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# Annual Report of Shellfish Toxicity Monitoring Program 1977

Hazen L. Boyd



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Fisheries and Marine Service  
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March 1978

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Les numéros 1-25 de cette série ont été publiés à titre de Records statistiques, Service des pêches et de la mer, par la Station biologique du Pacifique, Nanaimo (C.-B.). Le nom de la série a été modifié à partir du numéro 26.

Les Rapports statistiques ne sont pas préparés pour une vaste distribution et leur contenu ne doit pas être mentionné dans une publication sans autorisation écrite préalable de l'établissement auteur. Le titre exact paraît au haut du résumé de chaque rapport.

Fisheries and Marine Service

Data Report No. 767  
85

March 1978

Annual Report of  
Shellfish Toxicity Monitoring Program  
1977

by

Hazen L. Boyd

Inspection Division  
Fisheries and Marine Service  
Department of Fisheries and the Environment  
Halifax, Nova Scotia  
B3J 2S7

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P A R T I

SUMMARY OF 1977 SHELLFISH TOXICITY RECORDS

IN THE MARITIME PROVINCES

## A. INTRODUCTION

The Paralytic Shellfish Toxicity Monitoring Program for 1977 in the Maritime Provinces was continued in our three (3) phases of surveillance.

1. Surveillance of Shellfish Areas
2. Commercial Checks
3. Experimental and Special Samples

In Southern New Brunswick, Class II Shellfish areas, N.B. #14, N.B. #15, N.B. #16, and N.B. # 17 were closed to the taking of clams for all purposes at the beginning of the year, together with all Class III areas.

Toxicity scores at most regular sampling stations remained at consistent low levels and pronounced increases in toxicity were not experienced until about the middle of August; later, sharp increases occurred during the first part of September; at this time, scores in Volselfa at Ross Island Thoroughfare reached 5400 ug of toxin per 100 grams of shucked meat on the 26th of September; 2700 ug in Mya at Crow Harbour on the 19th of September; and 2500 ug in Mytilus at Lepreau Basin on the 13th of September.

Notification of closure effective the 16th of September 1977, of all Class II shellfish areas of Southern New Brunswick, was received by the laboratory on the same date. On the 24th of October, 1977, word was received that N.B. #15.1 was opened to the taking of clams; N.B. #10 and N.B. # 12 were closed

until the 26th of October, 1977, while N.B. #17 remained closed until the 23rd of November, 1977.

Shellfish areas N.B. #8, N.B. # 14, N.B. # 15, and N.B. # 16 were closed for the remainder of the year. Class III areas were closed to the taking of clams throughout 1977.

During the year, seven (7) additional sampling stations were enlisted to supplement our regular sampling stations. These included Scotchman's Cove and Sam Craig's Cove to represent N.B. #14, McCann's Cove and Bar Road to represent N.B. #15.1; Stuart Cove and Duck Cove to represent N.B. #16 and Northern Harbour to represent N.B. #17.

In the Eastern part of New Brunswick and Prince Edward Island, only the surveillance of commercial products were periodically carried out.

In Nova Scotia, all Class I shellfish areas were open to the taking of clams at the beginning of the year and toxicity remained at a low level at all sampling stations until the latter part of August. The pattern of scores in the shellfish area of the Western section of the province was similar to those of New Brunswick. Centreville, a key station for Nova Scotia, had a maximum score in VolSELLa of 6400 ug of toxin on the 28th of September, 1977; while Mya had a maximum score of 330 ug of toxin at Joggins on the 15th of September, 1977.

Notification of closure of N.B. # 18 was received on the 12th of September, 1977, thus closing this area to the taking of clams for all purposes. On the 18th of October, 1977, word was received that that portion of the Annapolis Basin within the

County of Annapolis was opened to the taking of clams and on the 28th of October, 1977, the remaining part of the Annapolis Basin was also opened to the taking of clams, when toxicity scores receded to safe levels.

While P.S.P. levels would be considered on a lower plane during 1977, poisonings of individuals did take place at Grand Manan, N.B., at Florenceville, N.B. and at Port George, N.S. Case histories of these incidences may be found in Part VI of this publication.

