand, are left in pasture because of the restricted drainage conditions.

Hagersville Land Type This land type differs markedly from the two previous ones in both its physical characteristics and its agricultural potentialities. The distinguishing feature of this land type is the nearness of the limestone bedrock to the surface. The land is extremely flat and consists of the shallow Farmington soils. The internal drainage of this land type is impeded by the bedrock while the surface water often is unable to drain away. The effect of these conditions has been to make the soils too wet in the Spring with the result that cultivation is often retarded for one or two weeks. The heat of the summer months, on the other hand, tends to dry out the shallow soils and

cause periodic droughty conditions.

The Hagersville land type should be considered as a marginal farm area which is poorly suited to the production of crops. The adverse physical conditions which are present are reflected in the agriculture of the area. The lowest proportion of cropland (33%) in the Township is found in this land type. The quality of the produce and the yields obtained are as a rule inferior to those of the other land types. In the more droughty summers, grain crops, especially oats, may be seriously damaged.

Fifty per cent of the acreage of the Hagersville land type is devoted to pasture and hay crops. This is the largest percentage of any land type in the study area. This emphasis on hay and pasture can be attributed to a readjustment in the agricultural economy by which the land use is being brought into closer harmony with the physical conditions of the region. This limestone plain is best adapted to the growth of hay and pasture grasses. Alfalfa is by far the most common of the grasses grown, not only on this land type but throughout the Township. The extensive root structure of the alfalfa plant permits it to draw moisture from greater depths than other grasses and thus makes it less susceptible to drought damage in the summer. The alfalfa also aids in breaking up the clay.

Haldimand Land Type The heavy texture of the clay soils and the associated imperfect drainage conditions of the Haldimand have a depressing effect on the farms of this area. Although the land is potentially very fertile, careful management practices are required if the physical condition is to be improved. Drainage is the basic problem. The installation of tile drains would not provide a solution since the heavy compact nature

of the clay prevents any large amount of downward percolation of the soil water.

To promote better drainage conditions, the structure of the soil must first be improved. The addition of organic matter in the form of barnyard manure, plowed down green crops, corn stalks and stubble is of prime importance in any programme of rehabilitation. A greater use and more careful use of barnyard manure is essential for the farms of the area. In the past two decades, Oneida farmers have been selling huge quantities of manure to the tobacco farms of Norfolk and to the fruit farms of the Niagara Peninsula. This practice has robbed the Oneida soils of the material it needs most. The improvement of the productive capacity of the soil also requires the addition of lime.

Approximately 39% of the Haldimand is devoted to grain crops. The quality and yields are not as high as on the Oneida. The late Spring seeding which frequently occurs on the late Haldimand clay often does not permit the oats to fully develop before the hot weather arrives. Yields of oats and mixed grains are thus often severely reduced by the droughty conditions.

Increasing emphasis is being placed on livestock raising on this land type. Pasture and hay crops occupy over 45% of the total area. Whereas dairying is still important, it is overshadowed by the raising of beef.

The high proportion of woodlot in this land type is due to the large tract of Caistor clay loam which is encountered on the second concession. Drainage on this soil type is seriously impeded. Accordingly the area has been allowed to remain in woodlot.

An example of the scrub areas found on the Reservation.

Farming on the Haldimand land type. Notice the poor condition of the buildings, and the drumlin protruding through the clay in the background.

Reservation Area

When considering the various features of the land use of the Reserve, it becomes very difficult to determine the influence which the natural land qualities have exerted. In the course of the study however, it became apparent that the nature of the Indian had to a large degree determined the pattern of land use. The quality of the land was a secondary factor which assumed an importance only after the Indian had been motivated to start farming.

It is interesting to note however, that the largest proportions of pasture and scrub are found on the Haldimand land type while the largest proportion of grain crops is found on the Oneida land type. This would seem to indicate that the Indian had at one time farmed the Haldimand more intensively than at present and that when the initial fertility was lost they refused to increase their labour to maintain yields. The result was the abandonment of many farms, while others were allowed to remain in pasture or revert to scrub or woodlot. The improved physical condition of the Oneida land type made farming easier here with the result that abandonment did not occur as rapidly or as extensively. On the Oneida, more hay and grain crops are grown while the proportion of scrub is lower.

