

CHAPTER II

ANTIGONISH COUNTY

General Geology

The Upper Mississippian Windsor Group of marine sediments in Antigonish County, as in the type area near Windsor, N. S., is made up of gypsum, anhydrite, salt, limestone, fossiliferous limestone, magnesium limestone and a variety of siltstones, mudstones, sandstones and calcareous shales. The western boundary of these Windsor beds is in fault contact either with sandstones of the underlying Horton Group of sediments of continental origin or with the Browns Mountain metamorphic group, while the southeast boundary is in conformable contact with Horton sandstones and siltstones. In the Antigonish area the Windsor Group is in fault contact with the younger Canso Group of sediments, Upper Mississippian in age.

The Southside Antigonish Harbour area is considered to be underlain by the most significant limestone occurrences in Antigonish County. This area lies within a central basin in which the limestone beds appear to have a greater thickness than is apparent along its outer margins. The limestones found in this central basin are mainly fossiliferous and are rimming or sitting on a granodiorite basement which outcrops in several locations from Williams Point to Captains Pond. These limestones were not influenced to any great extent by detrital material originating from the surrounding elevated areas which are composed of metamorphic and granitic rock types. The areas investigated appeared to have been little affected by the process of dolomitization. However, subsequent preliminary drilling programs and analyses showed significant increases in dolomitic stone at depth. Limestone belonging to the E Subzone (Bell) characteristically forms mounds, probably indicative of a reef structure origin.

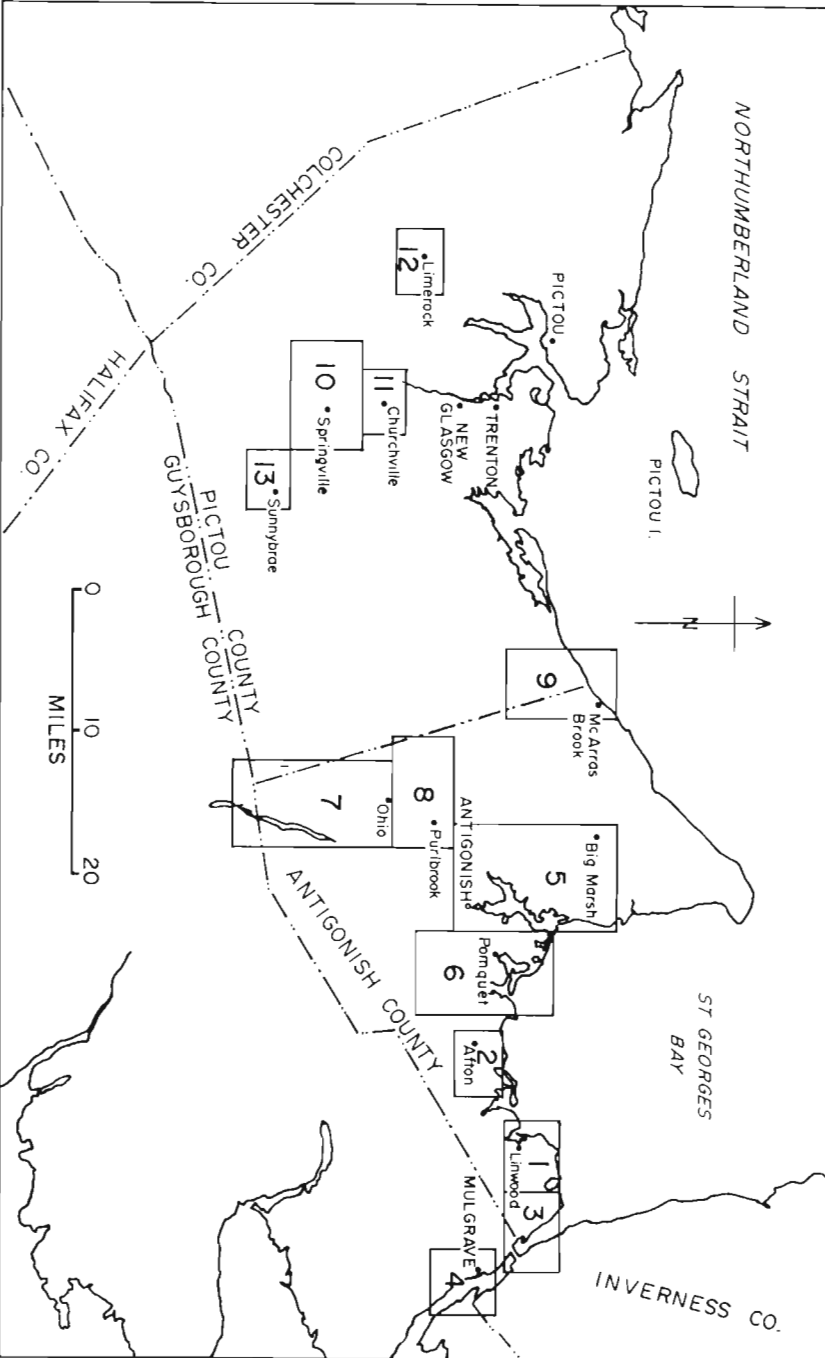
AFTON AREA

AFTON (1-1)

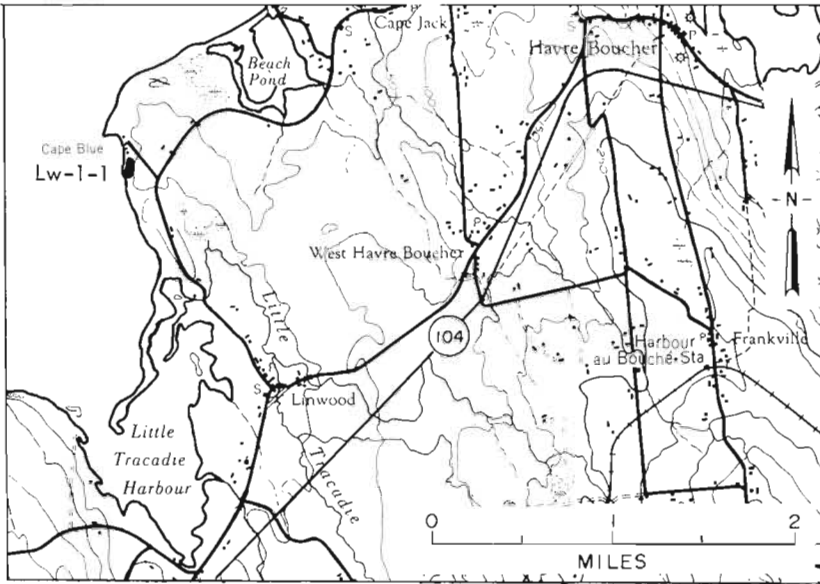
This occurrence is located at Afton, Antigonish County, 0.95 miles south of the Trans-Canada Highway and 1.7 miles south of Route 4 at Bayfield Road. Limestone is found outcropping 790 feet southwest of the road which runs from Bayfield Road to Upper Afton. It is found in a field behind the farmhouse of Isadore Landry. (See Figure 2, page 5)

Description

The rock exposed is a grey, hard, dense, medium-grained, laminated, Windsor limestone belonging to the A Subzone. Bedding is well developed and the weathered surface is light grey and rough. There are many calcite stringers throughout the outcrop which has been folded extensively. The beds strike N 65° E and dip 69° NW.

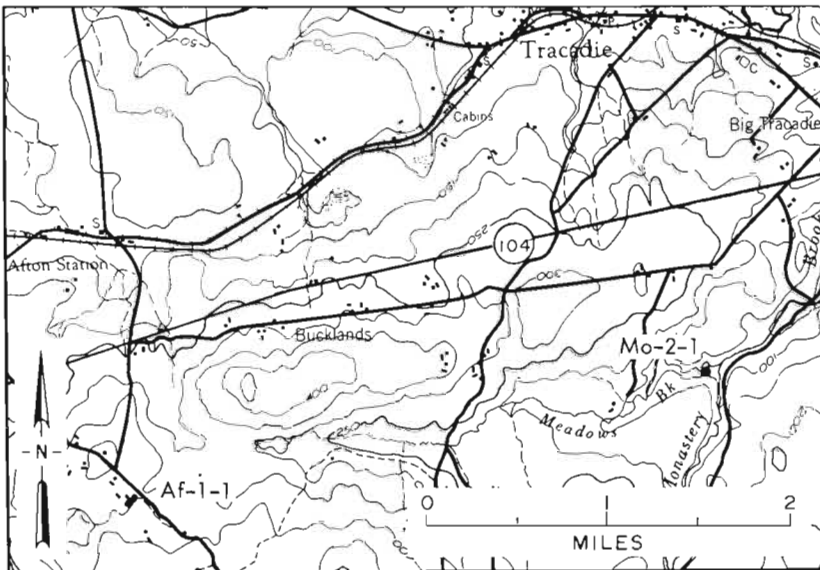


Key Map I. Location of Figures 1-13 inclusive, in Guysborough, Antigonish and Pictou Counties.