In New Brunswick, it would appear that all clams causing the Paralytic Shellfish Poisonings were taken from Class III shellfish areas. In Nova Scotia, poisonings were caused from mussels harvested from a buoy that drifted into the Port George area.

The weather pattern during the year would be considered near normal, however, the area has been experiencing extremes of rains and even hail at unusual times.

The "Annual Report of Shellfish Toxicity Monitoring Program 1977" is the thirty-sixth (36th) in the series of Annual Summaries.

## B. WORK SHARING

The Department of Fisheries and Environment, Field Service Branch, Inspection Division, is indebted to:

Microbiology Division,  
Research Laboratories, H.P.B.  
Dept. National Health & Welfare,  
Ottawa, Ontario, K1A 0L2

who carried out bioassays on the extracts prepared and forwarded to them by various Fish Inspection Laboratories of the Maritime Region.

As in the past, the Department of National Health & Welfare also acted as consultants on matters pertaining to the closings and openings of the various shellfish areas and to the control agencies on problems relating to shellfish toxicity in general.

The various types of samples that were submitted for bioassays by the Fish Inspection Laboratories of the Maritime Provinces were supplied by the following divisions of the Federal Government.

Conservation and Protection Division,  
Fisheries and Environment

Field Staff Inspection Division,  
Fisheries and Environment

Fish Inspection Laboratories  
Inspection Division  
Fisheries and Environment

## FEATURES OF 1977

## 1. Management and Surveillance of the Bay of Fundy Paralytic Shellfish Poison Program.

Scheme of Control - The scheme for handling the Bay of Fundy Paralytic Shellfish Poison Problem was followed during 1977 to safeguard the general public and the shellfish industry.

During the year, several sampling schedules were issued to the Conservation and Protection Branch at St. Andrews, N.B. in order to have appropriate numbers of scores for management appraisal.

Samplings were adequate to assess trends and levels of toxicity in the various areas and classes of New Brunswick. It may be noted from Table I for the years 1976 - 1977, samplings of Class II areas increased from 126 to 238; the number of toxic samples decreased from 83.3% to 65.97%, while the number of samples exceeding the class limit decreased from 31.7% to 27.31%.

In Nova Scotia, Table II, the number of samplings for Class I areas were 161 and 169; the number of toxic samples were 19.3% and 33.1%; while the number of samples over the class limit were 6.9% and 5.3% for 1976 and 1977 respectively.

Ministerial Orders in New Brunswick - At the beginning of 1977, Class I shellfish areas of New Brunswick were open to the taking of clams. Class II shellfish areas, N.B. # 14, N.B. # 15 (L'Etete), N.B. # 16, N.B. # 17 were closed, together with all Class III areas.

Changes in the toxicity of shellfish at the various

sampling stations were not great during the year and it was not until the 16th of September, 1977, that word was received that all Class II areas were closed due to the rapid increase of toxicity in shellfish at our Key Stations.

These scores decreased quite readily and on the 24th of October, 1977, word was received that shellfish area N.B. # 15.1 was opened; on the 26th of October, 1977, N.B. # 10 and N.B. # 12 and on the 23rd of November, 1977, N.B. # 17 were opened.

Shellfish areas N.B. # 8, N.B. # 14, N.B. #15, N.B. # 16, together with all Class III areas, were closed for the remainder of the year.

Ministerial Orders of Nova Scotia - In Nova Scotia, all Class I shellfish areas were open to the taking of clams for all purposes at the beginning of the year.

Slightly after increases occurred in Southern New Brunswick toxicity scores began to rise in Nova Scotia and on the 12th of September, 1977, shellfish area N.S. # 18 was closed. This was reopened again as follows: on the 18th of October, the Annapolis County section of the Basin was opened while the remaining part, that is, the Digby County section, remained closed until the 28th of October, 1977.

The Bay of Fundy is permanently closed to the taking of mussels in New Brunswick and Nova Scotia. These may be harvested by special permit for canning purposes only. Scores pertaining to P.S.P. must be at satisfactory low levels before permits are issued.