CHAPTER VI

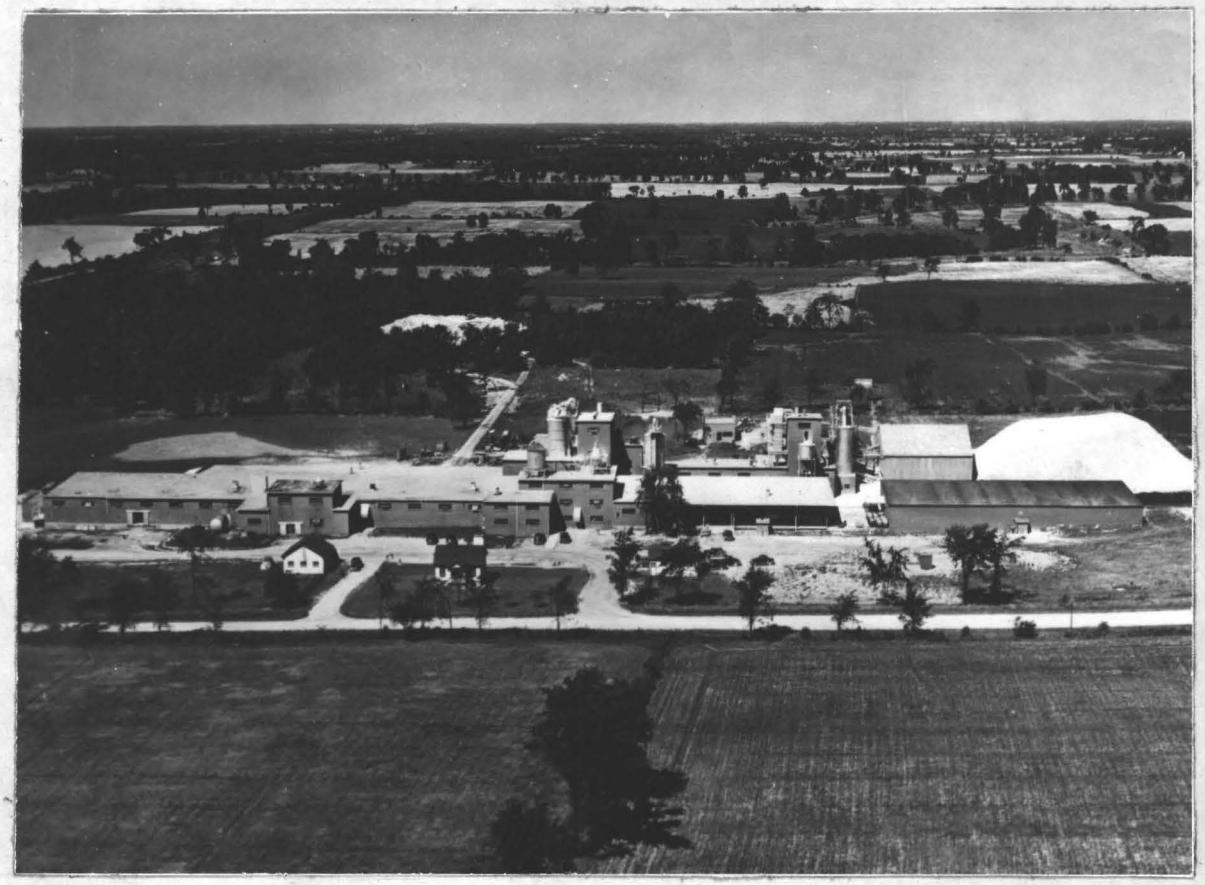
NON-AGRICULTURAL LAND-USE

Canadian Gypsum Company

The workings of the Canadian Gypsum Company constitute the most important non-agricultural land-use in the thesis area. The plant and mine of the company are located adjacent to the Canadian National Railway about three miles north of Hagersville. (See Map II)

Gypsum has been mined in the Grand River area since 1822 when its chief use was for agricultural purposes. It was not until 1931 however, that geological surveys and core drilling had determined the presence of a fine deposit of gypsum rock at Hagersville. The mineral, which was found at a depth of 90 feet, occurs in beds between 4 or 5 feet thick. The gypsum, which is white in colour and free from most impurities is of an exceptionally high quality.

A shaft was sunk in 1931 and an efficient and compact plant was constructed to manufacture a complete selection of gypsum plasters and wallboards. At that time the plant employed 35 men. Wide acceptance of its products and the growth of its markets have made increases in the plant's manufacturing capacity necessary during the succeeding 22 years. New jobs and opportunities have resulted from this expansion. Today the company employs over 200 men and operates three shifts per day six days per week. Working conditions are generally good while wages are the highest in the district.



The plant and mine of the Canadian Gypsum Company at Hagersville. Notice the large stock-pile of gypsum rock.

The company's labour force, which is composed of three groups of workers, is drawn from a large part of the surrounding territory. The first group consists of those who live in the near-by villages. This constitutes the largest class of workers. Over 50% of the plant's labour force resides in Hagersville while a smaller group comes from Caledonia. The second group comprises a large number of part-time farmers from Oneida and adjacent Walpole Townships. The general practice of these farmers is to work on shifts at the plant and to operate their farms in the off hours. The third and smallest group is made up of Indians from a wide area in the Reservation. Although these Indians are rural dwellers, few of them farm in their spare time. Instead, they are content to rent their land to the whites.

The processing plant consists of a calcining mill which includes crushers, a rotary calciner and fine grinding equipment. The plant also has a Packing Department which manufactures various types of plasters and a Board Plant which produces gypsum lath and wallboard. The products of the Hagersville Plant include "Red Top" plasters, "Rocklath" plaster base "Sheetrock" wallboard, and "Perf-A-Tape" joint plaster. In addition to these nationally known building products, there is manufactured acoustical and other specialty plasters and insulating and pre-decorated gypsum board products.

The expansion of the plant's productive capacity has raised the weekly output of Sheetrock and Rocklath to a point where sufficient is manufactured to build 600 average sized homes. Surplus supplies of gypsum rock are exported by rail to the company's other plants in the U.S. while the manufactured products of the Hagersville plant find a market throughout the provinces of Ontario, and Quebec. Shipment of these goods is made either by rail or motor transport.

From the beginning, the Hagersville plant has been subject to a continuous programme of expansion. At present plans are being considered for the construction of a new Perf-A-Tape plant and a paint factory. The effect of this programme has been to create greater employment opportunities in the community, and to add to the general prosperity of the region.

Quarrying Operations

In addition to the gypsum deposits, extensive beds of limestone have been quarried at three points in the Hagersville district. The comparatively shallow mantle of drift which overlays the Onondaga Escarpment has been an important factor in facilitating the exploitation of the limestone resources. In Oneida, the quarrying operations are directed by the Haldimand Quarries and Construction Ltd. The company operates its plant on the north-east outskirts of Hagersville.

