B R A N T T O W N S H I P

By

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INTRODUCTION

This study was undertaken to present the aerial differentiation within Brant Township. To express these differences most clearly the Township has been studied on a regional basis. This includes a breakdown of the study area into small subdivisions and the relationships of the unit areas to each other to discover the structural and functional basis of the larger area.

It must be remembered that regional geography is sterile without the concepts and principles from systematic geography. Therefore systematic geography has been employed for an understanding of the aerial differences in each kind of phenomena and the relationships between them. Throughout the study, emphasis has been placed on the basic land utilization pattern of the Township.

Theland utilization maps are the result of systematic observation on a field to field basis. The functional map of Walkerton in the back cover illustrates the land use contained within the town. This map also constitutes the results of field work.

The study is divided into six chapters. The first chapter is a general introduction to the location, size and the physical

geography are discussed. Chapter three is a detailed account of the historical developement of the Township. The present day agriculture is dealt within Chapter four while non-agricultural land use, which includes on urban study, is discussed in chapter five. Chapter six, containing the summary and conclusion, completes the thesis.

ACKNOWLEDGEMENTS

The author wishes to express his appreciation for the advice and aid received from Professor H. A. Wood of the Department of Geography at McMaster University.

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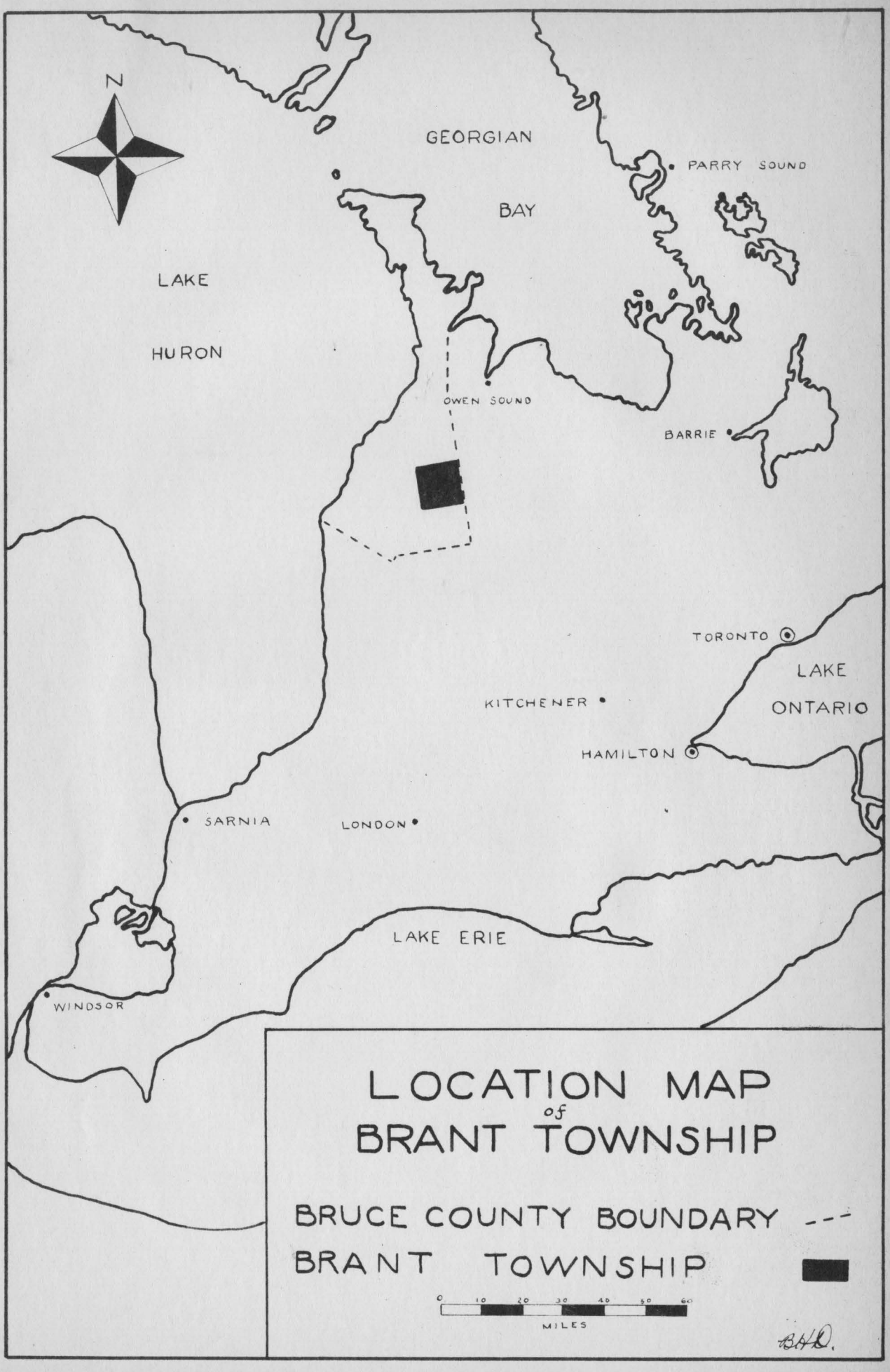

N
GEORGIAN
BAY
PARRY SOUND
LAKE
HURON
OWEN SOUND
BARRIE
TORONTO
LAKE
ONTARIO
KITCHENER
HAMILTON
SARNIA
LONDON
LAKE ERIE
WINDSOR
LOCATION MAP
of
BRANT TOWNSHIP
BRUCE COUNTY BOUNDARY ---
BRANT TOWNSHIP
0 10 20 30 40 50 60
MILES
B.H.D.

MAP I

CHAPTER 1

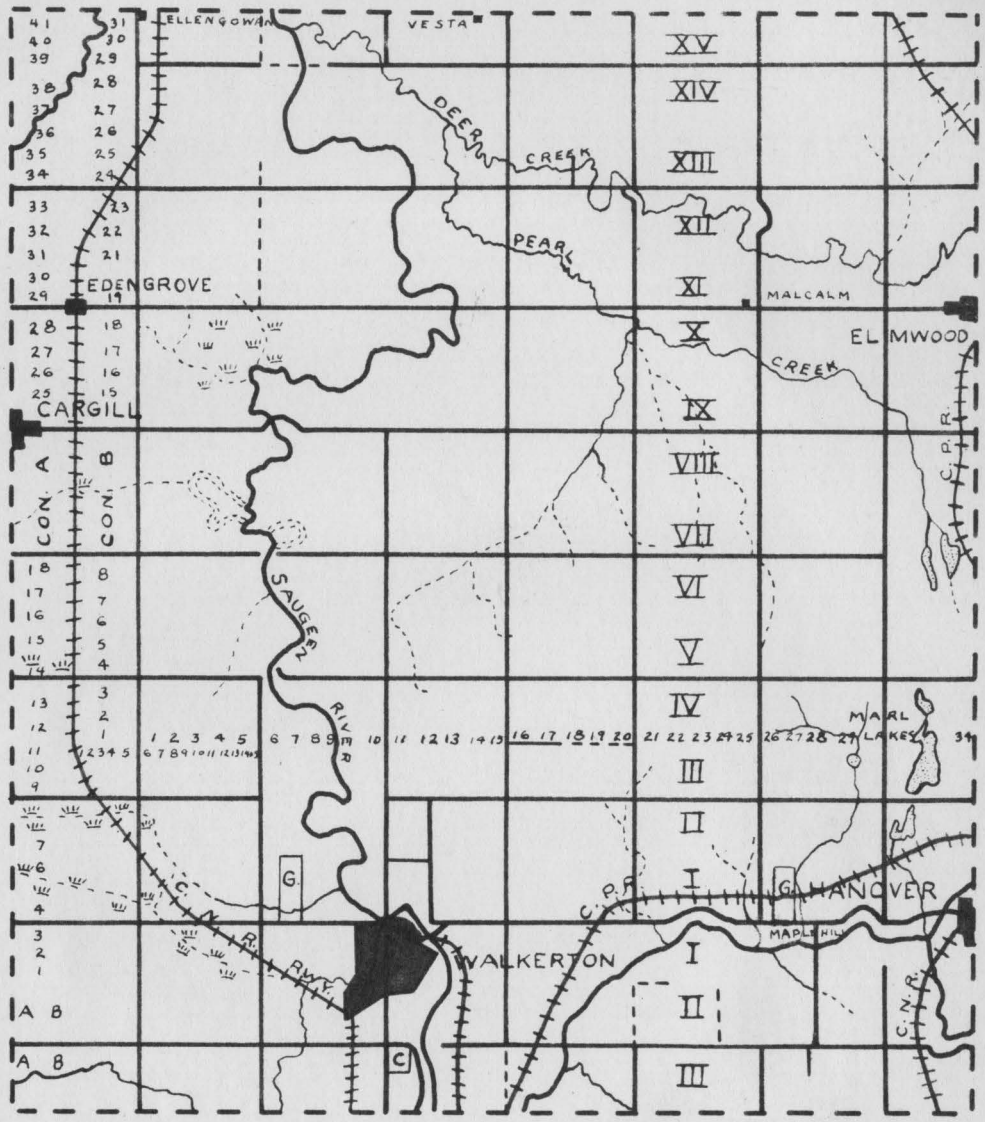
LOCATION

Brant Township is one of sixteen townships of Bruce County; a county which is located along the shores of Lake Huron to the Northwest of the main urban centres of Southern Ontario. The Township is located on the Eastern margin of the county. To the North, West and South it is bordered by three townships of Bruce County. These Townships are Elderslie, Greenock and Carrick respectively. To the East, Brant is bordered by Bentinck Township of Grey County.

The Township is rectangular block of land ten miles wide and eleven and one quarter miles long, with a total area of 72,000 acres. The division of the Township into concessions followed rather than proceeded the survey of the first roads through Brant and consequently a peculiar system of numbering lots and concessions has developed.

For the most part roads were laid every one and one quarter miles, both in an east - west direction and a north-south direction. Therefore the concession blocks are one and one quarter miles square and each contain one thousand acres. The shifting course of the Saugeen River prevented the laying of roads in the north-western section of the Township because of the great cost involved in building bridges. But the concessions and lots are numbered in the same manner as in other parts of the Township. The subdivision of the Township is illustrated in Map 2.

BRANT - KEY MAP



LEGEND

LAKES		ROAD	
STREAM		i PERMANENT	
i PERMANENT		ii ABONDONED	
ii INTERMITTENT		URBAN	
iii OLD MEANDERS		CONCESSION	I
MARSH		LOT	1
RAILWAY		GOLF	G
TOWNSHIP BOUNDARY		CEMETERY	C

BHD.

MAP 2

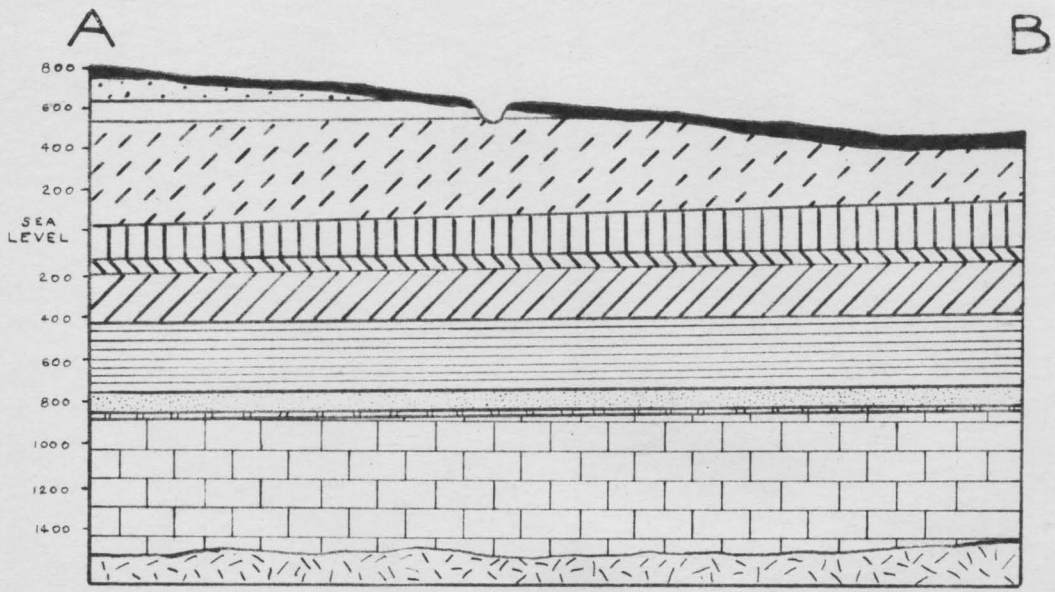
The Township is located to the Northwest of the large urban centres of Southwestern Ontario. It is over one hundred miles distant from Toronto, Hamilton and London. The closest large urban centre is Guelph which is more than sixty miles to the Southeast of the study area. From this it can be seen that the Township occupies a peripheral position with respect to the main urban centres of Southern Ontario.

This peripheral location can be further emphasized in connection with the major highways. The Durham Road provides the main highway for the Township but it skirts the southern boundary only. There are no main thoroughfares crossing the study area, County and Township roads, none of which are paved, provide the only means of road communication throughout the Township.

Two railways pass through the Township and are focussed on Walkerton. The Canadian National Railway has a line from the large urban centres of the Southeast through Walkerton to Owen Sound. This line traverses the Western side of the Township. The Canadian Pacific Railway line is a branch line from Flesherton which skirts the Eastern boundary of the Township to Hanover. Another branch line of this railway connects Hanover to Walkerton.

GEOLOGY CROSS SECTION

ONTARIO DEPT. OF MINES



STRUCTURE SECTION ALONG THE LINE A-B

LEGEND

- DRIFT
- ONONDAGA LIMESTONE
- BERTIE-AKRON DOLOMITE
- SALINA DOLOMITE
- GUELPH-LOCKPORT DOLOMITE
- MEDINA SANDSTONE
- QUEENSTON SHALE
- MEAFORD & DUNDAS SHALE
- BLUE MOUNTAIN SHALE
- COLLINGWOOD SHALE
- TRENTON & COBURG LIMESTONE
- PRECAMBRIAN

HORIZONTAL SCALE

1 0 1 2 3

MILES

MAP 3

CHAPTER 11

THE PHYSICAL GEOGRAPHY OF BRANT TOWNSHIP

BEDROCK GEOLOGY

The Township lies within the Paleozoic plain of Ontario lowlands which stretches from the Canadian Shield. The area is underlain by sedimentary strata to a depth of over 2,000 feet (see Map No. 3) which lies unconformably on old Precambrian rocks. The Silurian and Devonian systems form the uppermost strata of these sedimentary rocks and are the bed rock for the Township.

Towards the close of the Silurian period a slight emergence of the continent converted part of the Silurian Sea into a partially enclosed basin. Rapid evaporation caused by the aridity of the climate, produced large saline beds known as the Salina Formation. In Brant, these strata comprise the bedrock over the northern three quarters of the Township.

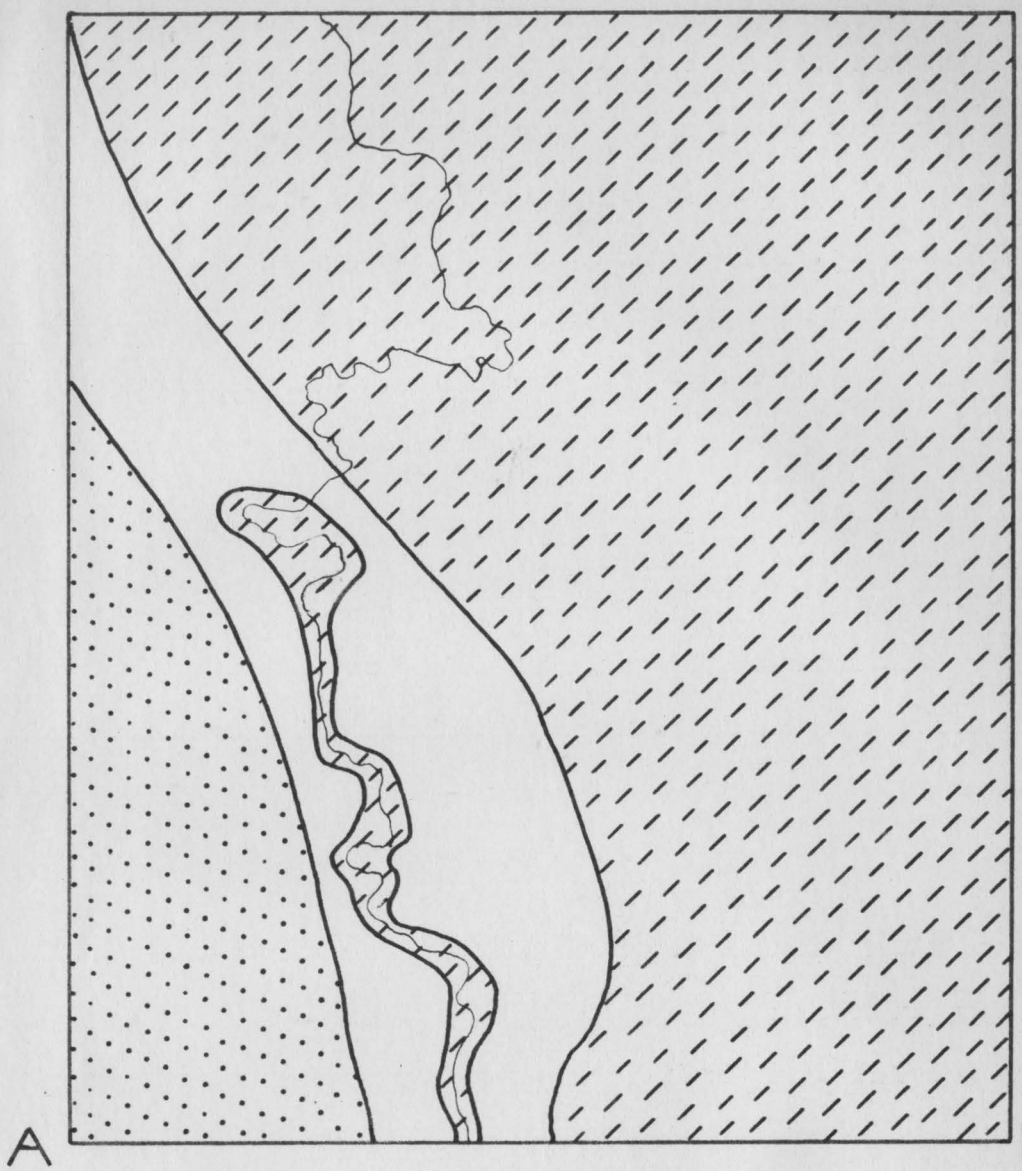
The Salina shows an alteration of distinct grey and brown zones. The brown consists of fine crystalline to dense dolomite, and the grey varies from argillacious dolomite to dolomite shale. The formation as a whole is calcareous. Traces of gypsum are present throughout practically the entire area and may occur in zones up to five feet thick, commonly within the lower one hundred feet of the formation. The lower limit of the formation is not everywhere easy to locate due to the similarity between the lower Salina and the upper Guelph dolomites. However, the thickness of the formation varies from three hundred feet in the East to five hundred and thirty feet in the West in Brant Township.