## SAMPLING STATIONS OF NEW BRUNSWICK

## Southern New Brunswick

This section of the province is serviced by the Fish Inspection Laboratory at Black's Harbour, N.B.

Monitoring of the various shellfish areas was carried out by the sampling of two (2) Key and four (4) regular shellfish sampling stations. During the year, seven (7) auxiliary sampling stations were enlisted to assist management in the control program.

Lepreau Basin and Crow Harbour, our Key stations, were sampled throughout the year, together with L'Etete and Ross Island Thoroughfare.

Lepreau Harbour and Pocologan were sampled weekly from the 5th of June, 1977, to the 24th of October, 1977.

Auxiliary sampling stations were enlisted during the year to establish levels for the opening of certain shellfish areas. In N.B. #14, samplings were carried out at Scotchman's Cove and Sam Craig's Cove from April 21st, until the 19th of December, 1977.

In N.B. # 15.1, McCann's Cove and Bar Road were employed from the 1st of June until the 18th of October, 1977.

In N.B. # 16, Stuart Cove and Duck Cove were utilized from the 25th of March until the 30th of November, 1977, and from the 12th of April until the 29th of November, 1977, respectively.

In N.B. # 17, Northern Harbour was sampled from the 25th of March until the 7th of November, 1977.

The shellfish Mya was employed at Lepreau Basin, Lepreau

Harbour, Crow Harbour, Pocologan, L'Etete and Ross Island Thoroughfare. Mytilus and VolSELLa were employed also at Lepreau Basin and Ross Island Thoroughfare respectively. Mya was employed at all auxiliary sampling stations enlisted during the year.

The toxicity scores in the shellfish Mya were above the class limit at the beginning of the year at L'Etete. These declined to below class limits during May, 1977. Pronounced increases were recorded at approximately the first part of September, 1977 and scores increased very rapidly at all regular sampling stations at this time.

During the year, a grand total of four hundred and twenty-seven (427) samples of the various shellfishes were extracted for toxin in 1977 in the P.S.P. surveillance program. There were two hundred and thirty-eight (238) from Class II areas and one hundred and eighty-nine (189) from Class III areas.

Class II shellfish areas had one hundred and fifty-seven (157) or 65.97% of the samples toxic while sixty-five (65) or 27.31% of these were above Class II limits.

Class III shellfish areas had one hundred and eighty (180) or 95.24% of the samples toxic while sixty-eight (68) or 35.98% of these were above Class III limits.

The maxima scores reached in the various species of shellfish sampled in the P.S.P. surveillance program at our regular sampling stations were as follows:

<u>Date Taken</u>	<u>Species</u>	<u>Location</u>	<u>Score of toxin per 100 grams</u>
September 26	<u>Volselfa</u>	Ross Island Thoroughfare	5400 ug
September 26	<u>Mya</u>	Ross Island Thoroughfare	3000 ug
September 13	<u>Mytilus</u>	Lepreau Basin	2500 ug

The complete list of the toxicity scores for the various shellfish taken at the regular sampling stations of Southern New Brunswick may be found in Part II of this report.

#### EASTERN NEW BRUNSWICK

The Eastern section of New Brunswick is serviced by the Fish Inspection Laboratory at Shediac, N.B.

The surveillance of the shellfish growing areas of this district was not carried out since the presence of the dinoflagellate Gonyaulax tamarensis has never been established in the Northumberland Strait waters of the Gulf of St. Lawrence.

#### NORTHERN NEW BRUNSWICK

The Northern section of New Brunswick is serviced by the Fish Inspection Laboratory at Shippegan, N.B.

Regular shellfish sampling stations have not been established in this district since the presence of the causitive agent of Paralytic Shellfish Poison has not been confirmed.

## SAMPLING STATIONS OF NOVA SCOTIA

## CENTRAL NOVA SCOTIA

The Central section of Nova Scotia is serviced by the Fish Inspection Laboratory at Halifax, Nova Scotia.

A total of thirteen (13) samples were extracted from the shellfish Mya. Seven (7) of these were from regular sampling stations and six (6) from miscellaneous stations. All samples were found to have scores of less than 34 ug of toxin per 100 grams.