The Haldimand Quarries are the smallest of the three quarries which are located in the Hagersville area. Opened in 1910, this plant has recently installed the most modern machinery available and has expanded its production of limestone to over 1,500 tons daily. Crushed stone of all sizes is produced and marketed mainly as material for road construction. It is also used for railway ballast and concrete mix. During the past few years the company has commenced production of agricultural lime and is now able to supply the needs of the farmers in the vicinity.

The quarry occupies an area 500 yards in circumference and extends to a depth of 25 feet. The lack of space for expansion and the poorer quality of the rock further away from the present workings has forced the company to commence deepening the present site. Year round employment for

twenty-five men is offered by the company.

The Onondaga limestone is the only rock formation utilized by the quarries of the Hagersville area. This hard, fine-grained, cherty limestone is unsurpassed in the province for quality and is ideal for use in road building.

An important factor in the development of the quarrying industry in the Hagersville district has been the close proximity of excellent rail and road facilities. All three quarries of the areas have access to both the C.N.R. and the N.Y.C.R.

Lying at the southern extremity of the village of Hagersville are two quarries which also utilize the limestone of the Onondage formation. Although these do not lie within the thesis area they have been of extreme importance in the development of Hagersville and mention must thus be made of them.

The westernmost of these quarries is operated by the Canada Crushed Stone Company. Opened in 1888, this was the first quarry in the area. Originally it was opened to supply rubble for the streets of St. Thomas. The quarry pit measures 800 yards by 300 yards and is worked to a depth of 30 feet. The present capacity of the plant is over 2,000 tons of crushed stone per day. Employment is provided for about 25 men.

Just east of this quarry lies the property of the Hagersville Quarries Ltd. This quarry was opened in 1906 by the Michigan Central Railway to provide ballast for its trains. Modernization and expansion of the plant facilities took place in 1944 when new stone crushing and screening plants were built. By raising its crushing capacity to 2,500 tons daily, it has become the largest producer in the area. The Hagersville Quarries also produces large quantities of asphalt for road paving. The quarry operates two pits which occupy an area 1,000 yards by 500 yards and extend to a depth of 33 feet. During the operating season as many as 55 men

The Haldimand Quarries and Construction Co. Ltd., at Hagersville.

The rural hamlet of Clanbrassil. Note the blacksmith shop in the foreground.

are employed.

Natural Gas

Drilling for natural gas constitutes a non-agricultural land-use the importance of which is well out of proportion to the area it occupies. There are now over 90 producing gas wells in the Township. The greatest concentration of the wells occurs in the eastern half of the Township. Commercial production comes entirely from the rocks of Silurian age. The Medina and the Clinton formations are the chief resevoir rocks.

All the gas produced in the Oneida field is of the "dry" and "sweet" variety. This means that gasolene vapours and H_2S are not present. As a result no purification is required before it is delivered to the consumer. As a rule, the wells of Oneida are not heavy producers. They are, on the other hand, steady producers whose flow may range up to 400,000 cu. ft. per day.

Urban Land Use

Apart from Hagersville, there are two other urban areas. The largest comprises that portion of Caledonia which lies on the south bank of the Grand River. This community is located nine miles north of Hagersville on Highway No. 6. This is almost exclusively a residential section with third class housing predominating.

The second urban area consists of the hamlet of Clanbrassil which is located on the second concession about seven miles from Hagersville. The built up area consists of a church, school, blacksmith shop, two general stores, a service station and several homes. This hamlet functions as a local service centre and as a focal point for community activities.

CHAPTER VII

AN URBAN STUDY OF HAGERSVILLE

Site

The village of Hagersville is situated on Highway No. 6 at the intersection of the Canadian National and New York Central Railways. The New York Central is the main east-west rail line connecting Buffalo and Detroit while the Canadian National provides rail transport north to Hamilton. Excellent road communication with Hamilton, twenty-five miles away, is provided by No. 6 highway. This extremely favourable position in relation to transportation routes has contributed greatly to the progress and development of the community. The location of Hagersville can be seen on Maps I and II.

Hagersville also lies at the southeastern extremity of the Six Nations Indian Reservation. Examination of Map VII shows that the Reservation extends deeply into the centre of the community. This factor has presented a serious obstacle to settlement and expansion in Hagersville.

The village has been built on the crest of the Onondaga Escarpment and therefore occupies the height of land between the Grand River and Lake Erie. This has meant that excellent drainage conditions prevail in the community. However, the nearness of the limestone bedrock to the surface has been a definite handicap to building.

History of Settlement

Although the first white settlement in the Hagersville district occurred in 1842 when Thomas Beswetherick cleared his farm just south of the present village limits, the founding of the community lagged behind because of the inaccessibility of the area. Its development had to wait until adequate transportation routes could be established.

In 1844, the Hamilton-Port Dover Plank Road (Highway No. 6) was constructed through the county. At the intersection of the Plank Road and the old Indian Line a toll-gate was built. To this site the Hager brothers, Charles and David were attracted in 1845. These brothers, after whom the village was named built a blacksmith shot on the new site. As the volume of traffic on the new road steadily increased, the Hager brothers built a hotel and post office in 1847 and five years later erected a general store. In 1853, David Almas, who also ranks as one of the town's founders built the community's second hotel.

These were the first buildings and for a time the only buildings in the village as Hagersville grew slowly. In its early period the community was of little importance except as a stopping place for the stage-coach which ran daily between Hamilton and Port Dover. In 1846, Hagersville contained a population of 100 contained two general merchants, one grocer, three hotel-keepers, two blacksmiths, a wagon-maker, a carriage-maker and two doctors.