Overlying the Salina in the Southwestern section of the Township in a strip approximately two miles in width is the last Silurian deposit, the Bertie-Akron formation. This series consists of brown, brownish-grey and finely crystalline to dense dolomite, underlain in some area with black lutuminous shale. An analysis of the Bertie-Akron Formation shows the following composition: 55% $CaCO_3$, 44% $MgCO_3$, .4% SiO_2. The greatest thickness of this formation in Brant Township is one hundred and twenty-five feet.

A period of continental uplift brought the Silurian period to a close. The existing seas regressed initiating a period of erosion. A later submergence and consequent invasion by the Devonian Seas resulted in the deposition of the Onondaga limestone. This formation which lies unconformably on the Bertie-Akron dalomite is situated in the extreme Southwestern section of the study area.

The Onondaga strata consists of grey, to brown finely crystalline to dense limestone. The bedding plains have been made irregular by the abundance of grey to white chert in alternate beds. Analysis of the Onondaga shows the following composition: 56% $CaCO_3$, 1 2% SiO_2, 22% $MgCO_3$, the high silica content of the rock and its resultant hardness and durability makes it ideal for road surfacing. One of the few quarries of the area is located in the Southwestern corner of the Township, where Silver Creek has eroded away the glacial drift to reveal the bedrock beneath. At Cargill this formation is only twenty feet thick.

There has been no strong deformation of the Paleozoic rocks of this area and they are generally flat lying. They have a gentle dip to the Northeast which averages forty-four feet a mile.



BED ROCK GEOLOGY of BRANT TOWNSHIP

0 1 2 3

ONTARIO DEPT. OF MINES

LEGEND

SALINA FORMATION

BERTIE-AKRON DOLOMITE

ONONDAGA LIMESTONE

MAP 4

PHYSIOGRAPHY

Brant Township lies within an area which has been glaciated at four different times in geologic history. The last of these glaciations, the Wisconsin, transported the surface deposits which are at present found over the Township. This ice sheet, fanning southwards from Georgian Bay and Lake Huron completely covered all of Southern Ontario and extended to Southern Ohio. The section of the ice sheet which covered the study area was named the Georgian Bay Lobe. In its advance over Brant Township it formed a till plain. The elevation of the till plain to the North is lower than that of the drumlinized area to the South because of the bedrock which dips to the Northeast.

With the recession of the glacier the Orangeville interlobate moraine to the East and South of Brant Township was the first land in Southern Ontario to be uncovered. The lobes of the glacier melted back from this central section of Southern Ontario uncovering "Ontario Island" and in the Southeast forming Lake Maumee.

The thesis area at this time was covered by the Georgian Bay Lobe of the retreating ice. As the lobe retreated over Brant Township the first features to be revealed were the till plains and the drumlins in the Southern most portion of the Township. The retreat continued until the ice front lay north of the Township. Renewed cold weather however caused a readvanced of the ice sheet and a single stranded terminal moraine, the Walkerton moraine was formed running across the study area. The glacial meltwaters at this time flowed to the East in a large spillway in front of the moraine. These melt waters

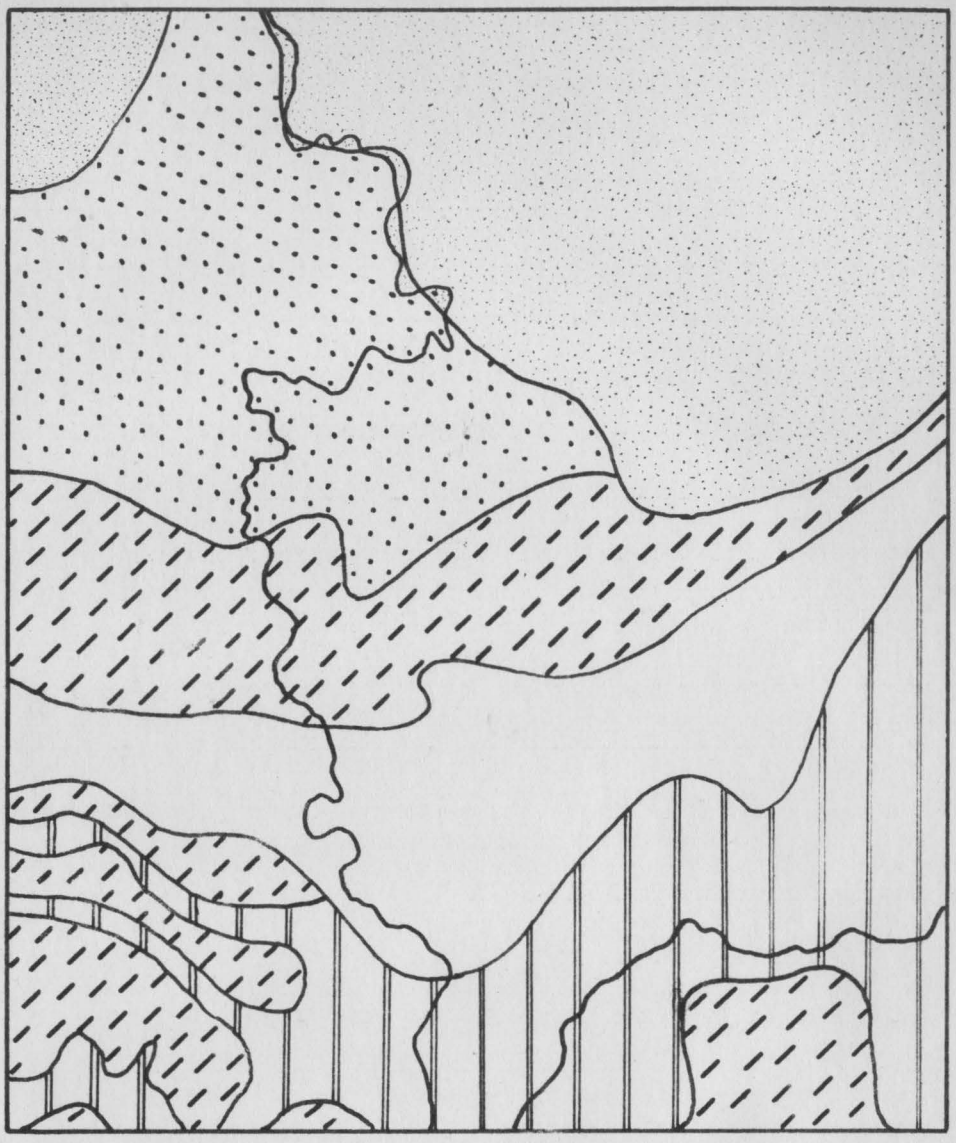
flowed to the drainage basin of Lake Ontario or Lake Erie.

Meanwhile the Wyoming moraine had been formed by one of the advances of the Huron Ice Lobe. This ice lobe which had retreated and advanced sporadically during this time now began a steady retreat. A bay of Lake Warren, formerly Lake Whittlesey, advanced North between the retreating Huron Ice Lobe and the high Wyoming moraine of "Ontario Island".

About this time the Georgian Bay Ice Lobe had retreated to an area North of the Township, permitting the aforementioned bay to advance into the thesis area and inundate the low area North of the till plain. The lower elevation of this area in comparison with that to the South is also due to the gentle dip of the bedrock to the Northeast. The Saugeen River, which followed the course of the old spillway, emptied into the bay of Lake Warren.

The course of the glacial spillway had been east from the present site of the Greenock Swamp due to the glacier and terminal moraine to the North. But with the retreat of the glacier, the course of the spillway was changed. The river now ran through a low place in the terminal moraine, North to Lake Warren. The sediments of the Saugeen River were deposited into Lake Warren and formed a large delta. This delta today forms the sand plains in the Northwestern portion of the Township.

The entire ice front, which had formed a dam to the North then continued its retreat. When the ice sheet receeded from the Kawartha Lakes district, Lake Algonquin (formerly Lake Warren) found an outlet into Lake Ontario. This caused the level of Lake Algonquin to drop



PHYSIOGRAPHY OF BRANT

AFTER PUTNAM & CHAPMAN

LEGEND

N

SAND PLAIN

CLAY PLAIN

TILL PLAIN

TILL MORAINE

SPILLWAY

MAP 5

and the bay covering the north of Brant Township was drained revealing clay deposits beneath. This left the thesis area dry land.

SURFACE FEATURES

In the foregoing section the glacial history was interpreted. Now each of the surface features will be described in some detail

The till plains and drumlins of the southern and southwestern sections of the Township formed, at one time,a continuous deposit, however, the Walkerton terminal moraine and outwash sand and gravel, now divide the plain into two major parts. The section to the north is one and one half miles wide at its greatest extent but becomes progressively narrower to the east and almost dissappears at Elmwood. Along its northern border the plain contacts both the sand plain in the west and the clay plain in the east. These two materials have become incorporated into the till by the action of water giving the overburden along the northern edge of this plain and sandy loam texture in the west and a clay loam texture in the east, Along the Southern border the plain is terminated by the stoney Walkerton moraine.The plain is moderately rolling.

Varying proportions of the till were planed and moulded into poorly developed drumlins. The rolling till plain north of the terminal moraine contains no drumlins. To the south of this moraine are contained the only drumlins in the area. There are only seven of them. The drumlins stand up quite plainly but have not the usual oval outline andpresent a rather ragged appearance. On the whole they average one half mile in length and 75 to 100 feet in height. They contain a perponderance of pale brown or grey limestone with outwash sand and gravel between them.

The Southern section of this plain is discontinuous. Outwash sand and gravel have been laid down over the till of this southern

portion covering much of it and leaving only parts of it visible. Those sections which are exposed are also rolling and contain drumlins in the western portion.

On the whole the till is loamy in texture, moderately compact and highly calcareous. It is pale brown in colour due to the brown members of the Norfolk limestone formation from which it is derived. The lack of numerous large boulders in the till attests to the softness of these limestones.

The Walkerton moraine presents a mile wide single-crested ridge running north of the drumlinized plain from east to west. After being built up by the glacier it was cut through at a low point by the Saugeen River which to-day flows through it in a valley one half mile wide and one hundred and fifty feet deep. The moraine is rugged and bouldary and reaches a height of 1,050 feet above sea level. The materials of this moraine are a loose stoney loam in which dolomite, carried down from the North, predominates. The percentage of clay is less than that of sand and gravel.

At the southern base of the walkerton moraine is a broad spillway. As the ice retreated this spillway carried large rivers which drains the ice front. These glacial streams deposited broad sand and gravel terraces which now carry branches of the Saugeen River. At the Eastern border of the Township the spillway becomes very broad, with deep gravel beds. Towards Walkerton the spillway narrows considerably. The drainage has cut distinct valleys in this section of its course. West of Walkerton two main and two minor spillways lead from the main spillway to Greenock Swamp to the west of the thesis area. The two minor outlets in the North are swampy and are occupied by small intermittent streams. The two major ones drain southwards out of the thesis area

and then westwards to the Greenock Swamp. The depth of sand and gravel in this spillway varies from 65 feet in the vicinity of Hanover to 8 feet in the minor outlets.

The Saugeen Clay Plain and Sand Plain are the last physiographic features to be explained. The small clay plain is situated in the northwestern section of the Township in the drainage basin of the Saugeen River. The deep stratified clay was deposited in a bay of Lake Warren by iceborder drainage channels from the east. The clay is pale brown in colour and highly calcareous. It was probably derived from the limestones and dolomites of the local bedrock. It seems that the till plain to the south marked the southern border of this bay while the ice front marked the northern border. Originally the relief was flat to undulating but the Saugeen River, Deer Creek and Pearl Creek have cut deep valleys into the clay beds. In some cases these valleys are over 75 feet in depth. This has caused considerable lateral gullying into the clay. Drainage is a problem in this area due to the compactness of the soil particles.

The Teeswater River, just to the west of Brant Township, and the Saugeen River emptied into Lake Warren separately but their deltas came together to form the present day sand plain in the northwest of the Township. The sand plain lies on either side of the Saugeen River. This area has also been greatly dissected by the Saugeen River. The river valley reaches, in some areas, a width of almost 2 miles and is 75 feet in depth. Flooding and drainage are serious problems especially where the sand is underlain by clay close to the surface.

CLIMATE

Brant Township lies in a region which Köeppen designates as a Dfb type climate.[1] This type represents a humid microthermal climate in which there are cold winters and warm summers with sufficient precipitation throughout the year for general farming.

Within this broad climate zone local circumstances have caused regional variations. For this reason Chapman and Putnam include Brant in their climatic zone known as the Western Upland Division.[2] This division is delimited on the basis of lower temperatures and higher rainfall than other areas of Southern Ontario. With this classification as a background, data received from the meteorological station at Walkerton can be used to describe the climate of Brant Township.

Brant Township lies in an area directly in the path of the westerly winds and the cyclonic storms which cross the continent from west to east. Thepassage of these storms produces a characteristic type of climate which is noted for its extreme changeability.

Lying to the east of Lake Huron, Brant has a humid climate. Table 1 illustrates the precipitation, both rain and snow, received throughout the year.

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

TABLE #1

PRECIPITATION

MONTH	RAIN	SNOW
January	4.10"	31.9"
February	2.87"	22.1"
March	2.78"	17.9"
April	2.91"	4.7"
May	3.3 "	.5"
June	3.09"	----
July	3.0 "	----
August	2.68"	----
September	3.27"	----
October	3.58"	1.6"
November	3.67"	12.4"
December	3.49"	24.4"
TOTAL	38.74"	115.5"

The distribution of precipitation throughout the year is fairly uniform. There is, however, a slight maximum in the winter months and a slight minimum in the late spring and late summer months. The distribution of precipitation is important for seeding and harvesting of crops. Too much rainfall in the spring months delays planting of seed while too much precipitation in the autumn months delays harvesting. The result of either is lower yields. Over the whole study area precipitation decreases slightly to the northwest.

The Lake waters to the west of Brant influence the temperatures of the township. Air from the west passes over the lake and is warmed slightly before it reaches Brant, this has an ameleorating affect on the temperatures of the Township. From the meteorological station at Walkerton the temperature information in Table 2 was obtained.

TABLE #2

TEMPERATURE (°F)

MONTH	DAILY MAXIMUM	DAILY MINIMUM
January	26.7°	14.1°
February	27.1°	11.2°
March	36.6°	21.1°
April	50.3°	31.8°
May	64.1°	40.9°
June	75.0°	50.2°
July	80.3°	34.6°
August	78.6°	51.9°
September	71.4°	47.5°
October	57.8°	32.0°
November	42.9°	29.6°
December	30.9°	19.4°
Yearly Ave.	53.5°	34.2°

The relief of Brant Township causes slight local variations in temperature. The lower areas are usually cooler than the higher areas. The average date of the last frost in spring is May 22, and the average date for the first frost in autumn is September 20. Therefore Brant has an average frost free period of 122 days. The growing season averages a longer time than the period between the last frost in the spring and the first frost in the autumn. The growing season is 170 days. Generally, the humid climate, favourable distribution of precipitation and the temperatures are quite satisfying for mixed farming.