Ref Map II-F-12-E

Figure 1



Ref Map II-F-12-E

Figure 2

The limestone forms a ridge 330 feet long which reaches a height of 30 feet at its highest point and which trends parallel to the strike of the bedding. It is 100 feet to 150 feet wide at its base. There are two small quarries located at the northeast and southwest extremities of this ridge. The limestone is 10 to 15 feet thick with little or no overburden. This occurrence is considered too small to be of economic significance.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
AF-1-1	41.90	2.40	1.15	53.40	0.25

ANTIGONISH AREA

ANTIGONISH (1-1)

This occurrence is located on the north end of the Town of Antigonish, 600 feet north of the Antigonish Dairy. Limestone outcrops in a 25 foot embankment on the west side of a road running between Antigonish and Lower North Grant. (See Figure 5, page 15)

Description

It is a dark grey, hard, compact, fine-grained, siliceous, Windsor limestone belonging to the E Subzone. Bedding is thin, well developed and smooth and is striking N 60° E and dipping 56° NW.

The limestone is approximately 20 to 25 feet thick and is overlain by a grey, poorly compacted shale. This shale contains shells and a few crinoid stems. The occurrence is underlain by red and grey siltstone.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
An-1-1	36.30	14.70	3.41	44.50	1.38

ANTIGONISH (2-1)

This occurrence of limestone is located 1.4 miles due north of the railway crossing at the north end of Antigonish on the road to Lower North Grant. The limestone can be found outcropping on both sides of a small brook which runs south along the east side of the road and empties into the Rights River. The road is 50 feet above the brook at this point. (See Figure 5, page 15)



Plate 1. E Subzone limestone found along the Lower North Grant road at the north end of the town of Antigonish, Antigonish County. (An-1-1)



Plate 2. Laminated, A Subzone limestone underlain by conglomerate. Located 1 mile north of the town of Antigonish along the east side of the Lower North Grant road, Antigonish County. (An-2-1)

Description

It is a grey, hard, dense, laminated, medium-grained, Windsor limestone belonging to the A Subzone. Bedding is well developed and thinly laminated, striking N 32° E and dipping 37° SE. The weathered surface is grey and smooth. A large amount of detrital material is evident.

The limestone is between 15 and 20 feet thick. On the east side of the brook there appears to be very little overburden. On the west side of the brook the limestone dips beneath the road. This limestone is underlain by the Rights River Conglomerate.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
An-2-1	36.50	13.00	4.20	40.20	5.57

ANTIGONISH HARBOUR AREA

ANTIGONISH HARBOUR (1-1)

This occurrence is located along the west shore of St. Georges Bay between Ogden Pond and McIsaac Point at Antigonish Harbour. The limestone occurs in a ridge which is approximately 75 feet above sea level, paralleling the shore. It outcrops along the side of the road and at the edge of the water. (See Figure 5, page 15)

Description

The limestone is light reddish grey, very hard, compact, fine-grained and belongs to the Windsor Group. Its weathered surface is rough and light brown in color. Bedding is well developed, striking N 18° E and dipping 31° SE. The upper layer of this occurrence consists of a limestone conglomerate (Plate 4) but towards the base the material becomes more laminated (Plate 3). This is an A Subzone limestone. The zone is approximately 25 feet thick with very little overburden and extends along the shore for approximately a mile.

The surrounding area is accessible but the limestone is considered to be of very little economic value.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
AH-1-1	40.50	5.78	1.32	51.60	0.88



Plate 3. Antigonish Harbour. An A Subzone limestone found north of Crystal Cliffs along the west shore of George's Bay, Antigonish County. (AH-1-1)



Plate 4. Limestone breccia overlying the A Subzone limestone shown above, Antigonish County. (AH-1-1)

ANTIGONISH HARBOUR (2-1)

This occurrence is found at Antigonish Harbour which is located 8 miles north of the Town of Antigonish. Limestone is found outcropping on both sides of the road running between Antigonish and Cape George, in the vicinity north of the intersection of the Mahoney Beach road. Outcrops are mainly found in an open field on the east side of the road, in what appears to have been a small quarry. (See Figure 5, page 15)

Description

It is a light brown, hard, slightly porous, medium-grained, massive, Windsor limestone. Bedding is very poorly developed and the weathered surface is very rough and yellowish brown in color. There is a great deal of secondary calcite along the fractures as well as numerous solution cavities on the weathered surface.

No strike or dip could be measured due to the small areal extent of the outcrop. The limestone however, appears to be trending N 34° E.

There is very little overburden, but its total thickness cannot be measured. The limestone is associated with and possibly overlain by gypsum.

The occurrence does not appear to have either the quality or the quantity to be of any economic value.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
AH-2-1	38.40	8.50	3.98	48.10	0.49

ASHDALE AREA

ASHDALE (1-1)

This occurrence is located along the Sherbrooke-Antigonish highway (Route 7). Limestone outcrops on both sides of the road in a 15 foot high mound trending N 44° E, almost at right angles to the highway. Outcrops were also noted in a small brook which runs parallel to the road. This location is 1.9 miles southeast of Ashdale, and 1.6 miles north of the Glen Road turn-off at Lochaber. There are swamps on either side of the mound. (See Figure 7, page 30)

Description

It is a dark grey to brown, hard, dense, slightly massive, bituminous, dolomitic, Windsor limestone. Bedding is not well developed, but is striking N 44° E and dipping 36° SE. The weathered surface is brown and rough.

The limestone would appear to be approximately 20 to 25 feet thick (the thickness of the mound at the base). There is no overburden. It outcrops along the sides and along the top of the mound. The surrounding area is wooded mostly with spruce and is swampy, but is readily accessible.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
Ad-1-1	39.00	10.50	7.28	30.71	13.62

ASHDALE (2-1)

This occurrence is located along the east side of the Glen Road which runs between Purl Brook and Lochaber. Limestone outcrops along the side of the road, 0.6 miles south of Glen Road and 80 feet south of where the road crosses the brook. It outcrops in a 20 foot high embankment. (See Figure 8, page 35)

Description

It is a dark grey, hard, dense, highly argillaceous, thinly bedded, Windsor limestone. Bedding is well developed, striking N 85° W and dipping 48° NE. A light brown weathered surface which contains a few calcite stringers is characteristic.

The limestone is approximately 15 feet thick with very little overburden. The surrounding area is heavily wooded.

This deposit would not appear to be of any economic value.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
Ad-2-1	31.29	17.60	12.65	28.70	6.32

AULD COVE AREA

AULD COVE (1-1)

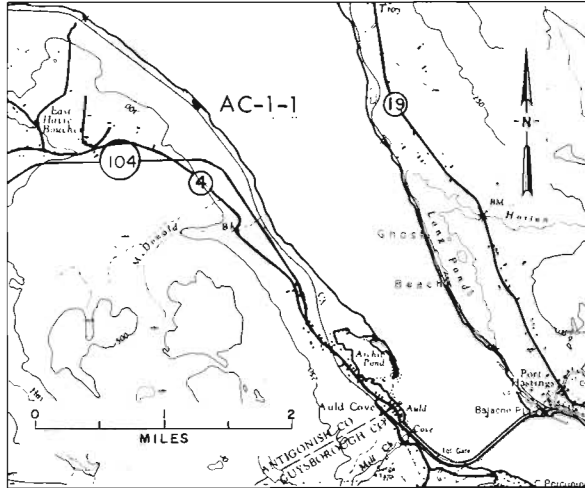
This occurrence is located on the mainland shore of the Strait of Canso, north-west of Auld Cove between the lighthouse at Bellefontaine and McDonald Brook. Limestone is found on a point of land along the shore. (See Figure 3, page 13)



Plate 5. Auld Cove. An A Subzone limestone along the shore of the Strait of Canso, Antigonish County. (AC-1-1)

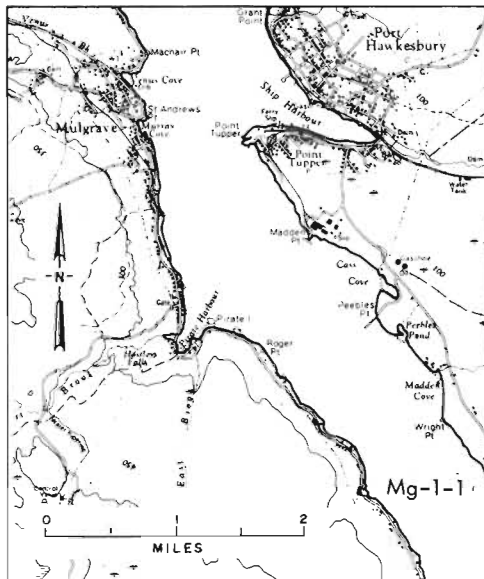


Plate 6. Close-up of laminated A Subzone limestone of above. Antigonish County. (AC-1-1)



Ref. Map II-F-II-W

Figure 3



Ref. Map II-F-II-W

Figure 4

Description

This occurrence is a dark grey, hard, compact, fine-grained (lithographic in sections), laminated (Plate 6), siliceous, Windsor limestone. The bedding is thin and well developed (Plate 5). It is striking N 78° E and is dipping 25° NW. The weathered surface is smooth and grey. There are numerous clusters of calcite crystals and large and small calcite stringers trending N 59° E and N 53° W, thus cutting each other almost at right angles. A large number of these calcite veins have a coating of yellowish brown limonite. The showing is approximately 20 to 25 feet thick with about 10 feet of overburden away from the shore.