## WESTERN NOVA SCOTIA

The Western section of Nova Scotia is serviced by the Fish Inspection Laboratory at Yarmouth, Nova Scotia.

Monitoring of the various shellfish areas was carried out at the Key Station, Centreville and at seven (7) regular sampling stations. Centreville was sampled throughout the year while Joggins was sampled from the 7th of June to the 5th of December, 1977; Upper Clements from the 2nd of August to the 5th of December; Belliveau Cove from the 13th of September to the 6th of October; Deep Brook, Clements Port and Port Wade from the 15th of September to the 5th of December; while Margaretsville was sampled from the 20th of September to the 5th of December, 1977.

The shellfish Volselfia (modiolus) was employed at Centreville and Margaretsville, Mya at Belliveau's Cove, Joggins, Deep Brook, Clementsport, Upper Clements and Port Wade.

At the beginning of the year, all sampling stations were below their class limits and remained so until the latter part of

August at Centreville, the first part of September at Joggins and mid-September at Deep Brook.

The maxima scores in Nova Scotia were not high and toxin reached 6400 ug in Volvella taken at Centreville on the 28th of September, and 330 ug in Mya taken at Joggins on the 15th of September, 1977. The above scores were from our regular sampling stations.

In Nova Scotia, there was a total of two hundred and thirty-four (234) samples taken for surveillance purposes in 1977.

One hundred and sixty-four (164) of these were from Class I areas of which fifty-four (54) or 33.0% were toxic and nine (9) or 5.3% exceeded class limits.

Seventy (70) samples were from Class III areas; of these, sixty-nine (69) or 98.6% were toxic and twenty-five (25) or 35.7% were above class limits.

The complete lists of toxicity scores in the various shellfishes taken at the different sampling stations in Nova Scotia may be found in Part III of this report.

## 2. Special Samples for Surveillance and Investigations:-

In Southern New Brunswick special samples were requested to assist management in assessing levels of toxicity in certain shellfish areas. In Nova Scotia, a similar program was followed.

Further details pertaining to scores, etc., recorded for these samples for the Provinces of New Brunswick and Nova Scotia may be found in Part IV of this report.

## 3. Commercial Samples:-

The laboratories of the Maritime Provinces carried out, as required for the control of P.S.P., samplings of representative lots of clams. These included shellstock, shucked meats, frozen-shucked meats, sliced clams and canned clams, both domestic and imported, that are subject to Gonyaulax tamareuses (excavata) the causitive agent of P.S.P.

A total of one hundred and five (105) commercial samples were extracted during our surveillance. The laboratory at Black's Harbour extracted seventy-eight (78); Shediac, eighteen (18); Charlottetown, two (2) and Yarmouth, seven (7).

For further details on the Commercial Products, please see Part V of this report.

#### 4. Special Chemical and Experimental Work:-

The experimental work commenced in 1975 on the chemical assay of Saxitoxin, one of the known causative toxins of P.S.P. from the dinoflagellate Gonyaulax, was continued during 1977 in a feasibility study to ascertain if the method, as postulated by Bates and Rapoport<sup>1</sup>, could be adapted to the chemical assays of our toxins here on the Atlantic coast as produced by the dinoflagellate Gonyaulax tamarensis (excavata). From the recent work of Oshima, Buckley, Alam and Shimizu<sup>2</sup>, the total number of Paralytic Shellfish Poisons from cultured Gonyaulax tamarensis has increased to seven (7).

Experimental work was carried out in the differences, if any, in the extractions of P.S.P. from Mya arenaria with 80% ethanol and Trichloroacetic acid.

During the first part of the summer of 1977, scores varied from 115 ug to 500 ug in the shellfish Mya at Crow Harbour, N.B. when this work was carried out. It was observed that measurements customarily carried out at 330 nm excitation and 380 nm emission during 1976 did not give perusual absorption readings. On scanning the excitation and emission wavelengths, it was found that the excitation absorption peak was down near the 300 nm wavelength level when emission was held at 380 nm. The recordings of the results of extractions could not be correlated with bioassays and it is felt that basic work must be investigated. This will include the chemistry of individual toxins excreted, animal change of the toxins and the species of dinoflagellates present in our waters.