NATURAL VEGETATION

After the classification drawn up by Halliday, Brant Township lies in the Huron-Ontario section of the Great Lakes - St. Lawrence Forest Region.[1]

1. Halliday, W.E.D., A Forest Classification for Canada Bulletin 89, Forest Service

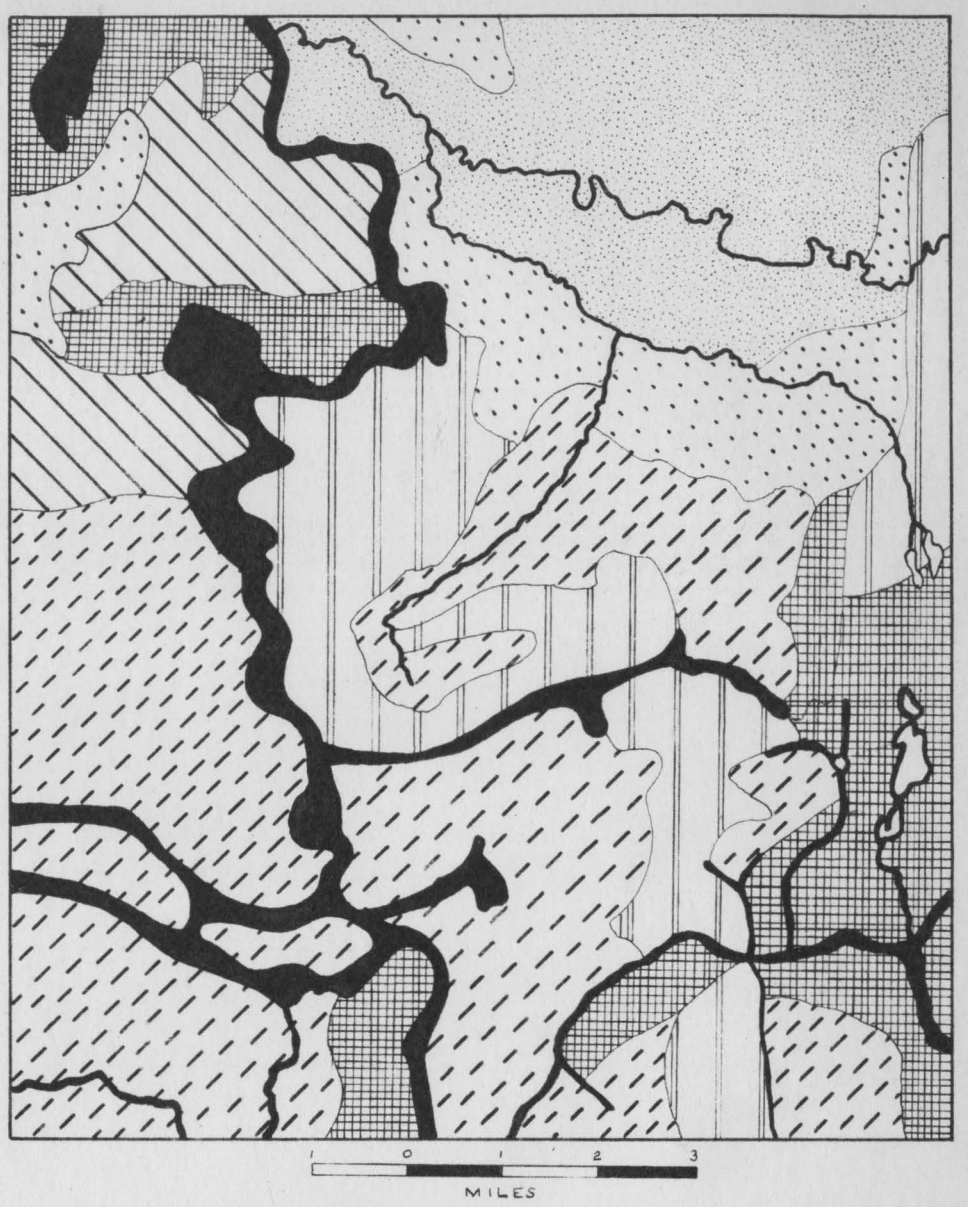
The characteristic association found in Brant Township is composed of sugar maple and beech on the well drained sites while on the poorly drained sections are found basswood, yellow birch, white ash, and red, white and bur oak. Small groups of hemlock, and balsam and an occasional white pine occur within the association. One authority, describing the vegetation present while surveying the Township states, "The Township contains little swamp and those that do occur are of limited extent and are timbered with cedars, pine, tamarack, and black ash,"[1]. In the southwestern portion of Brant, sycamore and black walnut are common. The tree associations are predominately of the broad-leafed varieties. Within this area are found the northern limits of many species. The sycamore, butternut, and hickory which do not go north of this area.

Brant Township has been well settled and much of the original forest cover has been cleared leaving only small farm woodlots. The area has, however, about 7,426 acres of woodlot much of which is in second or third growth. There is one small woodlot in the northern section of Concession B which still retains its virgin forest. The association here consists of red maple, hemlock, elm and white pine.

SOILS

In the study area three distinct kinds of profiles occur each representing a Great Soil Group. Grey-Brown Podzolic, Brown Forest, and the Dark Grey Gleisolic. The Grey-Brown Podzol soils are the dominant well-drained soils of the area. The Brown Forest and the Dark Grey Geisolic soils, both of which are found in the north of the Township, are not common in the area.

1. Brough, A. Diary of the Survey of Township of Brant.



SOILS OF BRANT

AFTER O.A.C. SOIL SURVEY REPORT

LEGEND

HARRISTON LOAM

SAUGEEN SILT LOAM

SAUGEEN SILTY CLAY LOAM

WATERLOO SANDY LOAM

FOX SANDY LOAM

GRANBY SANDY LOAM

BOTTOM LAND & MUCK

B.A.D.

MAP 6

The soils of Brant have been formed from unconsolidated materials or drift which was laid down at the time of or in connection with the Wisconsin glaciation. The parent materials present in Brant Township are till, lacustrine, outwash and glacia-fluvial. The soil survey conducted by the Soils Department of the Ontario Agricultural College shows twenty-six soil types in the Township. These have been reduced to seven types which are shown on Map 6. A description of the soils follows:

Till Soils

Harriston Loam. This series is formed from loamy calcareous till derived from the underlying bedrock and exhibits the characteristics of the Grey-Brown Podzolic Soil Group. This soil covers a large section of the southern and western part of the study area and can be described as a grey-brown, slightly acid (pH 6.7 to 7.0) soil with good external and internal drainage that has developed on a moderately sloping upland.

The surface soil is a dark greyish brown loam or slit loam about 4" in depth. The characteristic grey colour may be the result of the low organic matter content. The A_2 horizon has 13" to 16" of yellowish brown loam with a weak platy structure but of friable consistency. In the lower 3" of this horizon a pale brown layer is usually present. The B layer, 7" to 10" thick, is composed of brown clay loam found just above the unweathered light yellowish brown loamy till. The lack of sorting by water on this soil is seen in the heterogeneous nature of the soil profile.

Erosion is not serious on this soil type. The moderately sloping topography is susceptable to slight erosion but this can be adequately by relatively simple measures. Stream erosion is not a hazzard on this soil type. Both the internal and external drainage is good. This is due primarily to the moderate slopes and the loamy structure of the sub-soil. In general, the potential fertility of of the Harriston Loam is high and at present is in very good condition. However crop response is usually improved by additions of fertilizer. The main requirements of this soil are phosphates and organic matter. Barnyard manure usually suffices for the organic matter content. In general, this soil produces the best crops in the county.

Occuring in close association with the Harriston Loam are small patches of Listowel Loam. The horizons in the Listowel are not as well defined as those of the Harriston series but they do show characterist ics of a weakly developed Grey-Brown Podzolic soil. Imperfect internal and external drainage and frequent stones are the chief differences between the Harriston Loam and the Listowel Loam. When drained this soil supports the same crops as the Harriston Loam.

Lacustrine Soils

Soils of lacustrine origin are confined to the northeastern section of the study area. The parent material of these soils is clay which was deposited in Lake Warren. These soils have developed a profile which exhibits characteristics of both the Brown Forest and Grey-Brown Podzolic soils and therefore may be considered as an intergrade between these two Great Soil Groups.

Saugeen Silty Clay Loam. The soil profile of this series is developed on pale brown calcoreous lacustrine clay. The A_1 horizon, 4" in depth, is a grey silty clay loam, neutral to slightly acid in reaction. The B_1 layer, 4" to 5" thick, is yellowish brown in colour and entirely stonefree. The B_2 horizon, 5" to 6" in depth is brown and has a weak columnar structure. The parent material is pale brown clay. This soil when dry has a hard consistency but when wet is plastic.

The topography is smooth to gently rolling but along the stream courses steeper slopes occur. These soils are susceptible to sheet erosion and, along the stream courses, gully erosion. In some places along the stream courses a great part of their surfaces soil has been lost. Internal drainage is slow but the fall towards the stream courses is sufficient for rapid surface drainage.

Heaviness of texture is the common characteristic of the aforementioned soil. In a rainy spring this is an undesirable physical property because it requires much power for cultivation. These soils have a high water holding capacity and when wet they tend to become plastic in nature. As a result they tend to warm up slowly and may be considered late soils. Upon drying, these soils become friable in their upper horizons but become of a hard consistency in the lower horizons.

From a chemical standpoint, the Saugeen Silty Clay Loam is low in phosphate and organic matter while potash levels are generally high The acid reaction aggrivates the phosphate deficiency problem by fixing that element in unfavourable form. There is a great inherent potential fertility in these soils despite their heavy texture which conteracts easy cultivation.

Saugeen Silt Loam. This soil lies along the borders of the Saugeen Silty Clay Loam where incorporation with the underlying till has produced a silt loam soil. The Saugeen Silt Loam has the same profile characteristics as the Saugeen Silty Clay Loam but differs in texture. Nutrient levels are lower in this type but applications of fertilizer and manure allows this soil to support crops similar to those of the silty clay loam soils.

Along the flood plains of the streams which cross this soil area a glusolic soil type has developed due to the poor drainage. These soils are very limited in occurence.

Outwash Soils

These materials are well sorted sands and gravels deposited in smooth gently sloping plains and terraces. The depth of the outwash is variable. In some cases it is underlain by till while in other places it is underlain by clay. This is the principal reason for dividing the soil developed on outwash into two types: the Fox Sandy Loam and the Granby Sandy Loam. The Fox Sandy Loam is underlain by till at a relatively great depth while the Granby Sandy Loam is underlain by clay at a relatively shallow depth. This has given rise to two different Great Soil Group profiles, the Grey-Brown Podzolic and the Dark Grey Gleisolic.

The Fox Sandy Loam

This soil is a typical member of the Grey-Brown Podzolic soil group, and occurs in the southeastern and northwestern corners of the Township. They can be described as brown slightly acid (pH 6.5 to 6.7) soils with good natural drainage that have developed on smooth gently sloping well-sorted outwash materials.

The A_1 horizon is composed of 4" of very dark greyish brown sandy loam, often with a fairly high percentage of silt. The A_2 layer, 20" to 22" thick ranges from a yellowish brown colour at the top to a very light yellowish brown at its base. The structure is simple grain with aloose constituency. The B layer, 2" to 4" in depth is composed of a dark brown friable loam. The parent material is a light grey sand. This soil type is entirely stone free.

The topography is smooth and gently rolling which precludes serious sheet or steam erosion but wind erosion is serious on this soil type. both surface and internal drainage are good due to the light, open structure of the soil. The porous soil materials allow for rapid percolation of moisture and early warming and therefore early cultivation of this soil.

Fertility of the Fox is low. Mineral fertilizers are required to raise the levels of nitrogen, phosphate, and potash while cover crops and manures should be used to raise the organic matter content.

The Granby Sandy Loam characterizes the Dark Grey Gleisolic type of soil in the Township. It is confined to the northwestern section of the Township. It has been differentiated from the Fox because of its drainage. This neutral soil (pH 6.8 - 7.1) has developed on smooth very gently sloping to depressional topography. But in connection with this topography is the presence of impermeable clay or rock layers at depths of 5' or more.

The A_1 horizon of this soil is composed of 7" of dark brown sand loam with a pH of 6.8. The G layer consists of 21" to 25" of light brownish grey sand. The mottled appearance of glei soils is characteristic of this layer. The parent material is light grey, stonefree sand.

The topography and impermeable clay layers have given this soil poor drainage. This results in late spring warming and therefore late cultivation. If these soils are to be cultivated, artificial drainage must be provided. Also, because of the low fertility, all plant nutrients including nitrogeneous, phosphatic and potassic fertilizers must be added.

Glacio-Fluvial Soils

The soil materials of this soil type are badly deformed due to the action of both ice and water. They are poorly sorted having abrupt changes in particle size. This formation occurs in close association with the till. The soils have developed on steep irregular slopes which leaves the soil open to erosion.

The Waterloo Sandy Loam. The A, horizon of this soil is composed of 4" of very dark greyish brown sandy loam which has a pH of 6.5 - 7.0. A light yellowish brown sandy loam, 10" to 13" thick, comprises the A_2 horizon while the B layer is a brown loam 6" to 8" in depth. The unweathered parent material is a grey sand. Occasional stones occur throughout the profile.

The topography of the Waterloo is steep and irregular. This has led to sheet and wind erosion especially when the soil is left without vegetative cover. Stream dissection is not common in this soil type. The porous nature of the soil has resulted in a free movement of water in the profile. Therefore this soil has a high external and a rapid internal drainage which is not excessive. Because of its porous nature it warms up earlier in the spring than the Harriston Loam and therefore is classed as an early soil.

The potential productivity of this soil is low. The chief needs include lime and phosphate fertilizers and manures to raise the fertility and organic matter content.

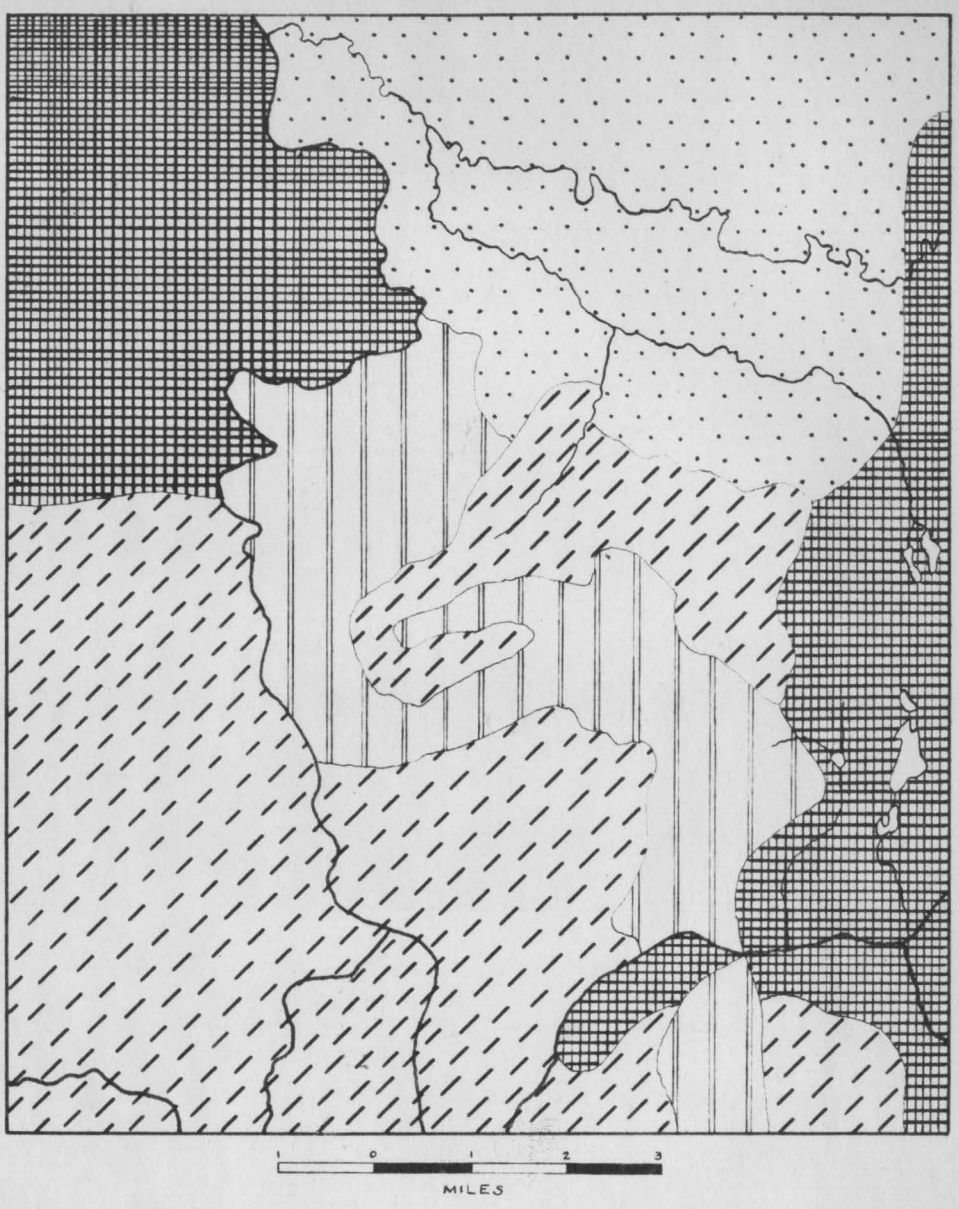
This soil is similar to the Fox in several important aspects. Low fertility, susceptibility to erosion and droughtness are common to the two soil types. On the other hand they differ in other aspects. The gently rolling topography of the Fox contrasts with the steep, irregular slopes of the Waterloo soil type. The frequency of stones is another difference. While the Fox is stonefree, the Waterloo is moderately stoney.

Bottomland and Muck

Bordering the stream courses are the azonal soils known as bottomland. The flooding to which this land is subjected has produced an immature soil with little horizon differentiation. The excessive moisture conditions tend to restrict its use to pasture. These soils are sometimes cultivated and used for general farm crops, however artificial drainage is required. Organic matter and nitrogen are present but mineral plant nutrients are lacking.

Land Types

Areas of similar soils, topography and drainage conditions can be grouped into units known as land types. The land type is based on physical factors and presents a homogeneous appearance. By means of land types the geographer has a convenient division with which he can correlate agricultural, economic and social data. The study area has been divided into four land types, which are based on the aforementioned criteria. These land types are illustrated on Map 7. A brief description of the land types follows:



LAND TYPES of BRANT

LEGEND

HARRISTON
FOX
SAUGEEN
WATERLOO

N

B.A.D.