Limestone has been faulted up against a light grey, calcareous quartzite of the Horton Group. The fault is striking N 68° W and dipping steeply towards the southwest.

The limestone does not appear to be of any economic value.

Analysis

Sample	L.O.I. (%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO (%)	MgO (%)
AC-1-1	37.60	10.50	2.20	47.30	0.72

BIG MARSH AREA

BIG MARSH (1-1)

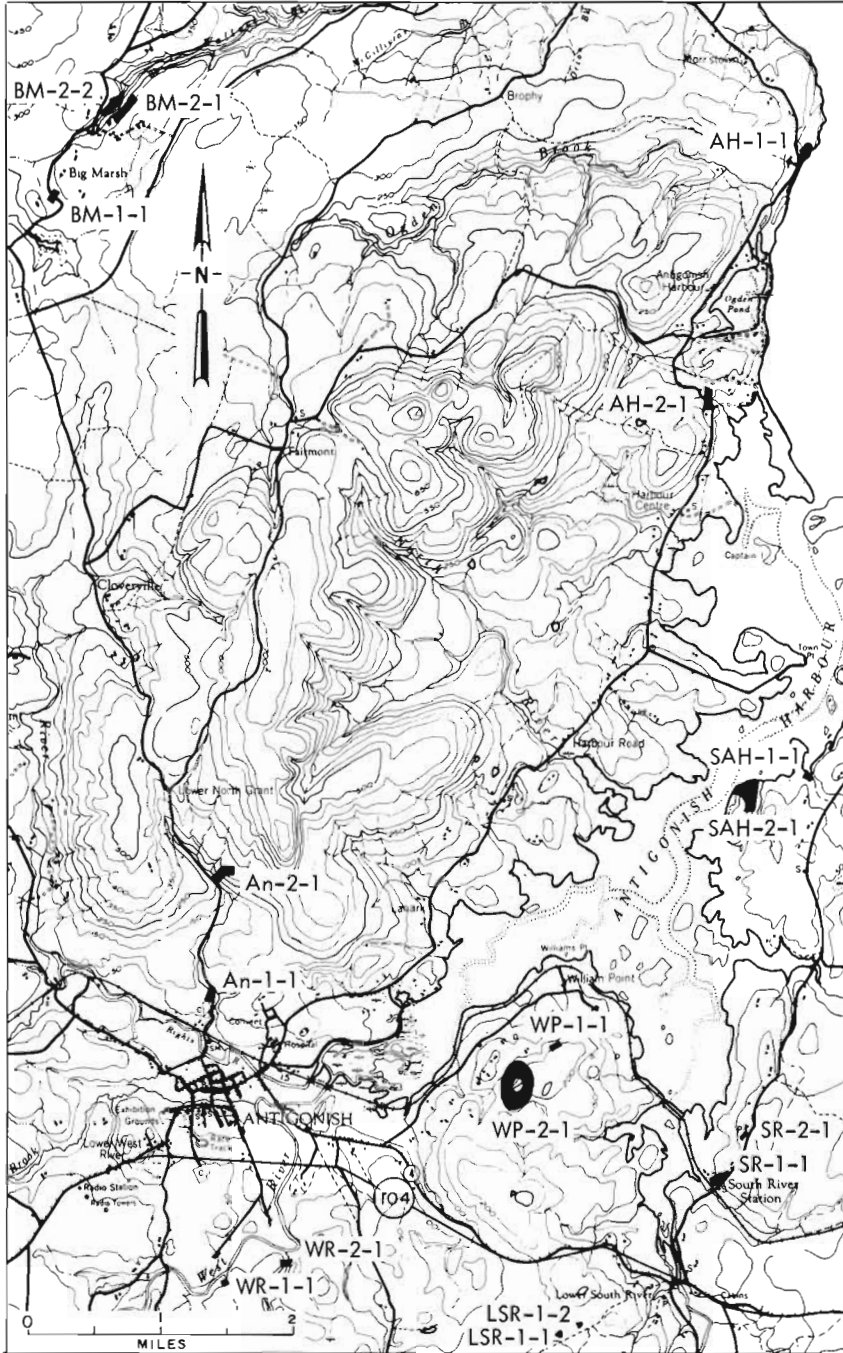
This occurrence is located along both sides of the secondary road running between Big Marsh and Georgeville, approximately 300 yards southwest of the Post Office at Big Marsh. Limestone is found outcropping in the ditch on both sides of the road. (See Figure 5, page 15)

Description

It is a brownish grey, hard, dense, medium-grained, laminated, Windsor limestone. This may be an A Subzone bed which has undergone compaction. Bedding has been distorted, but in general it is striking N 75° E and dipping 25° NW. The weathered surface is very light brownish grey in color and rough.

The limestone appears to be at least 10 to 15 feet thick but is covered by a large amount of overburden.

The surrounding area is open farmland.



Ref. Maps 11-E-9-E , 11-F-12-W

Figure 5

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
BM-1-1	40.50	6.18	1.30	50.40	0.72

BIG MARSH (2-1) (2-2)

This occurrence is located on the property of John McLellan of Big Marsh. This property is on the east side of the road running between Big Marsh and Georgeville approximately 8 miles north of the Town of Antigonish. Limestone outcrops in mounds or ridges which have a trend in a northeasterly direction on either side of the Wallace Brook, immediately north of where the road at Big Marsh crosses Wallace Brook. (See Figure 5, page 15)

Description

Sample BM-2-1 was taken on the east side of the brook. At this point the limestone varies from a reddish brown, thinly bedded, hard, medium-grained material on top to a greenish grey, very hard, compact, fine-grained (almost lithographic), Windsor limestone beneath. Bedding is well developed, striking N 20° E and dipping gently towards the southeast. In the upper horizon, the weathered surface has a red and yellow iron staining. In the lower section, the weathered surface is light grey and smooth. This limestone also contains a section exhibiting round, nodular oncolites (Plate 9).

The limestone can be traced for approximately 1/4 mile along the ridges and would appear to be at least 30 feet thick with very little overburden.

Sample BM-2-2 was taken from an A Subzone limestone located on the west side of Wallace Brook. This limestone is overlain by a limestone breccio (Plate 8). Here the material is a thinly laminated, grey, hard, fine-grained, Windsor limestone which strikes N 25° E and dips from 43° to 63° SE. The overlying limestone breccio contains blocks of the underlying laminated A limestone. The occurrence parallels showing BM-2-1 for a distance of 1/4 mile, but does not appear to be greater than 15 feet thick and is covered by very little overburden.

This limestone is underlain by the Rights River Conglomerate.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
BM-2-1	39.10	11.91	1.39	46.41	0.81
BM-2-2	39.72	4.97	1.95	51.02	0.61



Plate 7. Big Marsh, Antigonish County. Laminated,
A Subzone limestone. (BM-2-2)



Plate 8. Big Marsh, Antigonish County. Limestone breccia
overlying the laminated limestone of above, with
large fragments of underlying A limestone of above.
(BM-2-2)



Plate 9. Oncolites found in A Subzone limestone at Big Marsh, Antigonish County. (BM-2-1)



Plate 10. College Grant, Antigonish County. Laminated, siliceous limestone of Silurian age. Similar in appearance to the A Subzone limestones of the Windsor Group. (CG-1-1)

COLLEGE GRANT AREA

COLLEGE GRANT (1-1)

This occurrence of limestone is located approximately one mile east of College Grant in the southwest corner of Antigonish County. Limestone can be found outcropping in a road running north from the College Grant - South Lochaber road. It also outcrops along a farm lane and in a small pit west of the road. The outcrop on the road is 0.7 miles north of the College Grant - Lochaber road. (See Figure 7, page 30)

Description

It is a grey, very hard, highly siliceous, dense, fine-grained, laminated, Silurian (Benson, 1963) limestone. Bedding is well developed, striking N 59° E and dipping 56° SE and the weathered surface is grey and smooth. This limestone is very similar in appearance to the A Subzone limestones of the Windsor Group (Plate 10).