REFERENCES

1. Chemical Assay of Saxitoxin, the Paralytic Shellfish Poison  
Hans A. Bates and Henry Rapoport  
J. Agric Food Chem. Vol. 23 No. 2 1975
2. Heterogeneity of Paralytic Shellfish Poisons. Three new  
toxins from cultured Gonyaulax tamarensis cells, Mya arenaria  
and Saxidomus giganteus  
Oshima, Buckley, Alam and Shimizu

#### 5. Paralytic Shellfish Poisonings:-

Although toxicity scores in shellfish in New Brunswick would be considered only moderate, while those of Nova Scotia would be termed low, nevertheless, nine (9) poisonings did occur in the Maritimes; seven (7) in New Brunswick and two (2) in Nova Scotia.

After P.S.P. increases in Mya during September, 1977, word was received from one of our Fishery Officers at Grand Manan, N.B. on the 14th of September, that six (6) persons had been subjected to P.S.P. toxins on the 9th of September, 1977, after eating clams taken at Ross Island Thoroughfare, N.B.

Case histories were prepared on the 15th of September, 1977, by personal interviews of five (5) of the persons involved and by phone on the sixth. One person was hospitalized and two (2) others received medical treatment on the following day. All six (6) people ate clams from the same source, Ross Island Thoroughfare, our sampling station for shellfish area N.B. # 18. From routine scores we were able to extrapolate quite accurately toxicity values for the Mya that were injected on Friday, the 9th of September, 1977. The estimated micrograms of toxin consumed was calculated in accordance to the number of shellfish eaten by the individuals concerned.

On the 23rd of September, 1977, two (2) persons were subjected to P.S.P. toxins after consuming steamed clams at Florenceville, N.B. Medical attention was required for one of the persons involved and the incident was reported to us by the

District Medical Health Officer at Fredericton, N.B. A total of twelve (12) persons were present at the steamed clam dinner and consumed clams. Ten (10) of these persons had no symptoms of P.S.P. poisoning.

NOVA SCOTIA:-

Although P.S.P. scores would be considered on a low level in Nova Scotia, nevertheless, three (3) persons were subjected to P.S.P. toxins on the 23rd of October, 1977, after mussels were picked from a buoy which had washed ashore at Port George, N.S.

Two (2) of the individuals concerned were hospitalized while the third was not affected.

Two (2) special samples of Mytilus were taken at Port George by a fishery officer; one on the 28th of October, which had a score of 40 ug of toxin while the other, on the 3rd of November, 1977, had a score of 54 ug.

Markings on the buoy could not be traced to ownership through checking the master file here and further help in tracing the buoy was solicited from the Maine Department of Marine Resources at Boothbay Harbour, Maine. Ownership was traced to a fisherman at York, Maine, an area adjacent to the Maine-New Hampshire border.

For detailed information pertaining to each case history prepared, please see Part VI of this report.

## 6. Summary of Toxicity Data:

(a) The number of samples extracted by the various Fish Inspection Laboratories for P.S.P. in the Maritime Region for bioassays, together with chemical assay determinations, were as follows:

	Blacks Harbour	Shediac	Charlottetown	Halifax	Yarmouth
Surveillance	427			7	218
Special Surveillance	59			6	3
Commercial	78	18	2	4	7
Special Chemical Experimental Work	127				
Miscellaneous	<u>47</u>	<u>          </u>	<u>          </u>	<u>16</u>	<u>51</u>
	738	18	2	33	279

GRAND TOTAL OF CHEMICAL AND BIOASSAY :  
DETERMINATIONS FOR P.S.P.

1070

(b) Tables I and II show comparisons of the years 1976 and 1977 for New Brunswick and Nova Scotia respectively.

These include the following:

- (1) The sampling stations, the kind of shellstock extracted from each station and the number of samples involved.
- (2) The number of samples found to be toxic.
- (3) The number of samples exceeding respective class limits.