MAP 7

Harriston Land Type

The Harriston land type is the most extensive type in the study area. It comprises a large area in the southern and western parts of the Township with smaller patches in the central and eastern sections. There has been little stream dissection or erosion but the area has a moderately hilly topography. This is due primarily to the glacial deposits left after the Wisconsin glaciation. The elevations range from 800' along the Saugeen River to over 1,050' in the drumlin field. The soils in this land type are almost exclusively the heavy, well-drained Harriston loam but there are small patches of imperfectly drained Listowel loam in the depressional areas.

Saugeen Land Type

The Saugeen land type is confined to a large area in the northeastern part of the Township. The topography ranges from smooth moderately sloping to steeply sloping. The steep slopes occur only along the Deer and Pearl Creeks which have dissected this land type. The elevations range from 775' in the west to 875' in the east. A great deal of this slope is due to the bedrock which slopes to the West. The soils of this area are exclusively of locustrine origin. They are heavy textured silty clay and silt loam soils which are, for the most part, well drained.

Fox Land Type

This land type consists of two areas; one in the north west and the other in the south east corner of the Township. The topography of this type is smooth to gently rolling being broken by the steep slopes of some streams. The southeastern portion rises to an elevation of over 950' while the northwestern area has a maximum elevation of 850'.

Plate 1. Undulating Surface of Harriston Land Type.

Plate 2. The level surface of the Saugeen Land Type.

The soils of this land type consist mainly of light textured, well drained Fox sandy loam and light textured poorly drained Granby sandy loam.

Waterloo Land Type

Extending in a narrow "S" shaped band of one to two miles in width down the centre of the Township is the Waterloo Land Type which consists of deformed sandy glacio-fluvial materials. Little stream dissection has occurred in this land type but the topography is steep and irregular due to the glacial materials beneath. Elevations range from 900' to 1,025' in the south and from 750' to 875' in the north. The soils in this land type are light sandy loams of the Waterloo type with little inclusions of other soil types, predominately till soils. Drainage is good but not excessive.

Plate 3. Fox Land Type. Note Moraine in background.

Plate 4. Steep & Irregular topography of Waterloo Land Type.

CHAPTER 111

THE HISTORICAL DEVELOPEMENT OF BRANT TOWNSHIP

Indian Period

The original inhabitants of the study area were the Ottawa Indians. These indians carried on the first agriculture in Brant Township. It was a primitive type of cultivation based on Indian corn as the staple crop with beans, squash and sunflower seed as supplementary crops.

These original inhabitants were dispossessed by the Iroquois who proceeded to occupy all of the lands in the peninsula between Lake Huron and Lake Ontario. After a series of fierce wars the Objibway Indians succeeded in driving the Iroquois south of Lake Ontario and retained possession of the territories obtained by their victories until surrendered by treaty to the Crown.

The first white men to visit the area were French for traders, explorers and missionaries. They practised no agriculture and therefore had no permanent settlements in the area.

The treaty by which the Indian title was surrendered was concluded by Sir Francis Bond Head at Manitowaning, on August 9, 1836. In return for the surrender of their lands to the government, £ 1250 is divided annually among the members of the tribe.

The Indians retained what is today Bruce Peninsula until the lands ultimately came into the market. Today the only lands retained

by the Indians are those reserves situated at the mouth of the Saugeen River, at Chief's Point on Lake Huron, and at Cape Croker on Georgian Bay.

The tract of land ceded to the Crown by the treaty at Manitowaning became known as the "Queen's Bush", a title given, no doubt, to distinguish it from the lands belonging to the Canada Company, the German Company, and others which had obtained large tracts of land from the Crown.

1845 - 1851

Canada experienced a large wave of immigration between the years 1845 and 1852. The demands for agricultural land of the rpaidly increasing population was responded to be the Executive and plans were made for the opening up and settlement of the "Queen's Bush". A survey was conducted from Owen Sound to Penetangore (now Kincardine) and, in 1848 eastward from Penetangore to Durham. In 1849 the free-grants in Brant Township, consisting of the first, second and third concessions north and south of the Durham Road, were surveyed into fifty acre lots and opened for settlement. To-day, to prevent confusion, three concessions are referred to as concessions one, two and three North of Durham Road and lots one, two and three South of Durham Road.

In 1851 the Elora Road was surveyed, one and one quarter miles from the western boundary of the Township, at right angles to the Durham Road. To the west of this road concessions A and B were laid out and subdivided into fifty acre lots. The remaining concessions of the Township were surveyed in 1851 and subdivided into one hundred acre lots.

The first permanent settlers to take up land in the Township did so in 1849, on the first free grant land opened for settlement. These grants were settled completely before the remaining land in the Township which consisted of the "school lands", was offered for sale in 1851.

In 1849 and 1850 there were no roads, except the Durham Road; no saw or grist mills; and no post office closer then Durham. Joseph Walker, who arrived in the Township in the spring of 1850, took up land on the present site of Walkerton. He erected a tavern for the settlement and commenced to erect a saw mill. He chose this site because of the ease with which the river could be forded at this point due to the presence of islands in the river.

By early 1851, after all the "free grants" had been settled, settlers coming into the county seeking land were largely influenced in their decision as to where to settle by the consideration of accessibility. But as stated previously there were no roads except the Durham Road, therefore settlement lagged. By the end of 1851, however, the Durham and Southampton Road, which commenced between lots fifteen and sixteen of the Durham Road, and the Elora Road, north along concession A, were opened. The opening of these roads enabled settlers to take up lands back of the "free grants" and aided the settlement of Brant.

The settlers of the pioneer period occupied themselves with clearing and seeding this new land. At first Indian corn was grown as the chief crop. But as clearing progressed the farmers began producing everything for their own needs. Wheat, oats, hay, potatoes

and turnips were the main crops. Since there were no grist mills in the area closer than Durham, the settlers were forced to employ primitive methods for making flour. The selling of timber from this land gave the farmers a small income in their first crucial years of settlement. The amount of timber available was so great however that the price of lumber was low and very little income was derived from this cource. Potash, made from the ashes of burned trees, also provided a small income. On the whole feed for livestock and food for humans was produced in the summer months and lumbering was carried on in the winter months.

The farmer in this period had a minimum of livestock. These included an average of one cow per farm, some sheep, some poultry and usually an ox. In this period oxen were indispensable as draught animals because horses were practically unknown in the area.

1852 - 1881

Settlement of Brant was slow until 1853 when the influx of settlers into the concessions north of Durham Road commenced in earnest. But the founding of a saw and grist mill at Walkerton by Joseph Walker in 1852 and 1853 respectively, gave added impetus to the settlement of Brant. In the early part of 1854, because of slow settlement, Brant and Carrick Townships were formed into one municipality for easier administration; this union came to an end in 1855 with the rapid influx of settlers. By late 1874 Brant was completely settled and on contrast to a few years earlier, the roads were completely laid out.

The population of Brant increased steadily during this period, from 621 at the beginning to 5,423 at the end. The bulk of the settlers were from the British Isles, but there was a large group of German

immigrants also, with a minority group of French.

By 1853, as the land became increasingly cleared, the farmer revised his agricultural practices. The soils and climate of Brant provided good conditions for the production of wheat and it soon became the dominant crop of the Township. At first spring wheat was the prominent type grown but by 1871 its acreage had become insignificant as compared with that of fall wheat. Wheat was also the most important cash crop . In 1852 the farmers of Brant marketed only 130 bushels of wheat. By 1871 this had increased to 79,274 bushels and the predominant type had changed from spring to fall wheat. By 1881, Brant had reached its peak wheat production, 184,383 bushels.

At this time also there were large acreage of oats, hay, peas, turnips and potatoes. The bulk of the production was intended for local use but some did enter into commerce. Of the crops sold, peas and turnips were the most important. Next to the wheat in this period, the oat crop occupied the largest acreage and produced, in 1881, a total of 164,700 bushels. Since this crop was considered essential for the feeding of horses it steadily increased in importance. Orchards and gardens were never very important up to 1881 but did expand until in 1881, 918 acres were in fruit trees and gardens.

All farm animals increased greatly in numbers in this period except oxen. Oxen which had been the most useful and numerous animals at the beginning of this period, declined in favour of the horse. Horses, of which there were only five in 1852, increased until in 1881 they numbered well over 2,000, an average of over four per farm. Probably the greatest change occured in the numbers of cattle. In 1852 there were a total of 216 cattle in the Township but by the end of this period their numbers had increased to 8,000 of

which 5,000 were beef cattle, and the remainder dairy cattle. Cash from sale of beef and dairy products had at this time become an integral part of the farmer's income.

Pigs and sheep also became important farm animals. The pigs were used primarily for meat while the sheep were kept for their wool, a great deal of which was woven into cloth in the homes of the settlers. It was later sent to Walkerton with theerection of the woollen mill there in 1864.

By 1881 over 64% of the land had been cleared and changes appeared in the agricultural economy. General farming predominated with the chief crops being fall wheat, oats, and hay. Wheat, which was the basic crop of the farmer, had reached its highest production. Wheat, oats, peas, potatoes, and turnips constituted the most important cash crops.

Although important as a grain growing area, Brant was becoming increasingly important for livestock raising. On the whole the quality of cattle was poor and few thoroughbreds were to be seen. The building of the railway along the western boundary in 1871 and along the eastern boundary in 1881 gave an impetus to the raising of both dairy and beef cattle. This industry has been expanding ever since.

Walkerton, IN 1852 was a small community containing a saw mill, a grist mill, a mercantile store and a post office all of which were located along Durham Road. These were the first buildings and for a time the only buildings in Walkerton. The community grew slowly at

first due to its isolation caused by the limited number of roads connecting it to the more populous areas to the south and east. To get to Walkerton one had to travel via the Garafraxa Road to Durham and then turn west onto the plank laid Durham Road. This made travel very tedious and tiresome.

In 1857 surveys were conducted to turn the farm lots into town lots. The street plan of the town had a grid pattern extending to the north and south of Durham Road. The county road, now Yonge Street, which runs north and south, was opened up in 1857 and intersected the original grid pattern at an acute angle. This intersection was due to a bend in the Durham Road. A change in direction was necessary so that Durham Road would cross the Saugeen River at the bridge which was constructed in 1855. To the west of Yonge Street a new grid pattern was surveyed. This is illustrated in Map 13.

The number of business establishments at this time was very diversified but a variety was required to serve the needs of the rural population of Brant. They included: a post office, five grocery stores, two mills, four taverns, three shoemakers, two blacksmiths, two tailors, one tannery, two cabinet makers, and several carpenters and joiners. In 1861 the first newspaper was established in Walkerton, The Bruce Herald.

A foundry and machine shop was opened in 1864. This, along with a number of new industries, a sash, door and blind factory, an agricultural implements works, a pump factory, a large flax mill and a woollen mill increased the population of Walkerton to 995 in 1871.

The changing nature of industry can be seen even at this early period. The business enterprises were evolving from essentially service types to those which used the products of the Township and the surplus population of the town. The sash, door and blind factory used the lumber of the area, the flax mill processed the flax grown in the area, while the woollen mill used the wool of the sheep. The other industries of the town in 1871 used the excess labour of the town and its immediate area.

The progressive growth of Walkerton can be illustrated further by the establishment of two more weekly newspapers: The Walkerton Telescope in 1869 and Die Glocke, a German language newspaper, in 1875. The rapid expansion of Walkerton, had, however, to await the arrival of the railway. The construction of the Wellington, Grey and Bruce Railway through Walkerton in 1871 provided the impetus for the rapid growth of the community. In the decade which followed the population increased by 160% until in 1881 it stood at 2,604.

With the coming of the railway, diversified industry settled in Walkerton. These included a furniture factory and a bobbin factory, both of which processed the lumber of the area, and a hosiery company and a biscuit and confectionary factory which employed the surplus female population. The railway provided the products of these industries with faster and cheaper transportation to the densely populated markets. They could also compete with the products of these areas because of the cheap labour and cheap raw materials both of which were obtained from the surrounding area.

The railroad also increased Walkerton's rank as a local market for the Township. Testimony of this is an exerpt from the Bruce Herald

of January 26, 1872. "Hitherto, Walkerton had been situated that, unless for home consumption, it offered little inducement as a market. The produce of this section went from it in all directions - to Southampton, Kincardine and Guelph. The railroad changed this and gave the farmers of Brant a market at their doors."[1] Walkerton became one of the best grain markets in Bruce. With the growing importance of Walkerton as a market, a second bank was established in Walkerton in 1877.

The railroad also modified the street plan further. When the railroad was built to Walkerton the station was placed one half mile from the town. This was due to the higher priced land in the town itself and to the danger of flooding along the terraces of the Saugeen River. When the station was placed, McGivern and Kidout Streets were surveyed to it. A shoe-string settlement soon followed along McGivern Street to the railway station. At this time the street plan in Walkerton attained its present form, a modification of a grid pattern.

At this time it must be pointed out that Walkerton was never incorporated as a village. The incongruity of the county town not being a separate municipality was overcome by special Act of Parliament in 1871 which enabled Walkerton, without ever having been a village, to become a town. In 1871 when Walkerton left the Township it had a population of 995.

With the rapid settlement of the Township after 1853 a number of small communities grew up very quickly but some of these declined and dissappeared equally as rapidly all within this period.

1. N. Robertson - History of the County of Bruce

Dunkeld and Ellengowan were the first of these hamlets to be established. They were founded in the middle 1850's as centres of trade for the immediate vicinity. They were located along the Elora Road, one of the main arteries of communication within the county as crossroads centres, At their greatest developement neither one of them contained more than a hotel and a general store. Vesta was also established about this time at the intersection of two county roads. It too was primarily a service centre for the immediate area but also contained a post office.

Malcolm, Maple Hill and Cargill began their existence in 1857. At Malcolm a log church was built for the farmers of the area in 1857. Settlement followed and this hamlet became a service and cultural centre for the immediate vicinity. Maple Hill, commenced its existence when a saw and grist mill were erected at its site on the Saugeen River and gave promise of developing into a village. Its proximity to both Walkerton and Hanover precluded this developement. Cargill is on the boundary of Brant and Greenock Townships. It was established when a dam was built, due to a constriction of the Saugeen River at this point, and a grist mill was erected. It was not until the 1860's that a village commenced to gather about the mill.

In 1864 a post office was established at the crossroads where Elmwood stands today. The postmaster is given credit for founding this village which is located halfway between Hanover to the south and Chesley to the north. By 1875 there were two general stores and two saw mills located in the settlement. There was no water power available at this site for running the mills. Their establishment at

this site was due to the postmaster. He owned one mill himself and induced the other mill owner to build at this point.

The railroad era had profound effects on the small settlements of Brant, With the building of the Wellington Grey and Bruce railway down the western side of the Township three important results followed: the Elora Road ceased to be a main means of transportation, Cargill expanded and a new town sprang up.

With the coming of the railroad Dunkeld and Ellengowan dissappeared. Travellers no longer used the Elora Road extensively and the produce of the farmers could be shipped faster by rail to Walkerton, which expanded as a market town. Goods could also be brought back from Walkerton via the railway. This reduced the usefulness of Dunkeld and Ellengowan.

Cargill, with the coming of the railway, experienced a limited expansion. To the water-power sawmill a large steam saw mill, a steam planing mill and a grist mill were added in 1872. The low level of the Saugeen River in the summer months necessitated the erection of the steam mills. These industries used timber from the Greenock Swamp and are located in Greenock Township. While the industry was located outside of the Township, most of the residential buildings spread into Brant forming a shoe-string settlement to the railway station located one-half mile from the village.

Eden Grove or "Pinkerton Station" commenced its existence with the Wellington, Grey and Bruce railway. A saw and shingle mill was erected in 1871 and a post office was established in 1875. Two general stores also sprang up. Eden Grove became the point on the railway used

for shipment by the villages of Pinkerton and Glammis, both situated outside of the Township.

In 1881 the Canadian Pacific Railway constructed a line down the eastern boundary of Brant through Elmwood to Hanover. This assured prosperity to Elmwood and it became a shipping centre for a small section of the surrounding area.

The remaining communities, Malcolm, Vesta and Maple Hill were not at first affected by the railway and continued as small service centres for their immediate areas.

1882 - 1911

The years after 1881 saw a great change in the population hamlets and agriculture of Brant Township. Brant reached its maximum population in 1881. The census reports, however, record the year 1871 as having the greatest population. In this year it stood at 5,994 people. But Walkerton with a population of 995 was still included in the Township population. In 1871 Walkerton was incorporated as a town, and took 995 people from Brant. At this time the number of people in the Township had increased to 5,423, exclusive of Walkerton's population. Therefore 1881 is the year of greatest population.

Immediately after 1881 the population started to decline and by 1911 it had decreased to 3,532. Although the population was declining the number of farms increased until 1911. This increase in the numbers of farms may have been due to the cultivation of new land which had been considered sub-marginal for agriculture. The racial

composition of the population changed noticeably during this period. German settlers, largely from Mecklenberg in the north of Germany, increased while the Irish, English and Scottish settlers decreased. The small French group almost dissappeared by 1911.