The limestone is 10 feet thick and is underlain by a green quartzite of probably Silurian age (Arisaig Group) containing pyrite cubes. It is overlain by a green gabbroic intrusive considered to be post Carboniferous in age. There is very little overburden. In 1952, a drill hole was put down just east of this location and cut 437 feet of grey limestone. Subsequent drilling in this area for base metals also cut considerable thicknesses of limestone.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CoO(%)	MgO(%)
CG-1-1	30.60	22.95	5.58	30.60	1.27

JAMES RIVER AREA

JAMES RIVER (1-1)

This occurrence is located approximately two miles south of James River Station in the western part of Antigonish County, near the Pictou County line. Limestone outcrops on the west side of the Beaver River, 0.3 miles southeast of Cameron Lake. The occurrence is 1,800 feet downstream from where the James River-Keppoch road crosses the river. It outcrops on the west bank of the river and extends away from the river at right angles. (See Figure 8, page 35)

Description

This occurrence varies upwards from a grey, hard, dense, laminated, Windsor limestone of the A Subzone in the bottom 10 feet of the section, to a red, calcareous conglomerate which contains small fragments of the underlying limestone. This conglomerate is approximately 6 feet thick and is, in turn, overlain by 10 feet of a laminated, grey, hard, dense limestone which is overlain by a brown, hard, dense, massive limestone approximately 15 feet thick. The weathered surface in the laminated limestone is light grey and smooth and exhibits calcite veins. The massive limestone has a brown, rough, weathered surface. It is striking N 62° W and dipping 68° NE.

The entire section is approximately 40 feet thick with very little overburden. The surrounding area is heavily wooded.

The following analysis is from a 40 foot channel sample.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
JR-1-1	37.80	10.01	2.86	46.90	1.60

JAMES RIVER (2-1)

This occurrence is located along the northwest side of Route 4, approximately one mile northeast of James River Station. Limestone is found 900 feet up a small brook which crosses Route 4, 0.5 miles southwest of where the Canadian National Railway crosses Route 4. It outcrops in the small brook and within a small mound which trends N 52° E away from this brook. (See Figure 8, page 35)

Description

The exposure is of a grey, hard, dense, laminated, Windsor limestone belonging to the A Subzone. Bedding is well developed, striking N 52° E and dipping 16° SE. The weathered surface is light grey and exhibits many calcite veins.

The thickness of this limestone could not be determined. It is covered by very little overburden. The limestone is underlain by a conglomerate, probably the Rights River Conglomerate, which is considered to mark the base of the Windsor Group in this area. The Horton-Windsor contact runs northeast, north of Brierly Brook and Antigonish. This limestone can be found along the flank of a hill in this area.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
JR-2-1	37.10	12.00	3.99	44.70	1.70

LINWOOD AREA

LINWOOD (1-1)

This occurrence is located along the eastern shore of St. Georges Bay, approximately 1,000 feet south of Cape Blue. Limestone outcrops approximately 2 miles northwest of Linwood along the edge of and extending out into Georges Bay. (See Figure 1, page 5)

Description

This is a dark grey, hard, dense, fine-grained, laminated, basal Windsor limestone. It belongs to the A Subzone. The bedding is well developed, striking N 18° E and dipping 19° NW (Plate 11). The weathered surface is smooth and grey. Numerous fractures and sigmoidal gash veins throughout the limestone have been filled with calcite (Plate 12) and frequently carry minor fluorite. The topmost layers of the limestone have been intensely folded.

The limestone is 15 to 20 feet thick with very little overburden. It strikes inland more or less at right angles to the shoreline and is underlain by a reddish brown siltstone. Slippage along the bedding planes is striking N 30° W.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
Lw-1-1	39.25	7.22	1.65	49.70	0.66

LOWER SOUTH RIVER AREA

LOWER SOUTH RIVER (1-1) (1-2)

This occurrence of limestone is located one mile southwest of the bridge at Lower South River on the Trans-Canada Highway in Antigonish County. It outcrops in the woods just north of an old road between Lower South River and Beech Hill. The road is still passable for 4-wheel drive vehicle traffic. It runs through the farmyard of Rodney Chisholm at Lower South River. The outcrop is located 0.8 miles from the Rodney Chisholm farm and is bounded on both ends by power lines. (See Figure 5, page 15)

Description

It is a dark grey, hard, dense, fossiliferous, massive, bituminous, Windsor limestone belonging to the E Subzone. Bedding is very poorly developed. The weathered surface is rough with numerous fossil cavities and is brownish grey in color. In some parts of the limestone, fossils are large and well developed, whereas in other sections the shells are small or non-existent. Brachiopods and pelecypods were noted. The limestone is similar in appearance to the occurrences found at Southside Antigonish Harbour and Pomquet. The attitude of the beds could not be measured due to its



Plate 11. An A Subzone limestone found along the shore of St. George's Bay at Linwood, Antigonish County. (Lw-1-1)



Plate 12. Close-up of above, showing calcite-filled sigmoidal gash veins. Linwood, Antigonish County. (Lw-1-1)



Plate 13. A laminated, A Subzone limestone showing algal growths. Found along the shore of St. George's Bay at Linwood, Antigonish County. (Lw-1-1)



Plate 14. McArras Brook. Oolitic limestone along the shore of the Northumberland Strait, Antigonish County. (MB-1-1)

massive nature.

This limestone is found in a ridge which trends generally in a northeasterly direction. This ridge is similar to other E Subzane limestone ridges found in the surrounding area and is comprised of a series of mounds or small hills, one of which reaches a height of approximately 30 feet above the surrounding swampy areas. Where examined, the limestone is 800 feet long and approximately 150 to 200 feet wide at its base.

The surrounding area is heavily wooded, mainly with evergreens, and is not easily accessible. There is little or no overburden covering this limestone.

Two drill holes were put down in this limestone in 1951 by the Nova Scotia Department of Mines. The first hole was collared on top of the northeastern end of this ridge. It penetrated 72 feet of grey limestone before entering a red shale horizon. The second hole was collared at the base of the ridge in the swamp. No limestone was cut indicating that the limestone drops off sharply away from the ridge on both sides.

Sample LSR-1-1 was taken from the southwest end of the ridge and LSR-1-2 was taken from the northeast end.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
LSR-1-1	42.85	0.81	0.95	53.85	0.66
LSR-1-2	42.80	3.07	0.83	49.03	0.61

McARRAS BROOK AREA

McARRAS BROOK (1-1)

This occurrence is located along the shore of the Northumberland Strait, southwest of Arisaig and northeast of Knaydart. Limestone can be found outcropping in a 30 foot embankment along the shore, 1.2 miles northeast of the cross-roads at Knaydart. (See Figure 9 , page 54)

Description

It is a grey, hard, dense, medium-grained, oolitic, high calcium, Windsor limestone (Plate 14). The weathered surface is grey and smooth. Bedding is well developed, strikes N 10° W and dips 33° SW. It contains some small calcite stringers.

The limestone has been faulted along the shore. It is 20 to 25 feet thick with very little overburden. It is underlain by a red and green shale and is overlain by sandstone and then another limestone bed which is 10 feet thick.

This location is near the eastern margin of Windsor Group of sediments in this area.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
MB-1-1	43.02	0.83	1.67	52.37	0.62

MEADOW GREEN AREA

MEADOW GREEN (1-1)

This occurrence is on the upper section of the Pomquet River at Meadow Green. Limestone is found 20 feet east of the bridge on the road running between Black Avon and Meadow Green. It outcrops in the bank of the river and strikes at right angles to the river. (See Figure 6, page 27)

Description

This is a dark grey, hard, dense, fine-grained, siliceous, Windsor limestone which possibly belongs to the A Subzone. Bedding is well developed striking N 7° E and dipping 80° SE. The weathered surface is light brown. It is overlain by red siltstone and sandstone.

The limestone is 10 feet thick with very little overburden.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
MG-1-1	36.60	12.80	3.38	44.70	0.97

MONASTERY AREA

MONASTERY (2-1)

This occurrence is located on the Meadows Brook, 950 feet upstream from its junction with Monastery Brook. The location is approximately two miles southwest of Monastery on Route 4. Limestone is found outcropping in a 35 foot embankment and is striking into the bank. (See Figure 2, page 5)

Description

It is a reddish brown, hard, very porous, medium-grained, Windsor limestone. Bedding is poorly developed and massive. It strikes east-west and dips 76° NW. There is a great deal of limonite staining. A few small cavities partially filled with calcite crystals and small calcite stringers may be observed. It is a B₂ Subzone (Sage, 1954) limestone.

The limestone is only 10 feet thick.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
Mo-2-1	41.90	2.93	4.05	48.16	3.17

MONKS HEAD AREA

There are several limestone beds of B, C, and D Subzones (Sage, 1954) at Monks Head on the south shore of St. Georges Bay between Antigonish Harbour and Pomquet Harbour. The thickest of these beds is approximately 10 to 15 feet. The beds along this shore are standing almost vertically and most of the limestones contain some gypsum and argillaceous material, making them of very little economic value.