7. MAPS AND LOCATIONS OF THE SAMPLING STATIONS IN THE MARITIME PROVINCES

Maps showing the various locations of the regular sampling stations of New Brunswick and Nova Scotia, together with the locations of miscellaneous sampling stations, are included for easy reference.

Please see pages 21 and 22.

TABLE I

## SUMMARY OF SOUTHERN NEW BRUNSWICK TOXICITY DATA FOR YEAR 1976 AND 1977

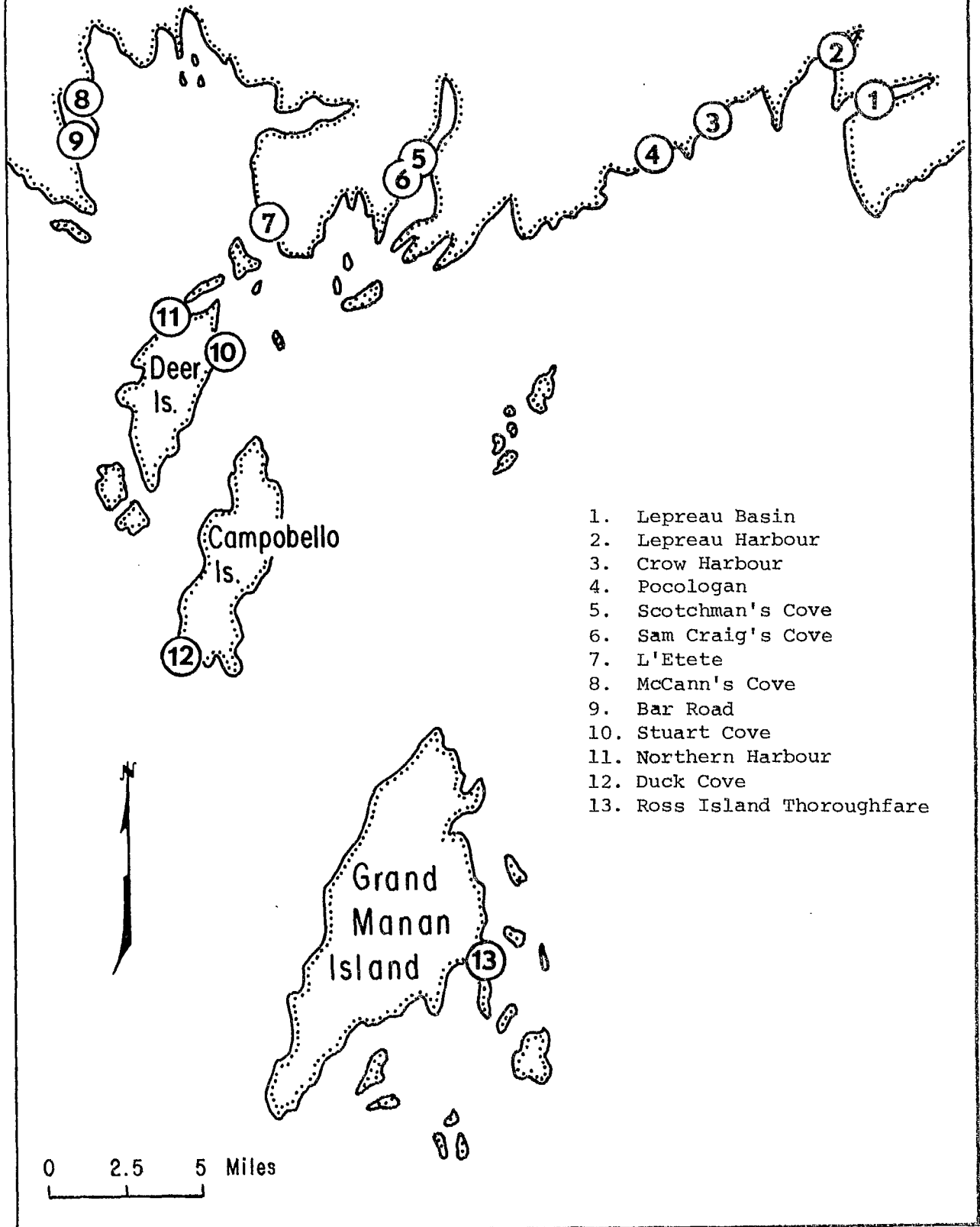
SAMPLING STATION	# OF SAMPLES EXTRACTED		# OF TOXIC SAMPLES		# OF SAMPLES OVER THE CLASS LIMIT	
	1976	1977	1976	1977	1976	1977
CLASS II Class Limit 80 ug.						
Lepreau Harbour (Mya)	20	20	20	11	3	3
Pocologan (Mya)	21	21	20	13	4	3
L'Etete (Mya)	27	26	27	25	20	18
Bar Road (Mya)	-	22	-	4	-	0
Duck Cove (Mya)	-	25	-	23	-	9
McCann Cove (Mya)	-	22	-	12	-	0
Northern Harbour (Mya)	-	30	-	8	-	2
Sam Craig's Cove (Mya)	-	20	-	20	-	13
Scotchman's Cove (Mya)	-	19	-	19	-	12
Stuart Cove (Mya)	-	33	-	22	-	5
Miscellaneous	58	-	38	-	13	-
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Totals:	126	238	105	157	40	65
			83.3%	65.97%	31.7%	27.31%
CLASS III Class Limit 160 ug.						
Crow Harbour (Mya)	42	41	42	41	35	28
Lepreau Basin (Mya)	43	33	42	33	12	12
Lepreau Basin (Mytilus)	39	29	39	25	12	7
Ross Island Thoroughfare (Mya)	42	43	41	40	2	7
Ross Island Thoroughfare (Volsella)	42	43	42	41	13	14
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Totals:	208	189	206	180	74	68
			99%	95.24%	35.6%	35.98%
GRAND TOTALS OF CLASS II AND CLASS III AREAS						
	334	427	311	337	114	133
			93.1%	78.92%	34.1%	31.14%