Just as settlement in the area had waited for roads, so the expansion of Hagersville had to wait for the arrival of the railways. The building of the Canada Southern Railway running east-west in 1870 and of the Hamilton-Lake Erie line in 1873 provided the impetus for the rapid growth of the community. Lots were immediately laid out throughout the

village while the land in the western section opposite the Reservation was first surveyed, and opened for building. With a population of 700 Hagersville was incorporated as a village in 1875.

One source gives the following description of the community in 1879. "Hagersville has a steam agricultural implement factory, a steam grist mill and flouring mill, a carriage shop and a number of stores which are doing a good business. Some very handsome buildings have been erected recently, including a large two-storey brick building, which is the finest public school building in the county and cost $ 5,000 to build". [1] Hagersville at this time was one of the best grain markets in Haldimand.

The development of the quarrying operations in the vicinity gave an added impetus to Hagersville's expansion. The establishment of the Canada Crushed Stone Quarry in 1888, the Haldimand Quarries in 1910 and the Hagersville Quarries in 1906 have given employment to over 100 men. At present these plants have a combined output of over 5,000 tons of crushed stone daily. The exploitation of the gypsum deposits of the area by the Canadian Gypsum Co. in 1931 has developed into Hagersville's most important industry employing more than 200 men.

Hagersville's population experienced a sharp temporary rise during the Second War with the construction of an R.C.A.F. training school in the district. Its subsequent abandonment and conversion into an Army Ordinance Depot has made it an important employer of labour. Hagersville's population growth has been slow and steady and reached a high of 1750 in the 1951 census. The following table shows the growth of the village population with its changing racial character.

There have been several significant changes in the composition of the population. The English, comprising 40% of the population

1 Historical Atlas of Haldimand - 1879

have always been the leading racial group. There has been little change in this percentage over the years. The Irish, on the other hand, have decreased by over 50% since 1901. The Scotch in the same period increased their number by 3%.

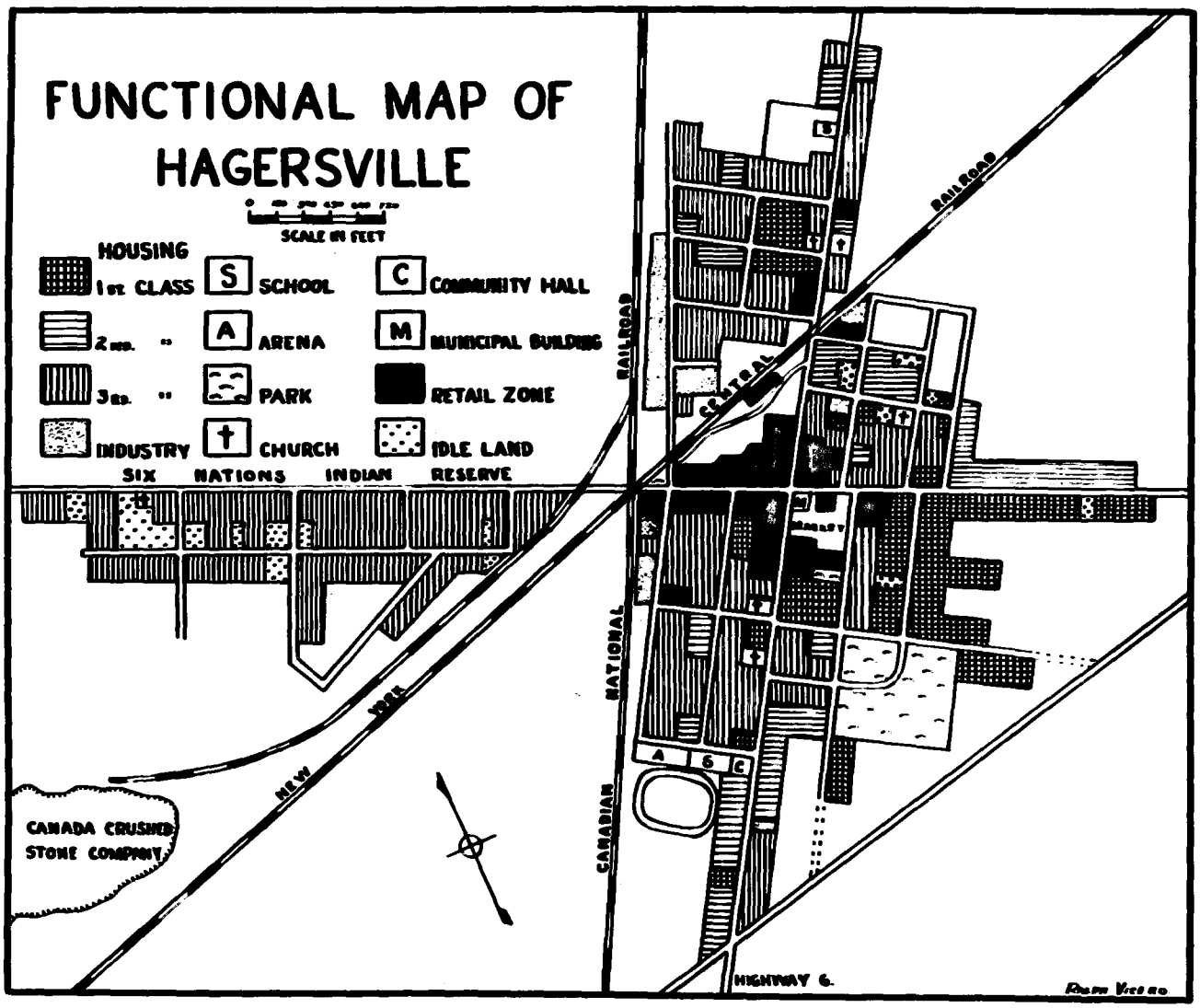
The most important change has taken place in the Italian population. The main migration of this group occurred between 1900-1921. Their subsequent increase has been due primarily to natural immigration. Today the Italians form about 10% of the population.