MONKS HEAD (1-1) (Diamond drilling)

This occurrence is located 0.3 miles west of Monk Pond, three miles northwest of the village of Pomquet. Limestone outcrops in a mound 900 feet long. It is on the east side of the road running around Monk Pond. (See Figure 6, page 27)

Description

It is a grey, hard, dense, massive, oolitic, Windsor limestone belonging to the E Subzone. Bedding is very poorly developed and the weathered surface is light brown and smooth. Due to the massive nature of the limestone, its attitude could not be determined.

The elevated area in which the limestone is located outcrops at the edge of an open field. It trends N 25° E, averages approximately 40 feet wide on top and rises in some places to a height of approximately 35 feet with limestone outcropping on both sides. A small quarry had been established in the side of the mound.

The surrounding area is covered mainly with spruce and is easily accessible. There appears to be very little overburden present.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
MH-1-1	43.25	1.16	0.65	52.00	2.35

MONKS HEAD (1-2)

This sample of limestone was taken from an outcrop in a ditch on the east side of the road which encircles Monk Pond. It is approximately 500 to 600 feet south of MH-1-1 between Captain Pond and Mank Pond. (See Figure 6, page 27)

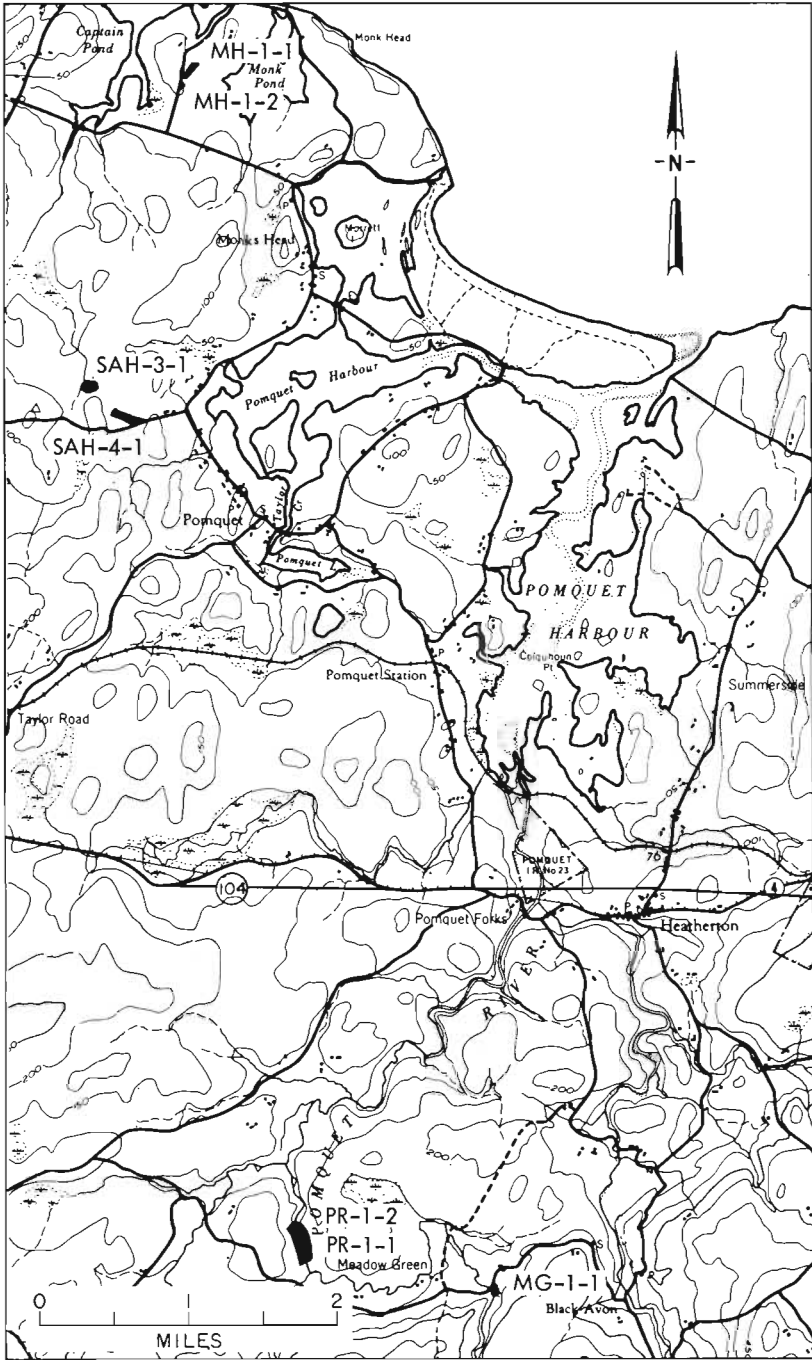


Figure 6



Plate 15. Columnar structures (algal clubs). No sample taken.
Monks Head, Antigonish County.



Plate 16. Outcrop of limestone located on the east side of the
Ohio River, Antigonish County. (OH-3-1)

Description

It is a grey, hard, dense, medium-grained, blocky, slightly oolitic, Windsor limestone of the E Subzone. Bedding is poorly developed and the weathered surface is rough and brown in color.

Strike and dip could not be measured because of the broken nature of the outcrop.

The limestone outcrops in the ditch and in the side of a hill on the east side of the road. The deposit appears to be a continuation of MH-1-1. There is very little overburden and no indication as to the actual thickness of the limestone because of the small areal extent of the outcrop.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
MH-1-2	43.40	1.13	1.15	47.50	5.90

THE OHIO RIVER AREA

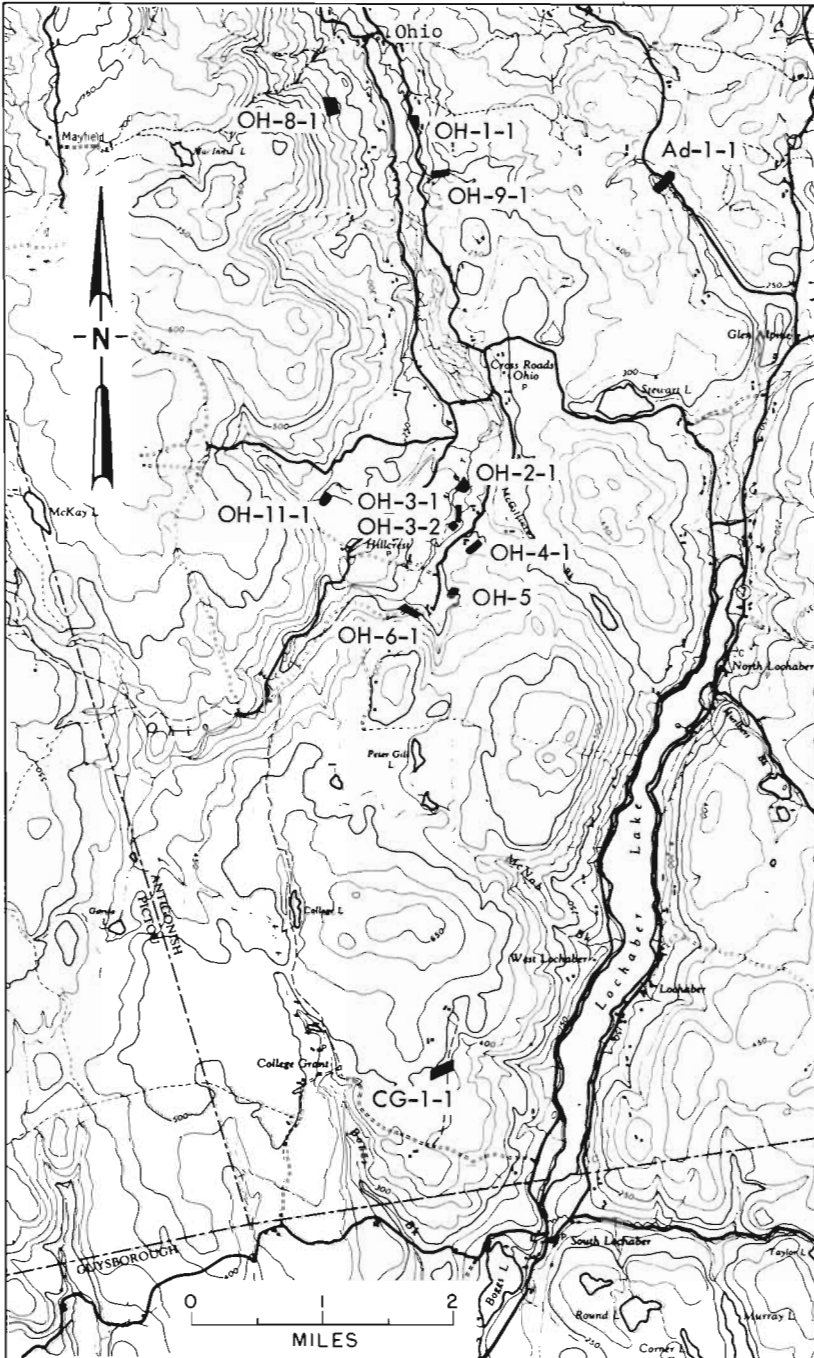
The Ohio River Valley is bounded on the north by St. Joseph and James River and by Hillcrest on the south. Sedimentary rocks of the Windsor Group are found along this river valley, but give way on the west to older rocks belonging to the Browns Mountain Group of Ordovician age and are overlain by sedimentary rocks of the Canso Group of Lower Carboniferous age on the east.