Wheat production reached its peak in 1881 but by 1891 it had begun to decline due primarily to the opening of Western Canada and the superiority of Western wheat. It still remains however as an important cash crop. Oats and hay have come to be the leading crops, while pasture acreages have also increased with the rising importance of the livestock industry. Potatoes and turnips reached their maximum acreage and production in 1891 but had also declined rapidly by 1911. The acreage of orchards reached its maximum in 1891. In this period the growth of pea production was phenomenal. This crop reached its peak in 1891 when over 27,000 bushels were produced. Peas were a favourite with the farmers because of their dependability as a crop. Frequently grown as part of a rotation to prepare the land for wheat, the pea crop was sometimes harvested threshed and sold to the northern lumber camps. With the advent of the pea weevil the crop declined rapidly. Barley also became an important crop in this period as a supplementary crop for livestock feed. The following table compiled from census reports shows the changes in crop acreages:

TABLE #3

YEAR	WHEAT	OATS	MIXED GRAIN	HAY	BARLEY	PEAS	POTATOES	TURNIPS
1852	65	54	---	---	---	---	38	29
1861	3894	1030	---	---	169	547	383	752
1871	7963	---	---	5954	---	3300	559	---
1881	9663	---	---	7374	---	6000	519	---
1891	6056	8231	---	10232	1057	7000	579	1153
1901	---	---	---	---	---	---	---	---
1911	4575	11045	2	11548	2223	2200	419	479
1921	3528	13976	2613	12479	1375	360	491	471
1931	3191	10418	5491	13473	1261	217	259	217
1941	3855	6666	8544	12364	1277	---	274	---
1951	2805	5001	10057	11723	1866	---	107	---

Both sheep and horses reached their peak numbers in 1891. But they began to decline before 1911. Horses declined due to the increasing mechanization of the farms while competition from foreign countries (Australia and New Zealand) which produced a superior type of wool for a lower price, caused decline in the raising of sheep. The numbers of beef cattle, dairy cattle, and swine rose remarkably in this period. The following table compiled from census reports illustrates the changes in animal raising:

TABLE #4

YEAR	BEEF CATTLE [1]	DAIRY COWS	HORSES	PIGS	SHEEP
1852	112	104	5	46	---
1861	715	2043	354	2234	1418
1871	---	---	---	---	---
1881	---	---	---	---	---
1891	6027	3453	2539	3847	5417
1901	---	---	---	---	---
1911	---	---	---	---	---
1921	---	---	---	---	---
1931	6937	3514	2213	5584	3074
1941	7532	4158	2118	8554	2420
1951	7808	4039	1080	8870	1141

1. Includes Oxen

A changing emphasis in land use also occurred. The acreage under crops increased to a maximum in 1891 and gradually decreased while pasture land continued to increase. The total acreage of land held increased to its maximum by 1911, in this year total acres held stood at 70,107.

The agricultural developement of the first quarter of the twentieth century was characterized by an increasing trend towards a specialization in the farm economy. The partial self-sufficiency of the late nineteenth century dissappeared as crops which has been used for domestic purposes declined. The production of wheat, potatoes, turnips and peas declined while oat and hay production increased, Brant farmers placed an increasing emphasis on the raising of beef and dairy cattle and swine in their general farm economy.

Walkerton continued to grow commercially and industrially until the turn of the century. By 1895 two banks were established in the town. It also boasted its own fire station, sewage and waterworks department and a number of handsome public buildings. These included a town hall, three large schools, the Bruce County Buildings, a public library and the House of Refuge (an old people's home). A second railway the Canadian Pacific Railway constructed a branch line into Walkerton in 1907. This increased its value as a market town.

Great changes occured in industry during this period. The bobbin factory which had located in Walkerton following the construction of the railway, moved north to Wiarton to be closer

to the source of cheap lumber. However in 1902 it returned because of the cheaper and more readily available labour to be had at Walkerton. Other industries which were established in this period included a felt-boot factory in 1882, a chair factory in 1896, a binder twine plant in 1900, and a flax and oatmeal mill in 1901.

These industries established in Walkerton primarily for the labour supply which was available in the town. Raw materials were not readily available in the area. An evidence of this is the bobbin factory which moved away because of the lack of lumber.

Walkerton's population reached a peak at the turn of the century but then began to decline. This decline was due mainly to the closing of some of the factories. The binder twine factory and the felt-boat factory went bankrupt while the flax and oatmeal mill burned down. It was not rebuilt. The woollen mill also closed down in 1902 due to the competition from cheaper woollen products of foreign countries. Of the three original newspapers only one, which was now called the Walkerton Herald Times, remained in print. Therefore, by the end of this period industry in Walkerton had declined from its peak position at the turn of the century and depopulation had commenced. The population declined from 3061 in 1891 to 2601 in 1911.

The remaining small hamlets of the Township, Malcolm, Vesta and Maple Hill, also declined in this period. The growth of the village on the railway lines on the eastern and western boundaries of the Township precluded the usefulness of these small centres.

They were no longer required as service centres and by 1900 their populations had migrated to the larger urban centres outside the Township.

Cargill expanded to a limited extent in this period and in 1903, three churches were erected. Cargill's population never exceeded 150 up to the year 1911. Eden Grove, after its initial growth, regressed slightly with the closing of the saw and shingle mill in this period, but it remained as the shipping point for the settlements to the north and west which lay around the borders of Brant. Elmwood expanded when the Canadian Pacific Railway built a line through the village. Its population grew until in 1901 it had reached 500. It served as a shipping point for a limited section of the surrounding area, due to the presence of Hanover six miles to the south and Chesley six miles to the north. The influence of these towns has limited the service area of Elmwood to a distance of approximately two miles to the north and south of the village and three miles to the east and west of the settlement. By the end of this period Elmwood had declined due to the growth of the larger towns surrounding it.

1912 - 1954

In this period the rural exodus of Brant continued. The prople of British descent continued to decline while those of German origin increased, until in 1941 they comprised over on half of the population of the Township. The British population tended to migrate to the urban areas of Ontario or to the Western Prairies while the German population remained in the rural areas of Brant. The changing racial composition of the Brant population is illustrated in Table 5.

TABLE #5

YEAR	GERMAN	IRISH	ENGLISH	SCOTTISH	FRENCH
1852	38	135	105	129	---
1861	603	897	699	732	38
1871	1108	2468	1046	1260	46
1881	1263	1908	912	1154	97
1891	---	---	---	---	---
1901	1499	1161	757	804	52
1911	1465	703	734	575	5
1921	1323	577	584	491	49
1931	1305	360	534	379	25
1941	1362	431	428	347	23
1951	---	---	---	---	---

The population of Brant reached it peak in 1881 and since that time there has been a steady decline until in 1954 the number of residents was 2,075. The number of farms, since 1912 has also declined along with the population. These trends can be seen in the following table:

TABLE #6

YEAR	POPULATION	NO. OF FARMS	ACREAGE OF OCCUPIED FARMLAND
1852	621	114	7,000
1861	3125	481	53,828
1871	5994	713	66,932
1881	5423	738	68,383
1891	4929	762	69,168
1901	4349	---	----
1911	3532	764	70,107
1921	3063	653	69,084
1931	2627	---	69,044
1941	2624	555	67,677
1951	2075	500	68,907

The trend of rural depopulation can not be explained by deterioration of the soil because the maximum population was reached before the maximum acreage of farmland was cultivated. The

total acreage of occupied land also continued to grow after 1881; the year of maximum population. The number of farms, continued to increase also, in spite of the decreasing population, until the maximum number was obtained in 1911. The factors which have contributed to the rural depopulation are: mechanization of the farms, the decline of the rural hamlets, and more effecient use of the land.

The introduction of labour saving devices onto the farms has tended to decrease the number of persons required for each farm and also to lessen the dependence of the farmers on the local artisans. Therefore the surplus labour on the farms has left. This surplus labour consists largely of the younger people. They are migrating to the large urban centres and are leaving the older people to tend the farmsteads.

Farm abondonment and farm amalgamation has been in evidence in some sections of the Township. In times of over-eagerness by early settlers farmlands expanded onto the flood plain of the Saugeen River. This land has poor drainage and is open to flooding in the spring months. Many farms situated in this location have been abondoned and the land has been either sold to other farmers for use as pasture or returned to forest.

During this last period the present acreages of crops evolved. Wheat continued to decline. Oats, which in 1912 was a very important crop also showed a great decrease in acreage. The acreage taken out of these two crops was given over to the cultivation of mixed grains. To-day this crop is important because it affords a mixed diet to the

large numbers of cattle. Hay retained a large acreage in this period because of its usefulness as feed for the livestock during the winter months. All other crops: corn, peas, potatoes and turnips declined to very small acreage by 1951. They still however, along with wheat, form cash crops for the farmer. Even though soil and climate are favourable for some of the hardier tree fruits, orchards have all but dissappeared. Neglect and disease have combined to hasten the destruction of the orchards.

The most significant change since 1912 has been the rapid expansion of the livestock industry. Horses and sheep continued to decline but the urban centres of Southern Ontario have created an increasing and profitable market for beef and, to a lesser extent, dairy products. In response to the market Brant farmers have placed an increasing emphasis on the raising of both beef and dairy cattle in their general farm economy. Swine have also become important and their numbers exceed those of beef cattle. This is illustrated in Table 4.

The market for both beef and pork expanded during World War Two when large shipments of these products were sent overseas to Great Britain. After the war this expanded production was maintained due to the increased market in Canada and the fact that some areas had turned to specialization in other products. This specialization of beef and pork in Brant has led to a slight decline in the dairy industry.

The changing emphasis in land use can be seen from an examination of Table 3. It will be noticed that, since 1921, the acreage under crops has gradually decreased. The most significant change in the

land pattern is to be seen in the increase in the pasture acreage. Grazing land has continued to increase up to the present. To-day over 30% of the land in farms is used as pasture. The demand of the growing urban centres for beef and dairy products has led to an increasing specialization in the cattle industry. The changes in land utilization over the last one hundred years are shown in the following table.

TABLE #7

YEAR	ACRES HELD	UNDER CROP	PASTURE	BUSH	ORCHARDS
1852	7,000	204	247	6549	----
1861	53,828	8,609	1,053	44155	11
1871	66,932	27,046	6,840	22482	564
1881	68,383	36,020	7,897	23548	918
1891	69,168	41,318	12,011	14793	1,045
1901	---	---	---	---	----
1911	70,107	37,734	13,849	17482	1,042
1921	69,084	36,792	14,244	17378	670
1931	69,044	36,222	16,105	14841	----
1941	67,677	34,323	18,846	10709	4
1951	68,907	33,259	21,976	12301	----

In this period marked changes occurred in the population and industry of Walkerton. Depopulation, which had commenced at the turn of the century, continued until 1931 when the trend was reversed. The revival was due to the resurgence of industry after the great depression. To-day the population of walkerton is ar an all time high 3,413.

The growth of the population is due to primarily to the many new and diversified industries which located in walkerton and to a revival of the existing industries of the town. The new industries included a metal working factory, a furniture factory, a creamery,

a clothing factory, and a flashlight plant.

The change in industry which had commenced in the years between 1881 and 1911 continued in this period. The industries changed from those which settled in the town primarily to use the raw materials of the area to those which to-day exploit the cheap labour force and receive little or no raw materials from the area. The feed mill and the creamery are the only two industries which use products of the area. The remaining industries import their raw materials from other areas. The growth of industry in Walkerton and the resultant growth in population since 1931 is due also to the progressive attitude of the civic officials of the town, the availability of land within the town limits, low taxes, and the services rendered by the town to industry.

The railway was the major bulwark in the decline of the small hamlets. The populations of Dunkeld, Ellengowan, Vesta, Malcolm and Maple Hill migrated to larger urban centres. Eden Grove, Cargill and Elmwood declined slightly but retained their status of service centres.

CHAPTER IV

AGRICULTURAL LAND USE

Agriculture is the dominant industry of Brant Township. The topography, climate and soils, the markets of the large urban centres to the south and east, along with the initiative and progressive nature of the farmers have all contributed to the prosperous position of the industry. Diversification has, to some extent, aided this prosperity. Mixed farming dominates the agricultural economy of the Township, but emphasis has been placed on certain aspects of this industry.

Despite differentiations in soils, drainage relief, and accessibility there is a uniformity throughout the area. On nearly every farm in the area hay, barley, oats and wheat are produced. In conjunction with these crops some hogs, poultry, beef and dairy cattle are raised. Potatoes and turnips, some of which are used domestically and the remainder commercially, are also important crops. Orchards are uncommon. A few apple trees are usually present on each farm but they are generally neglected. The farm woodlots provide a source of winter fuel but are seldom used as a source of income. This diversification of agriculture in Brant has given the farmers a stable income and has aided him in maintaining the fertility of the soil by the proper rotation

of crops.

To illustrate the diversification of the agricultural economy, the following statistics have been compiled for an average farm in Brant Township. The average farm in Brant is 144 acres in size. Of this, 113 acres are improved while the remaining 31 acres are woodland or wasteland. The cleared land consists of 23 acres in hay crops, 20 in mixed grain, 10 in oats, 6 in wheat, 4 in barley and 40 acres of pasture. Small acreages of corn, potatoes, turnips, garden crops and the farm buildings occupy the remaining area. The average farm also has 16 beef cattle, 8 dairy cattle, 18 hogs, 190 fowl and 2 or 3 horses. Sheep occur in large flocks and therefore are confined to a few farms in the area.

From an examination of the above statistics it can be seen that within the mixed farm economy of Brant, an emphasis is placed on animal husbandry. This takes the form of beef and dairy cattle raising. The number of beef cattle has been increasing every year until in 1955 their numbers exceed 7,800 and the beef industry dominates the economy of the average general farm. The beef cattle are predominately Herefords, Durhams and Poll Angus. These cattle are brought into the area from the Western Provinces and ManitoulinIsland as one and two year olds. The favourable climate and soil conditions yield an ideal environment in which these cattle can be "finished off" in the study area.

Although the increased developement of the beef industry is in

part due to favourable physical conditions, economic factors have provided the principal stimuli for this expansion. The conurbation which has occurred around the industrial centres of Toronto and Hamilton has created a large market for beef products. It is this highly profitable market which has caused the developement of the beef industry in the Township.

There were in 1951, 4,039 milk cows in the Township. Of these cows, 3,451 were being milked at the time. Since that time the number of dairy cows has tended to decrease though dairying is still important in the economy of the average mixed farm. The cows are predominately Holsteins although herds of Jersey cattle are also seen, especially around the towns.

The dairy industry has followed closely that of beef since the physical conditions of the environment are favourable to both industries. But economic conditions; the distance from markets and the growth of specialized dairy farming in the area surrounding the large urban centres has led to a slight decline in this industry in Brant.

The great bulk of the milk production is sold to the Toronto-Hamilton market. Some of the products of the dairy industry are used locally however. The creamery at Walkerton collects milk from the farmers for the manufacture of butter. The separating of cream from the whole milk has declined in recent years since most farmers have found it easier and more profitable to sell whole milk to the truckers from Walkerton.

The emphasis on beef raising and dairying has given the farmer a valuable source of revenue. Both of these activities require a high degree of capitalization in livestock, machinery and buildings. This has tended to prevent the developement of tenancy. Over 80% of the farms are owner operated.

The land use reflects to a considerable degree the importance of livestock industry. The largest single crop in the area is hay, the principal varieties of which are alfalfa, clover and timothy. Alfalfa is the main hay crop in the area due to the abundant yields which it produces on all soil types. The hay crops constitute over 35% of all field crops of Brant. It is rarely grown as a cash crop but is used almost exclusively as winter feed for the farm animals. The hay fields provide excellent pasture for several months after the hay is cut in the summer.

The increase in the acreage of pasture in the Township is a further evidence of the importance of beef raising and dairying. Almost 35% of the improved land in Brant is now in pasture.

Although hay andpasture acreages have been increasing steadily, cereal crops still occupy the most extensive areas. Over 19,500 acres or nearly 60% of the field crop acreage is usdd for the cultivation of grain crops. With the increasing emphasis being placed on the raising of livestock, mixed grains have replaced both oats and wheat as the dominant cereal crops. The mixed grain acreage is greater than the combined area of all other

Plate 5. Beef Cattle on Till Plain.

Plate 6. Holstein Dairy Herd on Till Plain.

cereal crops and covers 34% of the acreage devoted to field crops in Brant. The rapid rise of this crop has been phenominal. Because of its high fodder value and fattening qualities for beef cattle it has replaced most other cereal crops and ranks next to hay in acreage.

The oat acreage has declined rapidly but still comprises 15% of the acreage devoted to field crops in Brant. Oats are grown mainly for use on the farms as feed for poultry, dairy and beef cattle. Wheat comprises only 8% of the field crops acreage in the Township. The wheat crop is almost exclusively of the fall wheat variety. Barley has declined slightly from its greatest acreage and to-day comprises 6% of the acreage of all field crops. Both wheat and barley are mainly grown to provide a cash crop for the farmers and in this respect they formaan integral part of the farm economy. Rye, never extensively grown forms an insignificient part of the farm cropping system.

Although hay and cereal crops take up 96% of the acreage of all field crops in Brant, small acreages of flax, potatoes, turnips and corn are also grown. Flax has always been a crop in the area but the acreage of this crop has never been extensive and its importance has steadily decreased through the years. Potatoes are grown mostly for local consumption but small amounts do enter the market. Turnips are an important cash and rotation crop to some of the farmers. They have always been grown in the area but have declined in favour of cereal crops. Large quantities are still

sold however to the waxing plant at Mildmay for processing. The cultivation of corn has never been important in the Township. Climatic restrictions have precluded the extensive growing of this crop.

The growing mechanization of the farms of Brant has caused a decline in the number of horses found within the Township. Although most farms keep two or more horses for general utility purposes the tractor has for the most part supplanted them for most farming operations.

The raising of hogs has become a very important activity on most of the farms in the area. Hogs outnumber beef cattle but the revenue obtained from them is less than that derived from the sale of beef cattle. They are however an important part of the mixed farm economy. For the most part they require little attention and are fed whey, buttermilk and grain. This is an outlet for the end products of butter manufacture and at the same time provides an income for the farmers. Fowl are to be found on every farm and can be regarded as part of the general farm economy.