T A B L E V I I

Year	Total	English	Irish	Scotch	German	Indian	Italiam
1861	200	---	---	---	---	---	---
1891	1,061	---	---	---	---	---	---
1901	1,020	405	246	154	129	31	7
1911	1,106	480	204	140	109	28	78
1921	1,169	479	228	177	59	---	84
1931	1,385	935	110	103	49	---	125
1941	1,455	697	174	234	71	50	123
1951	1,750	---	---	---	---	---	---

Settlement Pattern

The development of Hagersville has been essentially a growth north and south along Highway No. 6 (Main Street) and east and west along the Indian Line (King Street). Only recently has this attenuated character been modified. The street plan of the village is a modification of a grid pattern. Surveys were conducted only when the need for new building lots arose. The result was that a co-ordinated plan for street development was absent and a highly irregular pattern evolved. These characteristics are well illustrated on Map VII.


FUNCTIONAL MAP OF HAGERSVILLE
SCALE IN FEET
HOUSING
1st CLASS
2nd. "
3rd. "
INDUSTRY
S SCHOOL
A ARENA
PARK
CHURCH
C COMMUNITY HALL
M MUNICIPAL BUILDING
RETAIL ZONE
IDLE LAND
SIX NATIONS INDIAN RESERVE
RAILROAD
CANADA CRUSHED STONE COMPANY
HIGHWAY 6.

MAP VII

Residential

In the functional survey of the community, three types of housing were recognized and mapped.

1st Class - These are homes of superior appearance and are as a rule constructed of brick and stone. Although most of these are relatively new, many of the older homes also fall into this category. Grounds are quite spacious and well-kept.

2nd Class - This classification includes homes which are smaller and older than the first class. Frame construction predominates in this group.

3rd Class - This category contains the poorer homes of the community. The houses are made of wood and may lack such conveniences as water and sewage facilities.

The only area of first class housing is located on the northern edge of the Park in the extreme eastern part of the village. These homes situated on Main Street are mostly of older construction while those located closer to the Park have been built in the last fifteen years. A new survey has just been opened in this area and further expansion in residential construction is assured.

In addition to this area of new housing, there are two sections just outside the village where new construction has begun. The first of these is located to the east of the town and contains about ten new homes. The second zone which is situated south of the Park is using the water and sewage facilities of the village and will inevitably be annexed in the future.

The remainder of the community consists mainly of third class housing with small pockets of second class homes spread throughout the village.

King Street in Hagersville on a typical market day.

New construction on the eastern edge of the village.

The West End

Separated physically and socially from the rest of Hagersville lies that part of the community known as the "West End". This area is confined to a narrow strip of land on the southern edge of King Street West. Three important controls of the environment have determined its boundaries. Settlement on the northern part of King Street West is prevented by government regulations which prohibit whites from holding land in the Reservation. To the south, the quarrying operations of the Canada Crushed Stone Co. have stopped any expansion in that direction. To complete the confinement of the West End, a series of rail lines in the east acts as a barrier to expansion in that direction. These factors are clearly seen on Map VII.

The West End is an area of third class housing. An important handicap for construction has been the nearness of bedrock to the surface. In some parts the limestone can be seen on the surface. This was an important factor in the decision not to extend the water and sewage facilities into this district. The absence of consumers on the northern part of King Street made it uneconomical to introduce water and also influenced the decision.

It is the composition of the population, however, which gives this section of the community a distinctive character. About 65% of the residents are of foreign extraction with the Italian element comprising by far the largest single group. The Italian migration started about 1900 in response to the demand for labourers for the local quarries. As most of these people worked in the two western quarries, they settled close to their place of employment in the West End.

Emigration from Italy, which was stopped by the war has now resumed and is likely to continue at a steady rate for many years to come.

The second generation of these emigrants have tended to build their homes near those of their parents and have thus increased the concentration of the Italian population in this district. Their present day number has risen to approximately 200 persons.

The West End is an area of working class people who find employment either in the local quarries or at the Canadian Gypsum Co. Although it is a poorer section of the community, its population is energetic and progressive.

The unfortunate position which the West End occupies makes it a serious problem area for the future. With expansion blocked in nearly all directions, overcrowding can be expected. The forces which have restricted its development have contributed to isolate it from the rest of the community. The lack of water and sewage facilities will undoubtedly be the cause of many problems in the future. Contamination of the drinking water supplies is already a problem in the area. Sanitary conditions are bad and can be expected to become worse. Unless corrective steps are taken, the West End could develop into a slum area which would become a burden on the community.

Retail Zone

The retail section of Hagersville is centred on the intersection of Highway No. 6 and King St. The village has a wide range of shops dealing in both staple household goods and luxury articles. The many stores which are found in the community gives evidence to the large quantity of trade which is carried by the merchants. The importance of the rural trade is reflected in the large stocks of standard merchandise which are kept in response to the demands of farmers.

Industry in Hagersville

There are few industries which are located within the village itself. The main industrial developments which affect the town are the mining operations on the outskirts. The gypsum mine and its manufacturing plants and the stone quarries have already been discussed and little need be said of them. It should be noted, however, that these industries offer a combined employment to over three hundred workers of which number about two-thirds reside in the village. So important were the quarrying operations to the development of the village that it early acquired the nickname of "Quarry Town" which it retains to this day.