A large number of limestone occurrences found on the west side of the Ohio Valley belong to Subzone A (Bell, 1929). These laminated limestones mark the boundary of the Windsor sediments in this area. The A limestones tend to be high in silica because of their nearness to the ancient shorelines. They are generally only 10 to 15 feet in thickness and are considered to be too thin to be of economic value.

The area to the east of the Ohio River would appear to be a more likely area for thicker beds and better quality limestones. The difference is primarily because the Windsor basin deepened to the east. This preliminary surface inventory did not, however, outline many occurrences which have the necessary quality or quantity to be suggestive of major productive areas for either limestone or dolomite. Tested by diamond drilling may, of course, show that larger bodies are present than are apparent from surface examinations.

OHIO RIVER (1-1)

This occurrence is located on the road between Ohio and Cross Roads Ohio, 0.85 miles south of the intersection at Ohio. Limestone can be found poorly exposed on the east side of the road in a 12 foot high embankment. (See Figure 7, page 30)



Ref Maps II-E-8-E, II-E-9-E

Figure 7

Description

It is a dark grey, very hard, compact, fine-grained (almost lithographic), Windsor limestone. Bedding is very poorly developed and the weathered surface is smooth and dark grey. There are calcite stringers running through the limestone. The beds appear to be striking N 26° E and dipping 13°NW.

Because of the small areal extent of this outcrop, the thickness of the limestone could not be determined. There appears to be a large amount of drift in the area, although little was apparent in the immediate vicinity of the exposure.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
OH-1-1	40.75	5.86	2.46	49.20	1.93

OHIO RIVER (2-1)

This limestone occurrence is located on the west side of the Ohio River between Hillcrest and Cross Roads Ohio. This outcrop is approximately one mile north of where the Ohio River is crossed by the road at Hillcrest. Limestone forms a 30 foot high embankment along the side of the river and dips down into the river. The east side of the river consists of open farm land while the west side is wooded. (See Figure 7, page 30)

Description

A grey, hard, fine-grained, argillaceous, Windsor limestone is exposed here. It is laminated in a few sections. Bedding is well developed in layers generally 1 to 2 inches thick, which strike N 20° E and dip 65° SE. The weathered surface is greyish brown and smooth. Thin calcite stringers are evident in the outcrop.

Although there is very little overburden in the area, thickness of the section can not be determined due to the limited extent of outcrop.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CoO(%)	MgO(%)
OH-2-1	40.50	5.30	1.64	51.20	0.61

OHIO RIVER (3-1)

This occurrence is located on the Ohio River, 900 feet upstream from occurrence OH-2-1. Limestone outcrops on the east side of the river in a 20 foot embankment. This outcrop area is found approximately 1/2 mile downstream from the river crossing at Hillcrest. (See Figure 7, page 30)

Description

It is a dark grey, hard, very compact, argillaceous, fine-grained, Windsor limestone. Bedding is well developed and blocky (Plate 16), striking N 5° E and dipping 29° NW with beds measuring approximately 3 inches in thickness. The weathered surface is smooth, very dark grey, and contains numerous calcite stringers.

The limestone is at least 20 feet thick with very little overburden. The surrounding area is only lightly wooded and is easily accessible.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
OH-3-1	39.81	6.24	2.06	49.33	0.92

OHIO RIVER (3-2)

This dolomite is found outcropping 1,500 feet upstream from OH-3-1. It is found on the east side of the Ohio River, approximately 1/2 mile downstream from the river crossing at Hillcrest. Dolomite forms a 40 foot high embankment. (See Figure 7, page 30)

Description

It is a dark grey, hard, dense, fine-grained, argillaceous, Windsor dolomite. Bedding is well developed striking N 23° E and dipping 67° NW. The weathered surface is brownish grey, smooth, and marked by small calcite veins.

The ridge formed by this dolomite has a trend parallel to the river. There appears to be a large amount of dolomite here, but very little information is available due to the limited extent of the outcrop.

Analysis

Sample	L.O.I.(%)	SiO(%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
OH-3-2	40.30	9.31	4.82	27.30	18.21

OHIO RIVER (4-1)

This occurrence is located on the east side of the road between Hillcrest and Crossroads Ohio where it forms a small hill behind an abandoned farm, 0.4 miles north of the Hillcrest turn off. Limestone can be found outcropping in the side of this hill at the edge of the woods approximately 300 feet east and to the rear of a house. The hill is elongate and has a trend almost parallel to the road. (See Figure 7, page 30)

Description

It is a dark grey, hard, dense, medium-grained, laminated, Windsor limestone belonging to the A Subzone. Bedding is well developed, striking N 45° E and dipping vertically. The weathered surface varies from yellowish brown in some sections to a dark bluish grey in others.

The limestone does not appear to have a thickness greater than 15 feet and is covered by very little overburden. The surrounding area is heavily wooded with evergreens.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
OH-4-1	39.95	5.95	2.03	50.20	0.59

OHIO RIVER (5) (Float)

This high calcium limestone float is found on the east side of the road, 0.5 miles southeast of Hillcrest. This occurrence can be found in the side of a hill 0.2 miles south of the Ohio Cross Roads-Hillcrest turn off. Large boulders of limestone are exposed in the side of this hill which suggests that the float is near bedrock. (See Figure 7, page 30)

Description

It is a dark grey, hard, dense, fine-grained, Windsor limestone. This float contains numerous calcite stringers, blebs and small solution cavities throughout. The weathered surface of these boulders is smooth, rounded and bluish grey.

There are numerous deep sink holes in an area covering 2 to 4 acres with no outcrop visible. The surrounding area consists mostly of open farm land.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
OH-5	42.41	1.32	0.93	54.07	0.71

OHIO RIVER (6-1)

This occurrence is located on the road which runs south of Hillcrest and is approximately 1/3 mile south of the float occurrence found at OH-5. Limestone is found outcropping on both sides of the road and also in the road. This road runs south on the east side of the Ohio River, crosses the river and runs north again to Hillcrest. (See Figure 7, page 30)

Description

This high calcium limestone is bluish grey, hard, slightly crystalline, massive, fine-grained and belongs to the Windsor Group. Bedding is poorly developed and the weathered surface is light brown and rough. There are numerous calcite stringers, blebs and cavities in the outcrop. The weathered surface has an appearance similar to the Precambrian limestones of Cape Breton. Strike and dip could not be measured due to the massive nature of the occurrence.

Although only a small portion of the limestone can be seen, there appears to be very little overburden. The surrounding area is heavily wooded with evergreens and is easily accessible.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
OH-6-1	41.50	2.32	1.12	53.50	0.34

OHIO RIVER (7-1)

This occurrence is located on the west side of the Ohio River across the river from the Roman Catholic Church at St. Joseph. Limestone can be found outcropping on a small brook, 780 feet upstream from the road which runs along the west side of the Ohio River between St. Joseph and Ohio. This brook is 1.6 miles northwest of Ohio and empties into the Ohio River. (See Figure 8, page 35)