There is no single system of crop rotation practised in Brant although mixed grain, hay, potatoes, oats and barley appear most commonly in the cropping system. Fall wheat and barley generally follow sod or summer fallow and mixed grain. The practise of summer fallowing is still common in Brant. It is used to combat the low fertility levels in some fields.

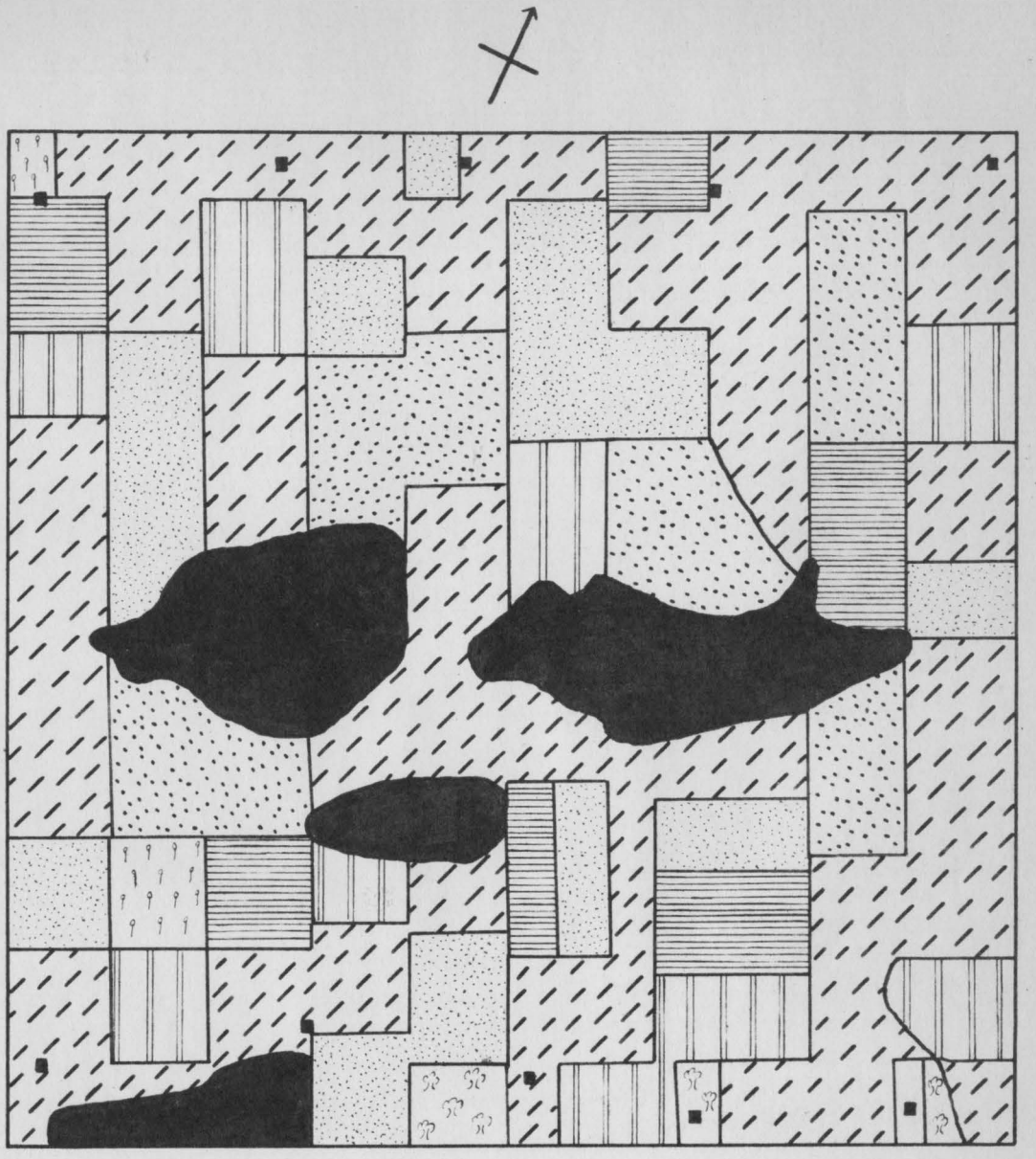
The general agricultural economy of Brant is in a highly

developed condition. This is emphasized by the high proportion (50%) of improved land to the total farm land. The prosperity of the area is further emphasized when we compare the average value of the land of an average farm in Brant to that in the County as a whole and also the average value of buildings of the Township to the County average. The average value of a farm in Brant is $3,476 - over $670 higher than the County average. The average value of buildings per farm in Brant is $2,360 - $50 over the county average. Brant has the highest total rural assessment in Bruce County. From all of this it can be seen why Brant is called the "Banner Township of Bruce County".

In Chapter two land types were laid out for the Township. For a closer examination of the land use in Brant a study of the land use on the land types is required. To accompany this, the land use on four blocks, one and one quarter miles square each represetning a different land type have been examined and mapped. The differences in the agriculture of these land types bear a direct relationship to the variations in soil and topography of the area. In the following section an attempt will be undertaken to show the relationships which exist between the foregoing factors and the agriculture of the land types. The percentages and figures used in the following discussions have been computed from the representative land use blocks which are shown in Maps 9 to 12.

Harriston Land Type

This land type comprises the best agricultural land in Brant



SCALE
1 IN. = 1200 FT.

LAND USE OF HARRISTON LAND TYPE

CONCESSIONS VII & VIII LOTS 21-25

LEGEND

HAY		CORN	
OATS		ORCHARD	
WHEAT		WOODLOT	
MIXED GRAIN		PASTURE	

FARM BUILDINGS ■

MAP 9

Township. The soils are almost entirely of the Harriston loam but there are small patches of poorly drained soils in the depressional and inter-drumlin areas. For the most part however the loamy texture of the soil and the rolling topography lessens the drainage problems which exist in other parts of the study area.

Despite the good yields obtained, only 26% of the block examined is devoted to cereal grain. This is due primarily to the drumlinized aspects of the area, the poor drainage conditions in the depressional and inter-drumlin areas and the demands made on the soil by cereal crops. The small acreages devoted to grain crops has resulted in increases in other types of land use. The area is given over, for the most part, to pasture and hay crops. There are, in this land type 45% pasture and 16% hay crops. With the high percentage of pasture and hay crops it can be seen that livestock raising is very important on this land type. This can be further emphasized by the fact that 70% to 80% of the farmers income is derived from livestock products.

The highly developed and intensely cultivated nature of this land type can be seen in the fact that 9.5% of the area is woodlot. The woodlots are commonly found on the crests of drumlins and slopes.

The cultivation of cereal crops on the slopes left the soil open to erosion but this hazard has been adequately controlled by leaving the slopes in pasture or by the cultivation of hay crops.

Plate 7. Farmstead on Harriston Land Type.

Plate 8. Abondoned Farm on Waterloo Land Type.

Plate 9. Uncommon stone farm house on Fox Land Type.

Plate 10. Common white brick farm house.

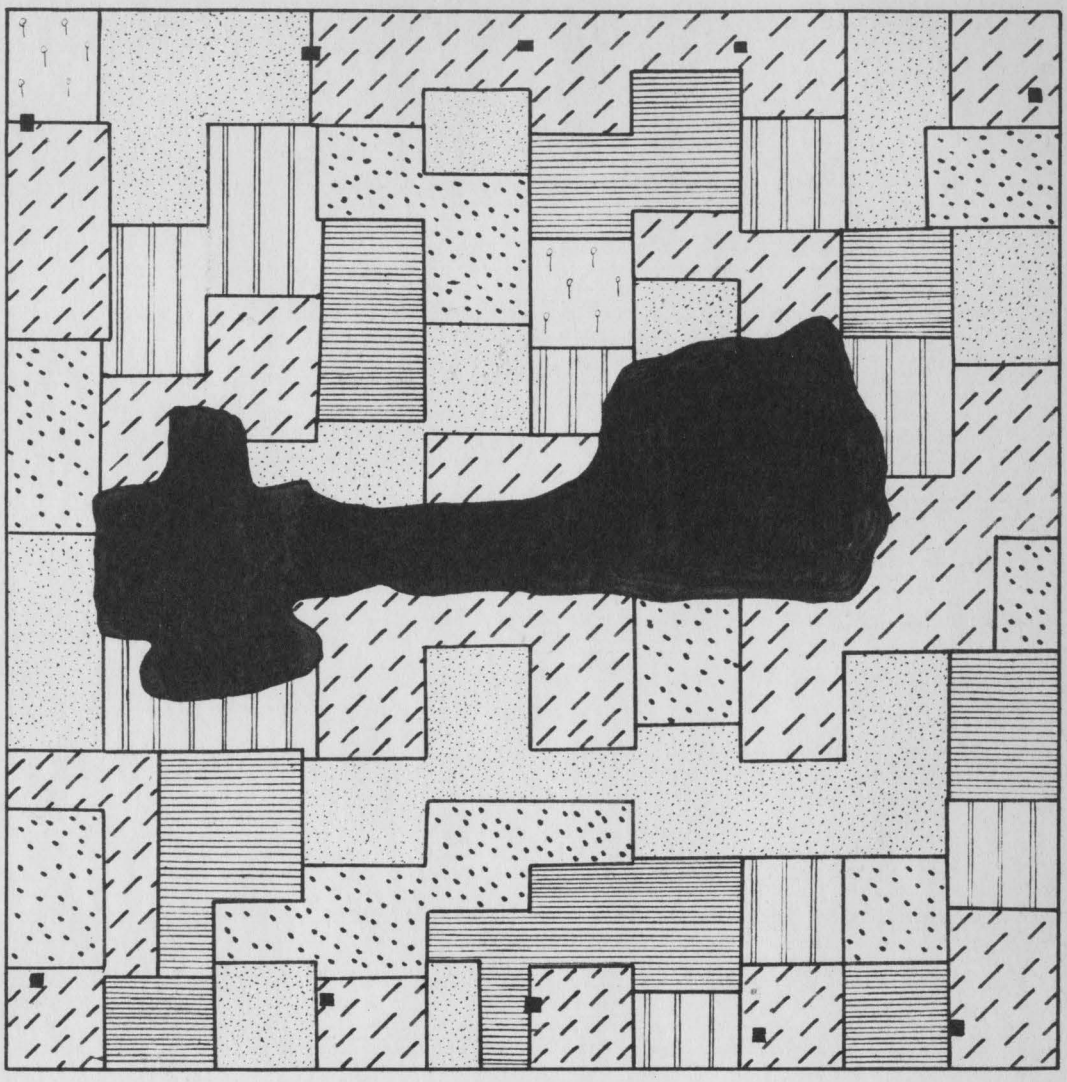
To-day erosion is not serious on this land type due to the relatively simple control measures practised by the farmers. On the whole their land type produces good yields of most farm crops with the use of satisfactory rotations and good soil management.

Saugeen Land Type

The Saugeen land type differs from the Harriston in its physical characteristics. The topography is flat to undulating due to its lacustrine origin. External drainage is good for the most part but the internal drainage is slow especially along the stream courses due to the compact nature of the soil particles. As a result the soils are usually too wet in the spring, so that cultivation may be retarded for as long as two weeks. On the other hand, the heat of the summer months tends to dry out the surface soil. In either case tillage of the soils is difficult because if too wet or too dry when tilled the soil structure breaks down.

Gully erosion is serious on this land type. The stream courses have cut deep valleys into the soft clay materials. Therefore cover crops and long rotation crops are common on the steep slopes to prevent further loss of the soil.

Despite the steep slopes in some areas of this land type, over 60% of the block mapped is in cropland. Over 40% of the area is given over to cereal crops. But the quality and yields per acre are not as high as on the Harriston land type. The late, spring seeding which does not permit full developement of the oats and mixed grain before the hot summer months reduces the



SCALE
1 INS. = 1200 FT.

LAND USE OF SAUGEEN LAND TYPE

CONCESSIONS XIII & XIV LOTS 26 - 30

LEGEND

HAY		CORN	
OATS		WOODLOT	
WHEAT		PASTURE	
MIXED GRAIN			
FARM BUILDINGS			

MAP 10

yields of oats and mixed grain.

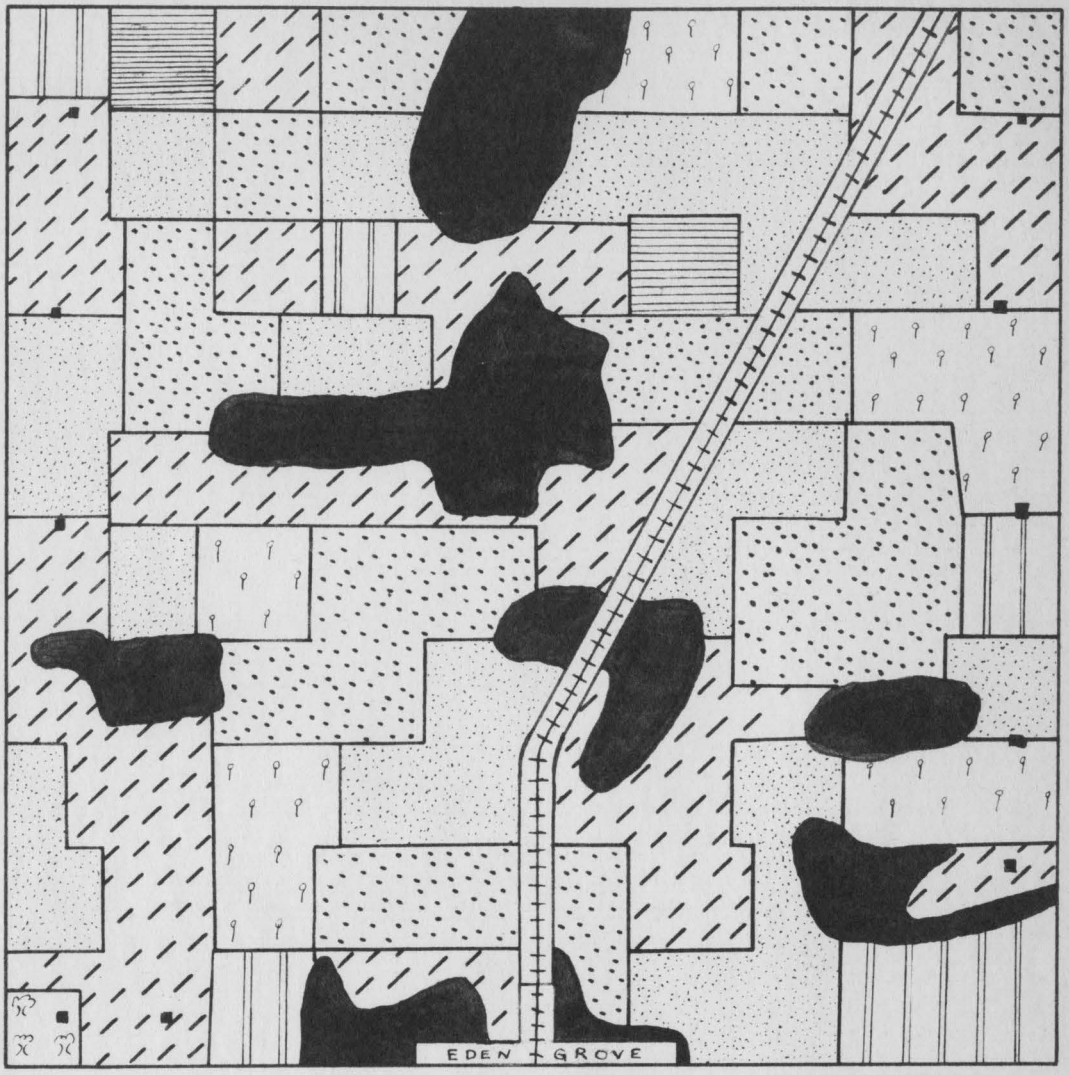
A low percentage of woodland is also common on this land type just as on the Harriston. This is due to the inherent fertility of the soils for crops and to the fact that cultivation is not restricted to any large extent by poor drainage.

The emphasis on livestock raising is exemplified by the large percentage of pasture and hay crops on this land type. They occupy over 47% of the total area. Many of the stuperslopes along the stream courses are now used as permanent pasture to prevent further loss of the top soil. Beef raising is the dominant source of income for the farmers but hog productions are becoming increasingly important on this land type.

Fox Land Type

The soils of this area are almost entirely of the Fox Sandy Loam. The smooth gently sloping topography and the loamy texture of the soil have given this area, on the whole, good drainage. Due to the porous nature of the soil and the ensuing rapid percolation of moisture cultivation can be commenced 7 - 10 days earlier in the spring than in the previous land types.

With only 10% of the area in woodlot, the Fox is as highly developed and intensively cultivated as the two aforementioned land types. But the physical conditions of the soil, low fertility susceptibility to erosion and droughtiness in the summer months limits crops yield. Nevertheless over 40% of the area is devoted to the cultivation of cereal crops. The yields per acre of wheat, oats, mixed grains and barley are however approximately one half those received on the Harriston land type.



SCALE
1 IN.= 1200 F T.

LAND USE OF FOX LAND TYPE

CONCESSIONS A & B LOTS 29-33

LEGEND

HAY		TURNIPS	
WHEAT		WOODLOT	
BARLEY		PASTURE	
MIXED GRAIN		RAILWAY	

FARM BUILDINGS ■

BAD

MAP II

Because of susceptibility to erosion, especially wind erosion, cover crops are required, therefore over 50% of the area is in pasture and hay crops. Alfalfa is the most common of the grasses grown. The extensive root structure of the alfalfa permits it to draw moisture from greater depths than other grasses and in this way makes it less susceptible to the droughty conditions of the summer months.