An army ordinance depot which is located about four miles south of Hagersville is also an important employer of labour. There are about fifty men employed of which half live in the village. The remainder consists of part time farmers and transients who live in the camp and who stay for only a few months.

Of the industries which are located within the village, the Well-Maid Gloves Ltd. is the newest and employs about 25 women. An older industry is the Laidlaw Transport which was first organized in 1924. With the establishment of the gypsum plant near Hagersville, this enterprise greatly expanded especially after Mr. Laidlaw was awarded the contract to ship the company's products through the province. The organization now is composed of over 30 trucking units and employs a staff of twenty men. Other community industries include, the Beaver Lumber Co., various seed and feed mills and a creamery.

The construction of the railways in 1870 - 73 was one of the most important factors in the early growth of Hagersville. Today, these rail lines play an important role in the continuing development of the village. Realizing that the east-west line through Hagersville was the

shortest route between Buffalo and Detroit, the New York Central Railroad purchased it from the Canada Southern Railway and today operates its fastest and best trains over this route.

The importance of Hagersville as a rail centre, however, stems from the existence of a spur line of the Canadian National Railway which connects the village to Hamilton and Toronto. Hagersville is thus one of the few communities in Southern Ontario where freight from the Central U.S. lines can be transferred to the Canadian National system. The intersection of these two rail system has thus laid the foundation for an important industry based on the transference of goods from one rail line to another. An average of 50-60 freight cars are transferred daily at Hagersville.

During the operating season, the three quarries ship large quantities of crushed stone to all parts of the province on these lines. The Canadian Gypsum Co. also utilizes these rail lines for its large shipments of plaster and gypsum board to all parts of Ontario andQuebec.

A large variety of goods is handled by these rail lines. Large quantities of newsprint from Quebec and Northern Ontario is transferred here for export to Detroit, Toledo, Grand Rapids and other American centres. On the other hand, the Canadian Gypsum Co. imports all of its paper requirements from its Chicago or Oakfield, N.Y. plants. During the winter, from 500 - 600 cars of canned products are received from Leamington for transference to the C.N.R. The tobacco production of Norfolk County is also shipped through Hagersville on its way to the cigarette factories of Quebec. Corn from Essex County is transferred at Hagersville for shipment to the Cardinal and Port Credit starch and syrup factories. Imports of soda ash and calcium chloride are received for the aluminum

works of Arvida, Quebec. About $ 3,000,000 worth of goods is transferred annually between the rail lines which intersect at Hagersville.

Rural-Urban Relationships

Lying in the centre of a rich agricultural area, Hagersville has developed an important relationship with its rural hinterland. While other communities have declined in importance because they could not adjust themselves to the changing economy, Hagersville has grown steadily in size and influence. This increasing prosperity has been partly due to Hagersville's position as a leading market town and service centre for the region. Several important factors have enabled her to continue and expand this role.

Easy access to excellent transportation routes to points in both Canada and the United States has given Hagersville an advantage over other villages in the area which were less favored in this regard. The fertile agricultural region which surrounds Hagersville is an area of modern and progressive farms. The industrious nature of the farmers and the efficient methods they employ have brought a high measure of prosperity to the region. It therefore comprises an excellent market for the consumer goods of the village.

Being located a comparatively long distance from Hamilton, Hagersville has been relatively free from the over-shadowing influence of this city. People from the region, however, do shop in Hamilton for some luxury goods and specialized items. On the whole, competition is not serious and the village has been able to pursue an independent development.

Hagersville also has the added advantage of being the only large community in the area. Caledonia, nine miles away, has come under the influence of Hamilton and has not as large a business section as has Hagersville. The trade area of Caledonia is thus limited and does not

compete seriously with the position of Hagersville.

In explaining the rise of the important inter-relationship between the village and the rural area, mention must be made of the initiative and progressive nature of the townspeople who have continually strived to improve and expand that relationship for the benefit of both groups.

Several forces have combined to continue and strengthen the economic and social connections between the farmers of the area and the village. One of the most important of these forces has been the weekly farmer's market at Hagersville.

The first market in the community was held in 1892 when farmers sold their produce along the streets of the village. Despite the initial opposition of the local merchants, the selling of products directly to the townspeople grew steadily. In 1920, the opppsition had ceased and the present property (See Map VII) was purchased by the town and set aside as a farmer's market to be held each Wednesday. In 1926, the first market fees were collected.

Ever since its purchase, the market property has undergone continual improvement. In 1930, a steel shelter was constructed to contain 30 stalls. Four years later additional land was acquired and a scale house for weighing farm animals and poultry was built. Later improvements have included the paving of the market with asphalt and the erection of rest rooms. The market area also functions as a parking lot for hundreds of cars.

The market place now covers about two acres in the centre of the village and contains 125 stalls which are available to farmers. Farmers pay a weekly fee of 50-75¢ according to their location. Revenue from these fees have increased from $ 20 in 1926 to over $ 2000 in 1952. Over half of this sum is retained as profit by the municipality.

In addition to Haldimand farmers, the market attracts large numbers of fruit growers, market gardeners, and farmers from all parts of the Niagara Peninsula and Norfolk County. Buyers who attend the market are predominantly from the Hagersville area. However, shoppers from more distant points form an important minority group.