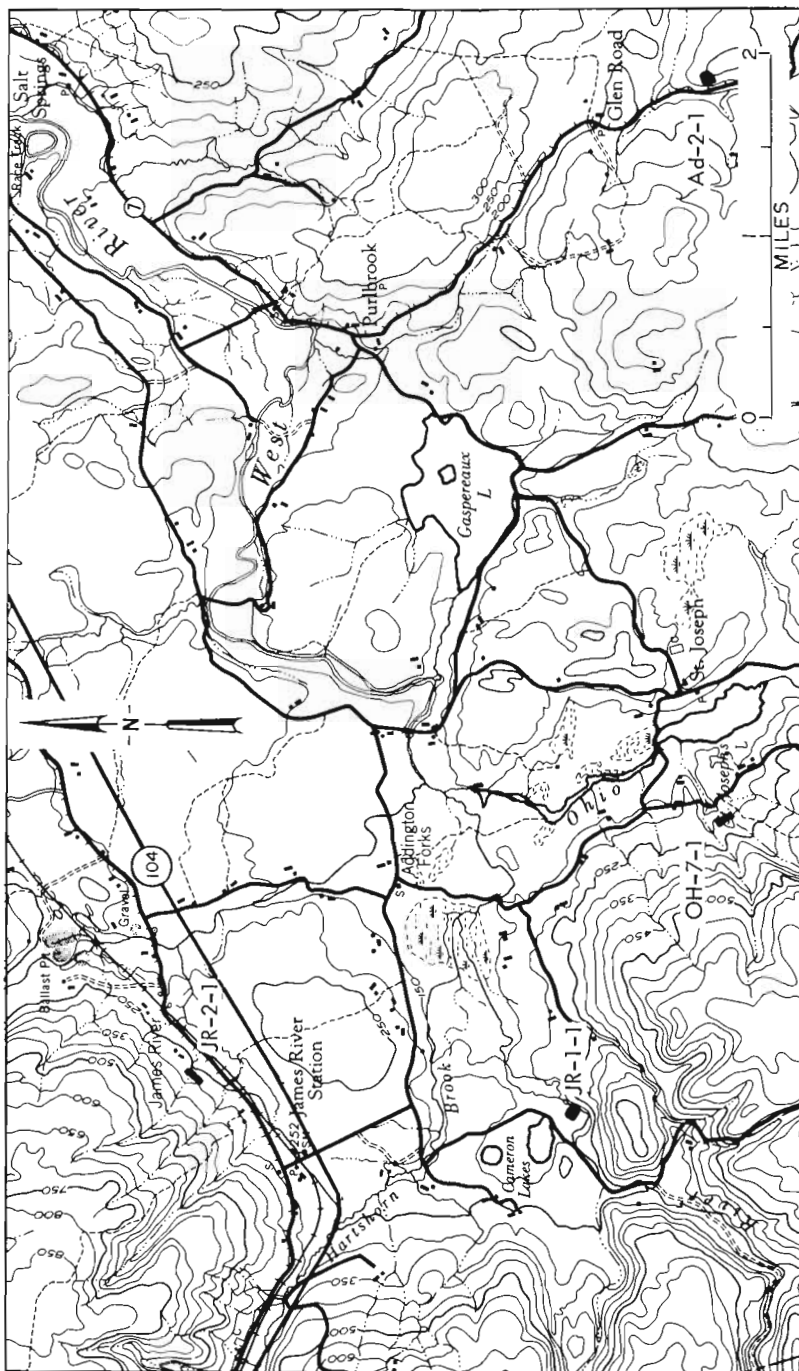
Description

It is a dark grey, hard, dense, laminated, siliceous, Windsor limestone belonging to the A Subzone. Bedding is well developed and the weathered surface is smooth and grey. Strike and dip could not be measured due to the broken nature and small areal extent of the outcrop.

This limestone would not appear to be any greater than 15 to 20 feet thick under large amounts of overburden.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
OH-7-1	35.20	15.90	3.52	44.80	0.59



Ref. Map 11-E-9-E

Figure 8

OHIO RIVER (8-1)

This occurrence is located 0.7 miles southwest of the village of Ohio. Limestone can be found outcropping in a hill at the edge of the woods on the west side of the Ohio River. This hill is trending almost due north. The outcrop is approximately 2,000 feet west of a road running along the west side of the Ohio River. (See Figure 7, page 30)

Description

It is a grey, hard, medium-grained, fossiliferous, massive, Windsor limestone. Bedding is very poorly developed. The weathered surface is grey and smooth. Boulders of a limestone breccia, that is known to overlie the A Subzone limestone, also occur at this locality. Strike and dip could not be measured due to the limited areal extent and massive nature of the occurrence. It appears however, from the trend of the hills that the beds might be striking in a north or northwesterly direction. This limestone is near the base of the Windsor at its contact with older rocks of Ordovician age.

There are no indications as to the thickness of this limestone which is considered to be covered by light overburden. The area is easily accessible as many logging roads have been established throughout this part of Antigonish County.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
OH-8-1	42.21	2.50	1.35	52.51	0.69

OHIO RIVER (9-1)

This occurrence is located one mile south of the village of Ohio, on the east side of the Ohio River. Limestone outcrops on the side of a 75 foot high hill, north of and dipping towards a small brook at the bottom of the river valley. The location is 970 feet upstream from the road running between Ohio and Cross Roads Ohio. The road crosses this brook at a point 1.2 miles south of the bridge at Ohio village. (See Figure 7, page 30)

Description

It is a dark grey, hard, dense, argilloceous, fossiliferous, Windsor limestone. Bedding is well developed, striking N 80° E and dipping 54° SE. The limestone is thickly bedded at the bottom and more thinly bedded at the top. Its weathered surface varies from light brown to grey in color and is smooth.

The occurrence is 20 to 25 feet thick with very little overburden. It is underlain by a grey shale which, in turn, is underlain by a red siltstone. The area is easily accessible.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
OH-9-1	41.45	2.78	1.52	51.78	1.59

OHIO RIVER (11-1)

This occurrence is located on the south side of the road running between Cross Roads Ohio and Keppoch. Limestone can be found outcropping on a spruce covered knoll 25 feet high on the south side of a small brook which runs into the Ohio River between Hillcrest and Cross Roads Ohio. This location is in the northeastern part of a field on an abandoned farm located one mile northwest of the village of Hillcrest and 0.2 miles south of the Cross Roads Ohio-Keppoch road. (See Figure 7, page 30)

Description

It is a dark grey, hard, dense, bituminous, fine-grained, Windsor limestone. Bedding is well developed and blocky, striking N 32° W and dipping 23° SW. The weathered surface is dark grey and smooth. There are numerous pink veins, stringers and blebs of calcite throughout the outcrop.

The limestone is at least 20 feet thick with very little overburden. The area is not easily accessible.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
OH-11-1	39.15	5.81	1.98	50.91	0.88

POMQUET RIVER AREA

POMQUET RIVER (1-1) (1-2)

This occurrence is located on the upper section of the Pamquet River 1,170 feet north of where the road between Meadow Green and St. Andrews crosses the river. Dolomite outcrops in the river and on both sides of the river. Sample PR-1-2 was taken farther downstream on this river where the dolomite outcrops again. The beds are striking in the same direction as PR-1-1 but have a dip in the opposite direction. The latter occurrence is exposed in the river and in a 30 foot high embankment. (See Figure 6, page 27)

Description

The material at both locations is a dark grey, very hard, compact, fine-grained, Windsor dolomite with a smooth, light brown weathered surface (Plate 17). The bedding



Plate 17. A 30-foot thick bed of Windsor dolomite outcropping along the Pomquet River, Antigonish County. (PR-1-1)



Plate 18. E Subzone, dolomitic limestone outcropping along the Southside Antigonish Harbour road. Antigonish County. (SR-1-1)

is well developed, striking N 54° W and dipping 23° NE. There is a large amount of minor shearing with fractures almost at right angles to the strike.

The dolomite is at least 25 to 30 feet thick with very little overburden. Total thickness could not be determined. Exposures can be traced along the river for a distance of 500 feet. An overlying limestone conglomerate was observed.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
PR-1-1	44.20	3.87	4.74	29.80	17.50
PR-1-2	44.40	3.08	4.70	32.10	16.20

SOUTH RIVER STATION AREA

SOUTH RIVER STATION (1-1)

This occurrence of dolomitic limestone is located on the road between Lower South River and Southside Antigonish Harbour at South River Station. It outcrops in a 12 foot embankment north of the railway track along the northwest side of this road. The outcrop extends 125 feet along the side of the road. (See Figure 5, page 15)

Description

It is a grey, hard, dense, medium-grained, dolomitic, Windsor limestone. The weathered surface is light brown and the bedding is well developed, with two definite fracture patterns striking N 70° W and dipping 82° NE, and N 21° E and dipping 53° NW (Plate 18). Secondary calcite can be found along the fracture planes. There are also small calcite stringers. The limestone contains small amounts of manganiferous material.

The overburden is approximately 2 feet thick in the vicinity of the outcrop. The limestone is at least 10 feet thick with no indication as to the total thickness. The occurrence laterally does not appear to be very extensive.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
SR-1-1	42.50	5.24	2.95	36.30	12.50

SOUTH RIVER STATION (2-1)

This occurrence is located on the west side of the road between South River Station and Southside Antigonish Harbour, 0.4 miles northeast of SR-1-1. Limestone is found outcropping in a mound approximately 50 feet west of the road. This mound parallels the road, trends N 25° E and is approximately 20 feet high. (See Figure 5, page 15)

Description

This dolomitic limestone is brown, hard, granular, slightly porous, massive and belongs to the Windsor Group. The weathered surface is light brown and rough. Bedding is not visible due to the massive nature of the limestone. A few vugs filled with calcite crystals were noted. This is an E Subzone limestone.

Similar limestone outcrops in an open field approximately 1,000 feet southwest of the mound described above.

The surrounding area is hilly, only lightly wooded, and is easily accessible by road.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
SR-2-1	42.00	2.54	1.57	47.40	5.47

SOUTHSIDE ANTIGONISH HARBOUR AREA

SOUTHSIDE ANTIGONISH HARBOUR (1-1)

This occurrence is located along the east shore of Antigonish Harbour at Southside Antigonish Harbour. The limestone outcrops along the base of a 6 foot embankment near the shore, 0.3 miles due west of the main road at Southside Antigonish Harbour. (See Figure 5, page 15)

Description

This occurrence is a brownish grey, hard, dense, medium-grained, Windsor limestone. The bedding is thinly laminated and well developed, striking N 66° W and dipping 25° NE. The weathered surface is yellowish brown. The limestone has numerous small fractures throughout the outcrop.