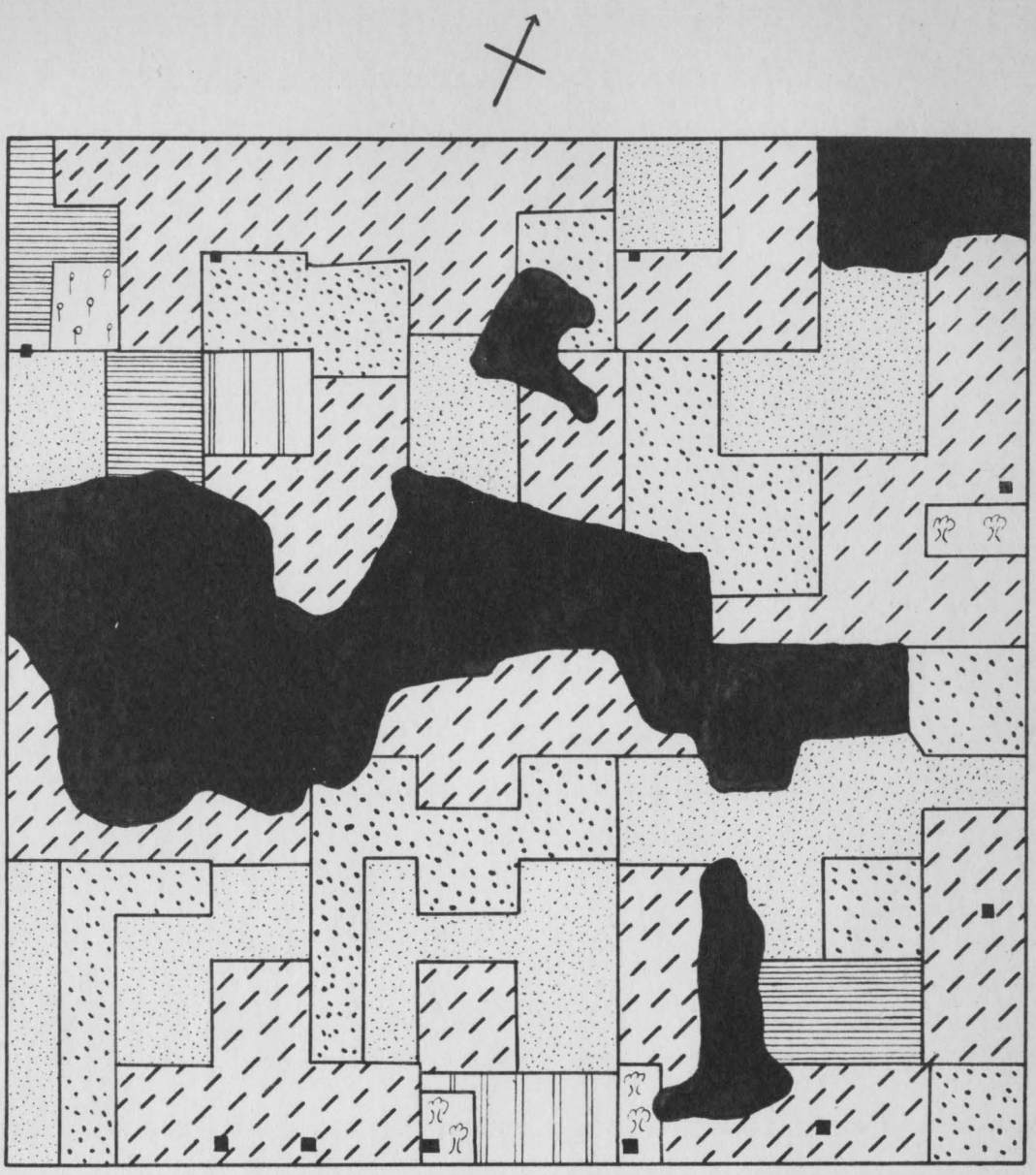
The early warming properties of the soils of this land type makes it especially suitable for early crops and specialized crops such as tree fruits, vegetables and small fruits. But in Brant the climate is a limiting factor and precludes the growth of these crops because of the danger of frost. Therefore general farming, with an emphasis on livestock, is predominant on this land type.

Waterloo Land Type

This land type is the poorest area in Brant Township. It differs from the previous land types in both its physical characteristics and its agricultural potentialities. The steeply sloping topography, the light texture and low fertility of the soil have a depressing effect on the farms of this area.

The distinguishing feature of this area is the irregular steep slopes. This has led to severe sheet erosion. The light texture of the soil on the slopes has also left it open to wind erosion. Therefore this area suffers from severe erosion in two forms.

The extremely low fertility of the area has added a further



SCALE
1 IN. = 1200 FT.

LAND USE OF WATERLOO LAND TYPE

CONCESSIONS VII & VIII LOTS 21 – 25

LEGEND

HAY		TURNIPS	
OATS		ORCHARD	
WHEAT		WOODLOT	
MIXED GRAIN		PASTURE	
FARM BUILDINGS			

B.H.L.

MAP 12

agricultural handicap. Yields of cereal crops which occupy only 19% of the area, are the lowest per acre in the Township. These crops are confined to the more gentle slopes of the area. The farmers of this land type have been turning to pasture and hay crops in order to keep the soil of the slopes under cover as long as possible. To-day nearly 60% of the area is in pasture and hay crops. With this type of farming, livestock raising has become extremely important. Some dairying is carried on but it is overshadowed by the raising of beef cattle.

The relatively high proportion of woodlot (20%) in this land type is a further indication of the need for permanent cover. Small woodlots which also act as wind breaks are common throughout this land type.

CHAPTER V

NON - AGRICULTURAL LAND USE

THE TOWN OF WALKERTON

Site

The town of Walkerton is situated on the intersection of Highway #9 and Durham Road, along the banks of the Saugeen River. Building for the most part is confined to the west of the river on the flat terraces of the Saugeen River, although there are some residences on the steeper east shore. This site was chosen because of the ease with which the river could be forded at this point due to the presence of islands in the river. Therefore Walkerton can be considered primarily a bridge town.

In the early days of settlement the site was considered favourable; to-day it is extremely unfavourable. The town is situated on the flood palin of the Saugeen River and floods are common particularly on the lower west bank of the river; the bank where most building has taken place. Floods do not occur every year but when they do occur great damage is caused to property. The commercial district suffers most by these inundations. The new residences, to free themselves from this danger, have concentrated on the upper slopes to the southwest of the river.

To alleviate the danger from the floods, a large dam has been constructed east of Walkerton. With this dam it is hoped that the flow of water coming down the Saugeen River will be controlled, thereby reducing the volume of water in the spring months, the time when flooding occurs. One of the small gravel islands has been dredged from the river in hopes of increasing the volume of water that can be carried by the river bed.

Commercial

Durham Road forms forms the commercial retail section of the community but many small grocery stores are scattered throughout the town. Walkerton has a wide range of shops dealing in both staple household goods and luxury articles. The sixty-one stores, many of which are modern, give evidence to the large volume 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. A breakdown of the stores is found in Table 8.

TABLE #8

Food & Beverage		18
Grocery & Combination	9	
Hotel	2	
Dairy	1	
Bakery	1	
Other	5	
General Merchandise		4
Automotive Group		12
Motor Vehicle Dealer	2	
Gas Station	4	
Garages	6	
Apparel & Accessories		10
Building Material & Hardware		4
Furniture, Appliances, Radio & Home Furnishings		4
Drug Store		3
Other		6

Walkerton also has two wholesale dealers. These include a Westons Biscuit warehouse and a Cities Service Company warehouse. They are both located in the near vicinity of the Canadian National Railway station on the outskirts of the town. They serve Walkerton and the small service centres of the surrounding area.

Services

Administration

Walkerton is the county town of Bruce County. As a result the county buildings are located here. These consist of a court house, a jail, a registrars office, and the county health unit. An unemployment insurance office for Walkerton and district has recently been built here. The Representative of the Ontario Department of Agriculture, the Provincial Police and public school inspectors also have offices in the town. The town hall is located in the centre of town on Jackson Street. In all, sixty-six people are employed by the aforementioned offices.

Hydro Electric Power and Telephone

Walkerton is the centre for the distribution of hydro to an area around the town with a radius of 30-40 miles. The Bell Telephone office is located next door to the Town Hall on Jackson Street. It serves an area of approximately one hundred square miles.

Health Professional and Recreation

The Bruce County General Hospital is located on McGivern Street in the south section of the town. This site was chosen because of the excellent drainage conditions which prevail due to the rolling topography and sandy soils. The hospital was built for the residences

of the county but it has no restricted area of service.

The House of Refuge, a home for old people, is also located on McGivern Street, west of the hospital. This is a county service, in that old people from the country come here. One of the finest dairy herds in the Township has been raised by the residents of this home.

Two dentists, three doctors and four barristers and lawyers also serve the people of Walkerton.

A variety of recreational facilities are available. A ball park with night lights and three rinks (one indoor and two outdoor) for hockey and curling are located at the exhibition grounds. A theatre is located at the eastern end of Durham Road. Two parks, shown on Map 13, and a legion hall for dances, located on Durham Road, complete the recreational facilities. Walkerton has a hockey team, a baseball team and a lacross team. These sports are on an inter-town basis.

Cultural

Walkerton has three schools; a public school, a new high school and a separate elementary and high school combined. The new Walkerton and District High School is situated on the southern limits of the town and serves the students of both Walkerton and the surrounding area. The old high school could not accommodate the rising number of students therefore Walkerton, with financial aid from the Township, built a new high school. Bus service is provided for the students of the surrounding area. The school area coincides with the trade area shown on Map 8.

Seven churches serve the religious needs of the people of Walkerton and adjacent rural districts; Presbyterian, Roman Catholic, Lutheran, Baptist, Church of England and Methodist.

The Walkerton Public Library was opened in 1898 and today still occupies the original building which is located on Durham Road. It is small and is open only evenings and Saturday.

At one time Walkerton had three newspapers. Today this number has been reduced to one. The present newspaper is the Walkerton Herald Times, with offices on Durham Road. The circulation is 2800 newspapers weekly. The newspaper area corresponds closely with the trade area shown on Map 8.

Transportation

Walkerton is served by three types of roads: provincial, county and township. The provincial roads and some of the county roads are surfaced with asphalt. The remaining county roads and township roads are gravelled. Both the Canadian Pacific Railway and the Canadian National Railway have stations in Walkerton. The Canadian Pacific Railway line, which is a branch line, has its station north of Durham Road. The volume of freight and number of passengers it carries is not great due to the inconvenience of the roundabout route. The Canadian National Railway station is outside of Walkerton but is the more important rail line because it has the faster and more direct route to all parts of Southern Ontario.

Public Utilities

Streets - practically all of the streets in Walkerton are

paved or hard surfaced. As mentioned before the street plan is a modification of a grid pattern.

Water Works and Sewage Disposal. The water works system supplies drinking water to the town and its immediate surrounding area. The pump house is located close to the Canadian National Railway station. Here a number of wells supply the water which is very hard due to the dolomitic bedrock. The supply is assured the whole year round. Pumps are used to draw the water to the surface. Walkerton disposes of much of its sewage in the Saugeen River to the northwest of the town. Many residents burn their own garbage and use the residue as fertilizer for their vegetable gardens.

Industrial

Walkerton has nine light industries which employ nearly six hundred people. There is no, clearly defined industrial zone, but a concentration of industry does occur at the eastern end of Durham Road on the banks of the Saugeen River. This location is due primarily to historical factors. Early industry was established here primarily for the water power provided by the Saugeen River. With the introduction of hydro-electric power however this factor became of minor locational significance, but the construction of a railway line across the river at this point has rejuvenated the importance of this area for industry. Transportation is provided to the industries of this area both for their raw material and their finished products. The following industries are located in the

aforementioned area: the Canada Spool & Bobbin Company, Truax & Son, The Hanover Transport, and the Knechtel Feed Company.

The other industries of Walkerton are located throughout the town. The Canada Packers Creamery is located at the corner of Durham Road and Peter Street. The remaining industries include: Bogdon & Gross Co.Ltd., and National Carbon Co., both of which are located in the vicinity of the Canadian National Railway station, Cunningham Garments, located west of Yonge Street, and Larsen and Shaw Co., which is in the near vicinity of the Canada Packers Creamery.

The Canada Spool & Bobbin Co. was established in Walkerton in 1902. It had carried on business in the town before this time under the name of Kerr and Harcourt, but expecting to obtain cheaper lumber at Wiarton it moved there. It returned however when it discovered that labour was cheaper and more available at Walkerton. Today it is the leading industry of Walkerton and employs 190 people, both men and women. They produce turned wood goods such as spindles, spools, and shuttles. This company has two buildings both of which are located on the Saugeen River opposite to each other. A warehouse is located on the west bank and a factory on the east bank of the river.

The Bogdon and Gross Co., is the only furniture factory in Walkerton. It was established in the town in 1937, primarily because of low taxes within the town limits. For the most part only men are employed in the industry. This plant employs a total of 180 people. It has located close to the railway station, and indeed, has a railway siding running into the yards. Thelocation of the plant is due mainly to the low taxes, cheap transportation and the ease

with which the bulky raw materials and the bulkier finished products can be unloaded and loaded respectively.

The National Carbon Company, manufacturing batteries, is the newest industry in Walkerton. It was established in 1953 and employs 73 people. These people include both men and women who are under 40 years of age. The dusty carbon with which they work is injurious, therefore face masks must be worn for protection. Younger people are not as susceptible to the harmful effects of the carbon dust and are, therefore, preferred. This industry also draws on the labour force of the town. What is more significant however is that is draws on the younger element for employment. This is an important factor in deterring them from migrating to other urban areas. This industry is located near the Canadian National Railway station because of cheaper land values and therefore cheaper taxes in this area and for the transportation which is available.

The Larson and Shaw Co., was established in 1920. It employs 60 men for the manufacture of small metal goods such as door hinges. It was established in Walkerton to use the labour force of the town.

The oldest industry is that which is at the present time is controlled by Truax and Company. It was established in 1874 as a saw and planing mill on the site of the saw-mill originally erected by J. Walker. It located at this site because of the water power available to run the mill. The plant itself has emerged from the saw and planing mill stage and to-day manufactures sashes and doors. This plant employs 54 people. Both the Larson and Shaw and

the Truax Co., employ men only, exclusive of the office staff. The type of work; operating presses and saws precludes the use of women in these plants.

The Cunningham Garments Co., is a small factory which employs 21 people, predominately women. It was established in 1947 for the manufacture of underwear. It has located west of Yonge Street in the district of third class housing. This position is advantageous to both the employer and the employee. Taxes are low and the wives or daughters of the factory workers are available to work in the plant. The women employees have only a very little distance to go to work.

All of the aforementioned industries receive few or no raw materials from the surrounding area. The sources of timber are farther north, although in the early stages of the lumber-using industries the supplies were found close at hand, while the metal and cloth products are shipped to Walkerton from the large urban centres of Southern Ontario. Just as a limited amount of raw materials is received from the immediate area, few of the manufactured products are sent back to the surrounding area. The markets for the industries of Walkerton is essentially nation-wide.

The remaining industries include the Canada Packers Creamery and the Knechtel Feed Co. The Canada Packers Co., was established in 1940. The main function of this plant is the production of butter from milk received from local farmers. Forty-five people, both men and women are employed in this industry. Walkerton has had

a creamery for many years. The former creamery was locally owned and was bought out by the present company. The Knechtel Feed Co., also received products from the farmers fo the area, producing flour from local wheat. It is one of the oldest industries of the town having been on its present water-power site in 1886.

These last two industries differ from the other industries of Walkerton in that they receive their raw materials from the rural hinterland of Walkerton. This is the principal reason for their location in the town. Their market in contrast to that of the other industries, is restricted in that it includes only Southern Ontario.

A surprising characteristic fact of the industry of Walkerton is the complete lack of trade unions. This is an extreme contrast to the situation in Hanover, just six miles away, which is almost completely unionized. The reasons for this are varied. Most of the industries are well established firms in which production is maintained throughout the year thus giving the employees a feeling of security. Also there is little labour turnover throughout the year, indicating the employees are stable and satisfied with their jobs. At one plant, Bogdon and Gross, the employees receive a share of the annual profits.

In summing up it can be stated that Walkerton's industry is light, diversified and stagnant. This stagnancy of industry has precluded expansion of the existing industries. Even during the War the industry underwent little or no change in production. On the whole expansion of industry is confined to the introduction of new industries into the town.

Residential

In the functional survey of the community, three types of housing were recognized and mapped. A majority of these homes are built of brick. There are two types of brick used: red and white. Red brick was used as a rule in construction of first class and new second class homes. White brick was used in the older second class houses and the third class homes.

White bricks were produced in Walkerton until 1930 from clay derived from the present site of the Marl Lakes. They were cheap and for this reason were used in construction of second and third class homes. For construction of first class homes, red bricks were imported into the area. This was done primarily for reasons of prestige because red bricks were more expensive than white bricks. When the brick factory closed due to bankruptcy, white bricks became uncommon in the area and larger numbers of red bricks were imported. With mass production of red bricks and cheaper transporation, the price dropped and they were used for all classes of houses. To-day red bricks are used in the construction of all classes of houses.

An outstanding feature of the houses in Walkerton is the fact that there is no crowding. Large lawns and vegetable gardens are common to almost all of the homes. There are no slum districts.

First Class Residences

These are homes of superior appearance with spacious and well-kept grounds. They are constructed of red brick. Most of these houses are relatively old, although a few of the new ranch style

Plate 11. First Class House with spacious lawns.

Plate 12. Third Class House.

homes are included in this category.

Second Class Residences

This category includes homes which are smaller than the first class. They are of two types. The older second class residences are usually built of white brick and have spacious lawn and vegetable gardens. The other homes included in this category are the new homes which have been built for the most part in the last fifteen years. They differ from the older houses of this category in that they are constructed of red brick or wood and do not have vegetable gardens.