The sale of poultry and other fowl constitutes an important part of the market's activity. An average of 10 tons of this product is marketed daily. In 1950, the total year's sales of poultry amounted to 571,301 pounds. In the summer months the market is dominated by large quantities of fruits, vegetables and flowers which are offered for sale. In the winter months offerings consist mainly of fish, meat, honey, and dairy products.

Hagersville's market is today one of the finest to be found in any small town in Ontario. Besides being a source of revenue for the community it has been an object of pride for both municipal officials and village residents. More important, however has been the effect the market has had upon the growth and development of the community. In continuing and expanding its market, Hagersville has retained its marketing function and has resulted in a greater interdependence between the farms of the district and the village. The market has in part enabled the community to resist the trend of depopulation and declining importance which has affected many other communities in the region. The village has taken advantage of the advent of good roads, automobiles, and railway facilities to consolidate and improve its position.

The presence of the market has to be a considerable degree helped make Hagersville the dominant service centre in the western part of the country. Large numbers of the rural population come to Hagersville

either to offer produce for sale or to take advantage of the cheaper prices and greater variety of goods found in the market. Through the impetus given by the market, Hagersville has come to supply the farm community with most of its consumer goods. The influx of buyers has meant greater sales for local merchants who carry large stocks of work clothes, work boots and other articles in demand by the district farmers. The farm trade has thus become an important factor to most of the business establishments of Hagersville.

The market has tended to stabilize business and encourage progressive merchandising methods. In response to the increased trade, modern well-stocked stores have been built to accommodate the large rural trade of Wednesday, Friday and Saturday. The market has helped strengthen community spirit and develop a closer economic and social relationship with the rural population.

The establishment in Hagersville of several seed and feed mills has tended to increase its marketing function. A profitable seed cleaning industry conducted by two local mills has developed as a result of the large acreage devoted to clovers and grasses. Since the decline of seed production in the area, the cleaning of seed for other firms has become an important feature of the industry. Large shipments of seed are received from western Canada.

There are also two mills in the village which specialize in the production of commercial feeds and feed mixes for livestock. Local farmers bring their grains to these mills where it is ground and mixed for feeding to their animals. In addition the village has become the market centre for the grain crops of the area. The local mills purchase the cash grain crops and ship them to the flour mills by rail.

The presence of six establishments dealing in farm machinery gives a further indication of the volume and importance of the rural trade to the village. A complete line of the most modern machinery is carried by these firms. The large business conducted by these agencies is evidence both of the increasing prosperity of the rural area and of the high degree of mechanization attained by the farm economy.

A recent innovation which has attracted large numbers of rural buyers has been the weekly Friday auction sales. At these sales a wide variety of household goods, farm machinery and livestock of all kinds is offered for auction.

Other enterprises in the village which owe their existence either wholly or in part to the agricultural development of the surrounding district include, a creamery, an egg grading station, two chick hatcheries several oil and gasolene agencies, and one feed store. Meanwhile the local theatre which is the only one within a radius of 15 miles (except for a small one at Caledonia) draws many of its patrons from the rural populations.

The close, close association between the rural community and Hagersville has been further strengthened by the new system of secondary school education in the county. High schools in the smaller villages such as Jarvis, Selkirk, and Cayuga have been closed and most of the pupils sent to Hagersville by buses. This has increased the tendency for the rural population to look to Hagersville as the focal point of the region.

Trade Area of Hagersville

An area which look to one community more than any other as the focal point for its economic and social associations, could be termed the trade area of that community. These associations are for the

most part an outcome of the rural-urban relationships which a town develops with its rural hinterland. The strengthening and expansion of these relationships will thus result in an increase in the size and influence of its trade area. Hagersville, which has formed a strong and intimate group of associations with the surrounding agricultural region, has thus developed an extensive trade area.

The approximate extent of Hagersville's trade area has been determined by the use of numerous criteria. The sphere of influence of any community can be best estimated by a survey of the people who shop in the town in an effort to discover where they come from. Delimiting the area which local industry draws upon for its labour force is another important criterion. Factors of lesser importance which are used to determine the boundary of the trade area include, the area serviced by the school system, paper circulation, and the location of bank depositors. In Hagersville, the marketing of agricultural produce provides an additional guide in the determination of the limits of the town's influence.

Upon consideration of these factors, it became apparent that Hagersville was the dominant trade centre in the western portion of Haldimand County and that its influence stretched into parts of Brant and Norfolk Counties. Hagersville's ability to retain its marketing function has influenced many farmers to come here rather than to other centres for purposes of marketing their goods and purchasing household articles, foodstuffs and clothing.

Hagersville's trade area has been particularly well-developed because it has not had to contend with the powerful competition of Hamilton, Caledonia, however, which is in a position to challenge Hagersville has never been a serious competitor because it lies within

Hamilton's sphere of influence. At the same time, Caledonia lacks the extensive rural hinterland which surrounds Hagersville. As a result Caledonia has failed to develop a strong trade area which could compete with that of Hagersville to the south.

Hagersville's sphere of influence is more definable in a north-south direction than in an east-west direction. The presence of Caledonia, nine miles to the north, and Jarvis, six miles to the south tend to restrict somewhat the influence of Hagersville. Its trade area, however could be said to extend from five to six miles to the north and about four miles to the south. In the west, there are few communities to which the farmers are attracted. As a result Hagersville has been able to extend her trade area to about ten miles in that direction. Eastward the only villages which exist are Fisherville and Selkirk which are located about twelve miles from Hagersville. These communities have a local importance as service centres but a large part of the population near these centres come to Hagersville for their shopping.

Future Possibilities

The future growth of Hagersville will depend largely upon her ability to attract new industries to the community. With the exception of the Canadian Gypsum Company, little expansion can be expected of the existing industries.