Approximately 4 feet of overburden covers the limestone along the shore, but the thickness becomes greater inland. Thickness of the limestone could not be determined but is probably not great.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
SAH-1-1	40.50	7.72	3.42	43.20	4.62

SOUTHSIDE ANTIGONISH HARBOUR (2-1)

This occurrence is located along the east shore of Antigonish Harbour at Southside Antigonish Harbour, outcropping 2,890 feet southwest of SAH-1-1. Limestone can



Plate 19. Southside Antigonish Harbour, Antigonish County. Shows outcrop of massive, B Subzone limestone along the east shore of Antigonish Harbour. (SAH-2-1)



Plate 20. Southside Antigonish Harbour, Antigonish County. Close-up of vuggy B Subzone limestone shown above. (SAH-2-1)

be traced along this shore for a distance of 750 feet and may also be seen outcropping along the shoreline of a small island just north of SAH (2-1). It outcrops in a bank ranging from 5 to 15 feet in height. (See Figure 5, page 15)

Description

The occurrence is a grey, hard, compact, massive, pitted, medium-grained, high calcium, fossiliferous, Windsor limestone belonging to the B Subzone. The bedding is very poorly developed (Plate 19). A light grey weathered and pitted surface is characteristic throughout the entire outcrop (Plate 20). For the most part any fossils that were present have been destroyed. This limestone is similar to the occurrence found at Irish Cove on Cape Breton Island but has a greater hardness and is more altered due to folding.

The outcrop appears to strike N 65° E and may dip almost vertically in some sections.

There is no indication from the shoreline as to the thickness of the limestone, but drilling carried out in 1951 on this occurrence proved it to have considerable tonnage. There is very little overburden.

The occurrence extends inland forming a hill trending back from the shoreline. An area up to 68 acres may be underlain by high quality limestone.

An access road has been established to this deposit, a working face has been exposed and several hundred tons of limestone have been produced for agriculture and industrial uses.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
SAH-2-1	43.60	0.73	0.35	55.25	0.55

SOUTHSIDE ANTIGONISH HARBOUR (3-1)

This occurrence is located on the north side of the road running between Antigonish Harbour and Pomquet Harbour. Limestone is found outcropping in an open field 2,035 feet northwest of an old saw mill at the eastern end of the road. This limestone has been quarried to a small extent by the farmers in the surrounding area for agricultural purposes (Plate 21). (See Figure 6, page 27)

Description

It is light brown to light grey in colour, hard, dense, medium-grained, Windsor limestone. The bedding is very poorly developed with a brownish grey, pitted, weathered surface. Extensive fracturing obscures the bedding (Plate 22). This is an E Subzone limestone and may be found outcropping in a small mound trending N 77° W. It does



Plate 21. Southside Antigonish Harbour, Antigonish County.
Small quarry in open field. (SAH-3-1)



Plate 22. Close-up of above. Antigonish
County. (SAH-3-1)



Plate 23. Southside Antigonish Harbour. E Subzone dolomite found at site of old sawmill near Pomquet, Antigonish County. (SAH-4-1)



Plate 24. Close-up of above dolomite, showing massive and fossiliferous nature. Antigonish County. (SAH-4-1)

not appear to be very extensive. Although there is very little overburden present, the total thickness could not be observed.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
SAH-3-1	42.60	3.42	3.14	42.90	6.89

SOUTHSIDE ANTIGONISH HARBOUR (4-1) (Diamond drilling)

This dolomite occurrence is located on the site of an old saw mill along the north side of the road running between Antigonish Harbour and Pomquet Harbour. It outcrops in a small quarry on the side of a 35 foot high hill (Plate 23). (See Figure 6, page 27)

Description

It is a light brown, hard, dense, medium-grained, massive, Windsor dolomite exhibiting a light brown, pitted surface due to weathering (Plate 24). The bedding, although very poorly developed, strikes N 63° W and dips 63° SW. This dolomite belongs to the E Subzone and is similar in appearance to SAH-3-1. Although it is much more dolomitic, this occurrence may be the extension of SAH-3-1.

The elevated area which is made up of this dolomite has a strike parallel to the outcrop and can be traced in a northwesterly direction for a distance of 1,200 feet.

There is very little overburden with dolomite being at least 20 to 25 feet thick. The area generally is considered to contain significant tonnages of limestone and dolomite.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
SAH-4-1	44.96	0.76	4.94	33.20	16.40

WEST RIVER AREA

WEST RIVER (1-1)

This occurrence outcrops on the east side of the West River, approximately one and one-quarter miles directly south of the town of Antigonish along the side of a 50 foot high embankment which slopes towards the river. Power lines cross the river at this point. (See Figure 5, page 15)

Description

The occurrence is a brown, hard, dense, medium-grained, siliceous Windsor limestone. The weathered surface is reddish brown and smooth. Bedding is not well

developed.

Because of the limited exposures, no strike or dip could be measured.

There is no indication as to the thickness of this limestone nor the depth of overburden.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
WR-1-1	39.20	7.16	3.93	42.70	4.47

WEST RIVER (2-1)

This occurrence is located south of the West River, 200 yards upstream in a small brook, a tributary of the West River. The limestone is found at brook level and in the stream bed. The area is approximately one-half mile northeast of WR-1-1 and is one mile southeast of the town of Antigonish. (See Figure 5, page 15)

Description

It is a dark grey, hard, dense, argillaceous, medium-grained, dolomitic, Windsor limestone. Bedding is well developed and blocky, striking N 18° E and dipping 21° SE. The weathered surface is brown to yellowish brown (iron staining) with a nodular surface. This is a D Subzone (Sage, 1954) limestone.

Very little of the limestone is exposed thus not permitting a determination of its thickness. The overburden is 7 to 8 feet thick. Diamond drilling will be necessary to determine the extent of this occurrence.

It outcrops in what appears to have been a gravel pit.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
WR-2-1	41.00	5.87	4.27	41.00	7.15

WILLIAMS POINT AREA

WILLIAMS POINT (1-1)

This high calcium limestone occurrence is located at Williams Point, approximately two miles east of the town of Antigonish. The limestone can be found completely encircling a granodiorite hill which is located immediately east of farming establishments on the west side of Williams Point. The limestone, in places, also covers the granodiorite at the top of the hill. This particular sample was taken from the west side of the hill on the property of Colin MacGillivray, 200 feet above sea level. (See Figure 5, page 15)

Description

This is a brownish grey, hard, dense, medium-grained, massive, fossiliferous, Windsor limestone belonging to the B Subzone. Bedding is very poorly developed and the weathered surface is rough and grey. The limestone contains fossil cavities.

The limestone shows a slight primary dip away from the granodiorite on all sides.

The limestone probably ranges between 30 and 60 feet in thickness. There is very little overburden near the top of the hill, but the thickness increases quite rapidly as the base of the hill is approached.

The area is mostly open and is readily accessible.

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
WP-1-1	43.50	0.60	0.61	55.20	0.36

WILLIAMS POINT (2-1) (Diamond drilling)

This sample was also taken from an elevated area at Williams Point which is located two miles east of Antigonish, at a point 0.5 miles southwest of WP-1-1. The limestone here outcrops along the flanks of a granodiorite hill, at an elevation of 250 feet above sea level. (See Figure 5, page 15)

Description

This high silica limestone is brownish grey, hard, slightly porous, medium-grained, massive, fossiliferous and belongs to the B Subzone of the Windsor Group. Bedding is very poorly developed and exhibits a rough and grey weathered surface (Plate 25). This sample contains numerous small fragments of granodiarite which give rise to a high silica content. Away from the granodiorite-limestone contact the limestone is very pure. Most of the fossils are very small and consist mainly of gastropods, brachiopods and Conularia planicostata. Some of the limestone is algal.

The limestone appears to be flat-lying with some lineation being found in certain sections of the outcrop, probably caused by weathering.

The occurrence in this area outcrops along the side of a granodiorite knoll. The limestone forms a thin covering which decreases away from the hill. Overburden increases greatly towards the base of this elevated area.

Drilling was done on this deposit in 1945 and is reported in the Novo Scotia Department of Mines Annual Report on Mines, 1945.

The area is readily accessible.



Plate 25. Massive, fossiliferous, B Subzone limestone found along the slopes of a granodiorite knoll at Williams Point, Antigonish County. (WP-2-1)



Plate 26. Churchville, Pictou County. Outcrop of massive, Windsor limestone located on the road between Churchville and Eureka. (Ch-2-1)

Analysis

Sample	L.O.I.(%)	SiO ₂ (%)	R ₂ O ₃ (%)	CaO(%)	MgO(%)
WP-2-1	37.30	13.40	1.37	47.70	0.30