Third Class Residences

The smaller and poorer homes of the community are contained within this category. The homes are constructed of white brick and in a few cases of wood. Large lawns and vegetable gardens are also characteristic of this class.

There is a lack of distinct zonation of first and second class housing. For the most part these homes are located in a triangular section bounded by Durham Road in the north, Yonge Street in the west, and Victoria Street in the southeast. The housing of this area is almost entirely second class with the apex of the triangle composed of first class housing. Some third class houses are also present in this area. Another area of second class housing is found in the south end of the town below South Street. Within this area are the new homes built in the last fifteen years.

The remainder of the community contains mainly third class homes. In the district of third class housing to the west of Yonge Street pockets of second class homes are common. On the north side

Plate 13. Old Second Class House.
Note white brick.

Plate 14. New Second Class House.

of the river third class housing is predominant but two first class residences are present.

Any significance to this zonation of houses is found primarily in the time at which the houses were built and the occupations of the people. The residences of the triangular section mentioned above are old first and second class houses which are occupied by people who have lived in Walkerton all of their lives, and whose parents and grandparents also resided in the comm unity, usually in the same houses. They are professional people for the most part. Many of the factory owners, doctors and lawyers live in this area.

The new second class homes represent the new residents to the town in the last ten to fifteen years. They have congregated together on the well-drained upper terraces of the Saugeen River. For the most part they represent the office workers of the town although some professional people also live in this area.

The third class homes, for the most part, are old also. Many were built before 1920. Many of these houses, which are occupied be factory workers, have been owned by the same family for many years, thus indicating the stability of the factory workers of the town.

Thus it can be seen that the age of the houses and the social structure of the town, which has evelved from the occupations of the people, have been largely responsible for the zonation of the houses within the town.

Rural-Urban Relationship

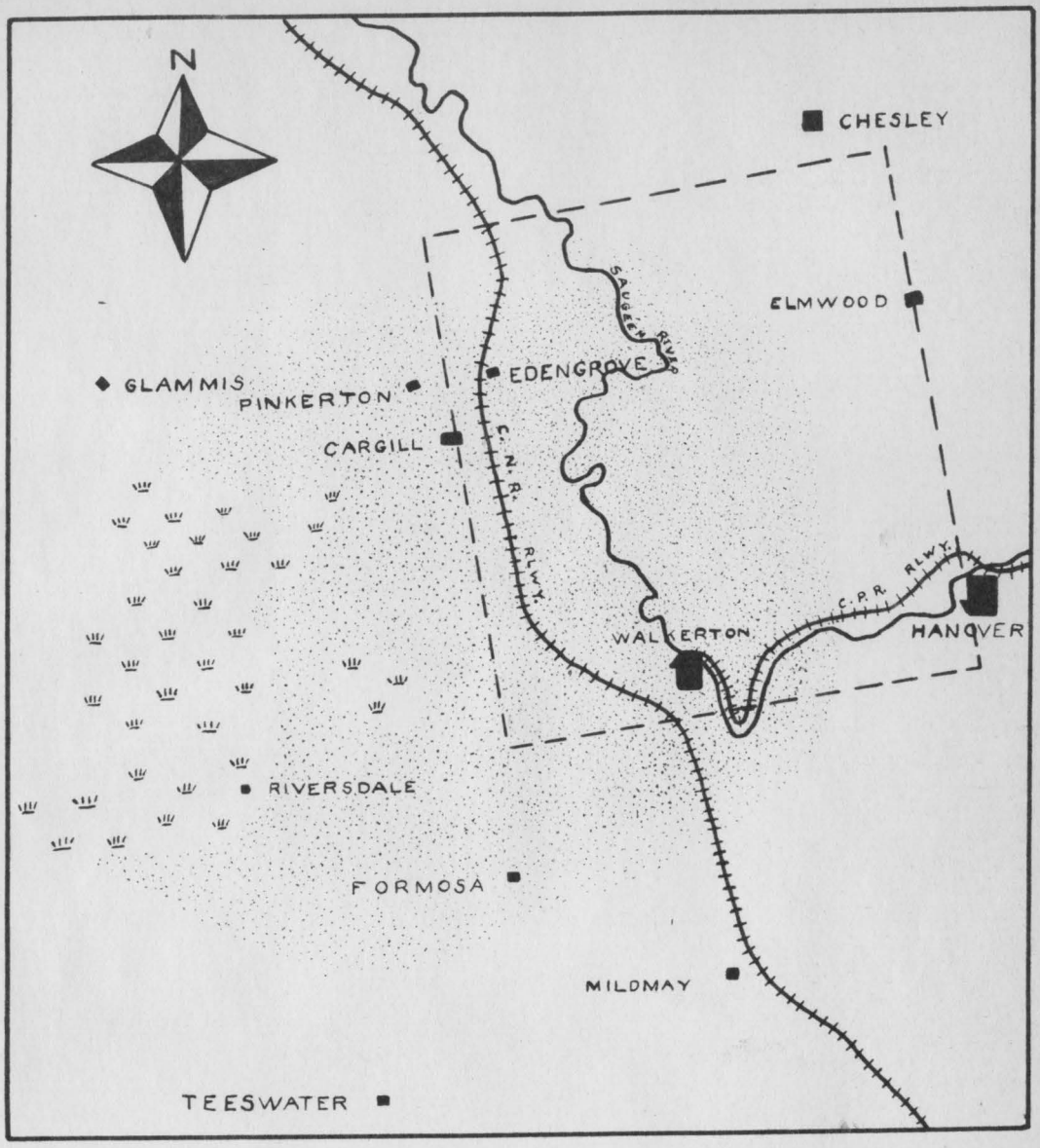
Walkerton is one of the two leading market and service

centres for the area, the second being Hanover. The influence of Hanover is felt by Walkerton in the east. In retail, market, health and recreational services Hanover offers serious competition. Walkerton, however, continues to prosper due to its administrative services which draws people from the county as a whole. The association between the rural area and Walkerton has been further sustained by the new system of Secondary School Education in the town. The new Walkerton and District High School draws students from the surrounding area, primarily from Brant Township itself. This has increased the tendency for the rural population to look to Walkerton as the focal point of the area.

Trade Area of Walkerton

The area which depends on one community more than another as the focal point for its social and economic associations may be termed the trade area of that community. Political associations cannot be used because of their widespread influence. Walkerton, being the county town, influences the whole of Bruce County but the trade area of Walkerton does not include such a vast area. The social and economic associations are for the most part determined by the relationships which a town develops with its rural hinterland. The strengthening or weakening of these relationships will result in a n increase or decrease respectively in the size of the trade area. Walkerton, at one time had an extensive trade area. But with the growth of other urban centres the association have weakened and today the trade area of the town is much less extensive.

The approximate extent of Walkerton's trade area has been determined by the use of numerous criteria. The sphere of influence



TRADE AREA of WALKERTON

SCALE
1 IN.: 4 MIS.

LEGEND

- RIVER
- SWAMP
- RAILWAY
- URBAN
- TRADE AREA
- TOWNSHIP BOUNDARY

B.H.D.

MAP 8

of Walkerton in Brant was determined by a survey of the farmers in the Township. Other factors which were used to determine the trade area served by the school system, the newspaper circulation area, and the location of the bank area.

A study of these factors indicated that the area dominated by Walkerton lies entirely within Bruce County. The sphere of influence includes the western portion of Brant Township but also extends into Carrick, Culross and Greenock Townships.

The most serious limitation to Walkerton's trade area is competition from Hanover, six miles to the east. Other competing centres are Chesley, twelve miles to the northeast, Paisley, fourteen miles to the northwest, by the Greenock Swamp, eight miles to the west and by competition with Mildmay, six miles to the south, and Teeswater, twelve miles to the southeast. It can be seen that the restrictions to the trade area are both cultural and physical. Walkerton is surrounded by a number of small towns to the north, east and south, while to the west lies the Greenock Swamp.

Hanover offers the most severe competition to Walkerton. Its presence only six miles to the east has compressed the trade area of Walkerton so that it extends only two and one half to three miles in that direction. Both Hanover and Walkerton developed on industry and not commerce, therefore they offer the same services, foodstuffs and clothing. Therefore the only criteria that can be used in determining the boundary between the trade area of Walkerton and Hanover is distance. If the consumer lives closer to Walkerton he will go there to shop; if he lives closer to Hanover he will go there to shop. I f thedistance to either town is equal, the choice

of which town the consumer shops in is purely arbitrary.

To the North and South the influence of the small towns and villages on the trade area of Walkerton is not as great therefore Walkerton's trade area extends nine miles to the north and six miles to the south. To the west there are few communities to which the farmers are attracted. As a result, Walkerton has been able to extend her trade area in this direction. But the Greenock Swamp and the poor transportation, routes through this area has limited expansion in this direction. Rural dwellers to the east of the swamp come to Walkerton for their needs while the farmers to the west of the swamp go to Lucknow and Kincardine. As a result Walkerton has been able to extend her trade area only nine miles to the west.

Summary and Future Possibilities

The site of Walkerton is subject to flooding. Therefore new building is confined to the higher slopes away from the river. Two railway lines and two good highways connect Walkerton with the rest of Southern Ontario. The future growth of Walkerton will depend largely upon her ability to attract new light industry to the community. Little expansion can be expected of the existing industries. The industrial town of Hanover offers severe competition in both services and the industrial field because of its superior rail connections and cheaper transportation costs.

Other Urban Land Use

Of the large number of villages which have existed in the past in Brant township only three, apart from Walkerton, have any significance to-day. These are Eden Grove, Cargill and Elmwood of which only the first named is contained entirely within the study

area.

Edengrove

This hamlet has maintained its function as a railway shipping point for the hamlets of Pinkerton, three miles to the west, Glammis, eight miles to the west, and the farmers of the surrounding area. The importance of this centre as a shipping point is limited due to the presence of other urban areas. But its trade area extends to two miles in the east, one-half mile to the south, eight miles to the west, and three miles to the north. To the west there are no railways therefore the influence of Edengrove extends farther in this direction.

The settlement is the simplest form of rural shopping centre and contains a general store, and post office, one gas station, thirteen houses, two churches and the railway station. Its proximity to Pinkerton and Cargill will probably limit further expansion.

Cargill

This community is situated on the western boundary of the Township. It is a saw mill site and service centre. Its trade area is small because of the presence of other small hamlets in the immediate vicinity. The trade area extends approximately two miles to the east, one mile to the south and three miles to the west, but only one half of a mile to the north due to the presence of Edengrove. It possesses a bank, a general store, a grocery store, two hardware stores, one hotel, one restaurant, and three churches. The railway station is situated one half mile from the township boundary. This has caused a shoe-string settlement partway to the station from the

village. Growth of the centre has not been great enough to completely reach the station.

Elmwood

Elmwood serves as a shopping point for a large section of the surrounding area. This area extends one and one half miles to the north and south and four miles to the east and west. The elongated shipping area of this village is due to the proximity of Chesley in the north and Hanover in the south. Both of these centres restrict the importance of Elmwood to the north and south. The lack of rail transporation to the east and west has elongated the shipping area of Elmwood in these directions.

In 1901, when its population was at a maximum the village contained five hundred residents. There are two steampowered saw mills, three gas stations, a bank, a library, a feed building, one hotel, a post office, one barber shop, two general stores, two churches, one grocery store, a volunteer fire station, and a train station. The position of Elmwood, equidistant from Hanover and Chesley, has prolonged its life as a service centre and shipping point for the surrounding area.

Ellengowan, Vesta, Malcolm, Dunkeld and Maple Hill

The above mentioned names were at one time small centres scattered throughout the Township. They usually contained a church and a general store. All of these communities were service centres for the immediate surrounding area. With better means of transportation the farmers began shopping at the larger centres. This led to the extinction of these small service centres.

To-day these communities, with the exception of Dunkeld and Maple Hill, are merely names on the map. Dunkeld and Maple Hill contain nothing more than gas stations to-day.

Recreational Land Use

Very little land is devoted to recreation in Brant. Two golf courses and the area surrounding the Marl Lakes comprise the recreational land use in the Township. The golf courses are situated in an old glacial spillway. The rolling topography and good drainage makes this an ideal location for this type of sporting past time. One of the golf courses is situated at Maple Hill and the other is one mile west of Walkerton. They are both nine hole courses.

The Marl Lakes are not a natural formation. They were formed as a result of the excavation of white marl clay in the production of brick, an industry which continued for forty years. The brick factory was located at Walkerton. But with the introduction of the cheaper red bricks due to mass production, white brick production has ceased. For the most part the water is approximately twenty feet in depth.

The residents of the area have built summer cottages along the shores of these lakes. A majority of the cottage owners live in hanover and commute from the town to the lakes in the summer months. The lots surrounding the lakes are the private property of the cottages and no stores or concessions are allowed, therefore food and refreshments are bought in Hanover. Fishing, swimming and

Plate 15. Walkerton & District High School.

Plate 16. Marl Lakes Recreational Area.

boating are enjoyed by the residents of the cottages.

On the whole recreation is well developed around the Marl Lakes. The shores were at first steeply sloping but have been levelled off somewhat by the cottages. Wharves are still required for the anchorage of the cottages' boats. Reeds and cat-tails are common along the shores. If, however, a better recreational site were available in the area it is unlikely that intensive developement of the Marl Lakes would not have occurred.

CHAPTER VI

SUMMARY AND CONCLUSION

SUMMARY

Brant Township lies in the western portion of Southern Ontario and on the whole has poor road and rail facilities to the large urban centres of Toronto and Hamilton. The bedrock of the study area is flat-lying. This is in extreme contrast to the topography, which is very hummocky and rolling. Brant was galciated in Pleistocene times and the retreating glaciers left a variety of surface features. For the most part these features lie in parallel bands across the Township running from east to west. From south to north they consist of a spillway, a terminal moraine, a till plain, a sand plain, in the north west and a clay plain in the north east.

The soils of Brant are of many types and have been developed on drift which was laid down at the time of or in connection with the Wisconsin glaciation. The heavier soils are potentially very fertile while the lighter sandy soils require heavy applications of fertilizer. However all of the soil types require careful farm management, to maintain the fertility levels and to overcome the erosional problems which exist.

The Township lies within the zone of cyclonic activity. These storms produce a climate which is noted for its extreme changeability. On the whole favourable climatic conditions prevail for mixed farming.

Brant has been divided into four land types. Each of these types has slightly different problems in land use.

Much of the original forest cover has been cleared. To-day the forest cover consists of small farm woodlots of second or thirdgrowth.

The Ottawa Indians were the original inhabitants of the area. They controlled this area until 1836 when the land was purchased by the government. Settlement began in 1849 but lagged until adequate transportation facilities had been developed. The construction of the Durham and Elora Roads through the Township gave an impetus to settlement and by 1874 Brant was completely settled.

The Township attained its maximum population in 1881 but it was not until 1911 that the maximum acreage of farmland was occupied. Since that time however there has been a decrease in the amount of land occupied. At the same time there has been continuous depopulation of the rural areas.

Walkerton was established in 1850 by Joseph Walker at a fording point on the Saugeen River. Growth of the settlement

was slow until the coming of the railway in 1871. Until that time Walkerton had been primarily a service centre for the rural area of Brant. But with the introduction of the railway the settlement became a market town and an industrial town. To-day it still retains these functions but has also become the administrative centre for the county.

With the rapid settlement of the Township after 1853 a number of small service centres grew up very quickly in the Township. But with the coming of the railway they declined equally as rapidly because their usefulness as service centres had come to an end.

As early as 1853 wheat became the dominant crop of the Township. But by the turn of the century wheat production had decreased considerably in favour of a mixed type of agriculture which placed an emphasis on livestock. Wheat still remained however as an important cash crop. To-day a general type of farming economy prevails with the major emphasis being placed on livestock. The fattening of beef cattle for the production of meat for the large urban markets of Toronto and Hamilton has assumed a dominant position on the average Brant farm. Dairying is still important also in the Township.

The trend towards livestock is reflected in the crops of the area. Hay crops and pasture cover the most extensive acreages in the Township while mixed grains lead all other cereal crops in acreage. Small acreages of other crops are grown for local

consumption and to supplement the farmers income.

Most of the land use in Brant is limited to agriculture and urban uses. A small area is however devoted to recreational activities. This area includes two golf courses and the area surrounding the Marl Lakes.

CONCLUSION

The present land utilization pattern of Brant Township has been the result of physical and economic factors. The physical factors which prdduced a variety of surface features and the present soils, have not been the most significant influences on the developement of the present agriculture. Even in the early stages of developement, the location of farms was more dependent on transporation than on topography and soils. This can be further emphasized by the fact that although there are four definite land types in Brant, a general farm economy dominates. However, in each of the land types there are slight variations in the percentages of crops grown.

The economic factor is the most important factor and has caused the farmers to turn from a grain growing economy to a livestock producing economy, for which large acreages of pasture and hay crops are required. Brant Township to-day is a region of mixed farming with an emphasis on animal husbandry. Beef cattle are especially important but dairying plays no small part in the economy.

The cultural and physical factors have also decreased the

the interrealtionships of Walkerton with the Township. Walkerton still serves as a bridge point but raw materials for its industry are obtained from outside of the area and Walkerton is no longer dependent on local power. Therefore Walkerton, which was initially a service and market centre, is to-day primarily an industrial town and is not primarily dependent on the Township.

The change in farm economy and transporation developement had effects on the interrealtionships between Walkerton and the Township. Walkerton lost its rank as the chief market centre of the Township for farm products. A large section of the Township however still depends on Walkerton as a service centre.

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