Hagersville is fortunate in having excellent rail and road transportation routes. In addition, the town also operates a recently installed water and sewage system. These factors should aid in encouraging companies to locate in the community in the future. It seems reasonable to predict that there will be a growth in the community based upon the establishment of several new industries.

Expansion in the western part of the village is definitely restricted by physical and political barriers. Any increase in the population in that portion of the town will be as a result of a more intensive use of the existing urban land. The southern and eastern edges of the community offer the best prospects for future expansion and building can be expected to continue in these areas.

CHAPTER VIII

SUMMARY AND CONCLUSION

Summary

Oneida Township lies in the western portion of the Niagara Peninsula and is well serviced by excellent rail and road facilities to Toronto, Hamilton and the United States. The topography of the area reflects the flat-lying nature of the bedrock. The geological resources of the area have given rise to extensive quarrying and gypsum mining operations. The study area was glaciated in Pleistocene times and subsequently inundated by the waters of glacial Lake Warren. The deposition which occurred resulted in the formation of extensive clay plains which cover the region.

The soils of Oneida consist mainly of heavy clays and clay loams. These soils, which are potentially very fertile, require careful management practices in order to maintain the fertility levels and to overcome the drainage problems which exist. The Township lies within the zone of cyclonic activity and favourable climatic conditions prevail.

Applying the land type concept, Oneida has been divided into four natural land units. Each of these types presents slightly different problems of land use. We have seen how in each type there has been an adjustment of agriculture to suit these varying conditions.

The area in which Oneida Township is situated was under the control of the Six Nation Indians up to the year 1832 when most of the land was purchased by the government. Settlement in the area lagged

behind until adequate communication facilities has been developed. Settlement commenced in 1842 and received an impetus with the construction of the railways in 1870-73.

The Township attained its maximum population in 1871 but it was not until 1911 that the maximum acreage of farmland was occupied. Since that time there has been a decrease in the amount of occupied land. At the same time there has been a continuing trend toward depopulation of the rural community. English, Scotch and Irish comprise the dominant national groups in the area.

A strip of land along the western boundary of Oneida still remains part of the Indian Reservation. The reserve constitutes an area with a high agricultural potential. It is, however, an area which at present is vastly underdeveloped. The Indian population lack any ambition or initiative and for the most part loathe farming as an occupation.

The combined effect of the fertile soils and the favourable climatic conditions which exist in Oneida has been to encourage the rapid agricultural development of the area. A general diversified type of farming economy prevails on most farms with the major emphasis being placed on the raising of livestock. The raising of dairy cows for the production of fluid milk to satisfy the demands of the near-by urban markets of Hamilton and Toronto has assumed a dominant position on the average Oneida farm. The trend toward dairying is reflected in the crop pattern in the area. Hay crops and pastures cover the most extensive acreages in the Township while the oat production leads all other cereals.

Agriculture on the Reservation contrasts radically with the highly developed system encountered in the remainder of the Township. A very small proportion of the Reserve is in improved land while large areas have reverted to woodlot, scrub and poor wuality pastures. Agricultural

methods and practices are generally inadequate with the result that the quality and yields of produce are low.

There are several important non-agricultural activities in the thesis area. Foremost among these is the mine and plant of the Canadian Gypsum Company. Here, gypsum rock is mined and manufactured into a wide variety of building products. Employment is provided for over two hundred men. Of the three quarries located in the Hagersville area, the Haldimand Quarries is the only one situated in the Township. Large quantities of crushed stone is produced mainly for road construction while production of agricultural lime has commenced recently. Drilling for natural gas constitutes a third important non-agricultural activity.

The largest community of the study area is Hagersville which is situated on No. 6 highway at the junction of the Canadian National and New York Central Railways. The three local quarries and the gypsum mine provide employment for many of the town's inhabitants. The presence of the market has aided the community to retain its marketing function. It is also an important distributing centre for an extensive rural trade area.

Conclusions

Oneida Township is a region of general farming. Emphasis is placed on dairying which has come to dominate the farm economy. With the near-by Hamilton-Toronto market expanding, it can be expected that this emphasis will become more pronounced in the future.

The land utilization pattern in Oneida has been a result of both physical and cultural influences. On the Reservation, the attitude and temperament of the people have been such as to discourage agriculture

and to permit large areas of the Reserve to remain in woodlot, poor weeded pastures and scrub lands. The cultural factor has been the greatest barrier to a complete and efficient use of the land resources of the area.

In the remainder of the Township the elements of the physical environment have had a significant influence on the utilization of the land. On the Hagersville land type, the nearness of the bedrock to the surface has been the limiting factor in crop production while in the Lythmore the drumlinized topography has caused further variations in the land use pattern. The primary problem for agriculture in the Township, however, is the poor drainage conditions which prevail as a result of the heavy texture of the clay soils. This is particularly true of the Haldimand land type. Oneida is an area which has been subjected to rural depopulation.

Hagersville is the dominant trade centre of the western portion of Haldimand County and functions primarily as a distributing centre for its extensive rural hinterland. The community has been able to maintain and expand its position because of the excellent transportation facilities which exist, and because of its ability to retain its marketing function.

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LAND UTILIZATION IN ONEIDA TOWNSHIP

CULTIVATED CROPS
HAY CROPS
PASTURE
WOODLOT
SCRUB
ORCHARD
RAILWAYS
URBAN LAND
IDLE LAND
C CEMETERY
SCALE
In Miles
I INDUSTRY
QUARRY
ROADS

August, 1952.

Ralph D. Vicero