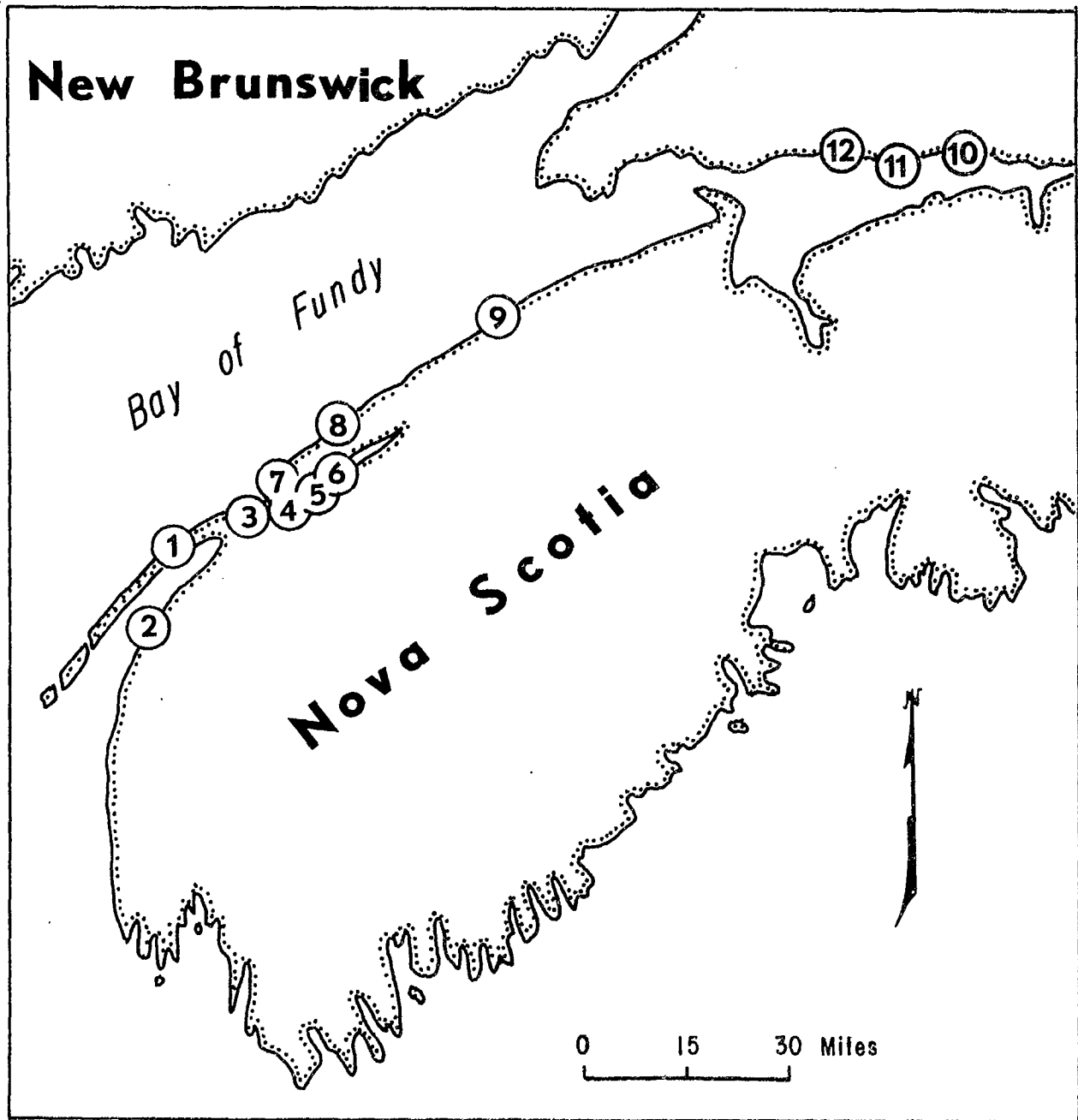
TABLE II

SUMMARY OF NOVA SCOTIA TOXICITY DATA FOR YEARS 1976 AND 1977

SAMPLING STATION	# OF SAMPLES EXTRACTED		# OF TOXIC SAMPLES		# OF SAMPLES OVER THE CLASS LIMIT	
	1976	1977	1976	1977	1976	1977
<u>CLASS I AREAS</u> Class Limit 80 ug.						
Belliveau Cove ( <u>Mya</u> )	14	7	0	0	0	0
Joggins ( <u>Mya</u> )	45	33	18	30	5	6
Deep Brook ( <u>Mya</u> )	16	26	6	17	3	2
Clementsport ( <u>Mya</u> )	12	26	2	1	0	0
Upper Clements ( <u>Mya</u> )	12	28	0	1	0	0
Port Wade ( <u>Mya</u> )	12	26	1	2	0	0
Five Islands ( <u>Mya</u> )	18	3	1	0	0	0
Economy ( <u>Mya</u> )	12	2	0	0	0	0
Miscellaneous	20	13	3	3	3	1
Totals	161	164	31	54	11	9
			19.3%	33.0%	6.9%	5.4%
<u>CLASS III AREAS</u> Class Limit 160 ug.						
Centreville ( <u>VolSELLA</u> )	55	49	51	49	17	16
Centreville ( <u>Mytilus</u> )	--	4	--	4	--	2
Margaretsville ( <u>Mytilus</u> )	--	17	--	16	--	7
Margaretsville ( <u>VolSELLA</u> )	15	--	5	--	0	--
Parkers Cove ( <u>VolSELLA</u> )	22	--	19	--	3	--
Parkers Cove ( <u>Mytilus</u> )	9	--	5	--	1	--
Totals:	101	70	80	69	21	25
			79%	98.6%	20.8%	35.7%
GRAND TOTALS OF CLASS I & CLASS III AREAS	262	234	111	123	32	34
			42.4%	52.5%	12.2%	14.5%

# Charlotte Co. N.B.





- |                     |                   |
|---------------------|-------------------|
| 1. Centreville      | 7. Port Wade      |
| 2. Belliveau's Cove | 8. Parker's Cove  |
| 3. Joggins          | 9. Margaretsville |
| 4. Deep Brook       | 10. Bass River    |
| 5. Clementsport     | 11. Economy       |
| 6. Upper Clements   | 12. Five Islands  |

P A R T     I I

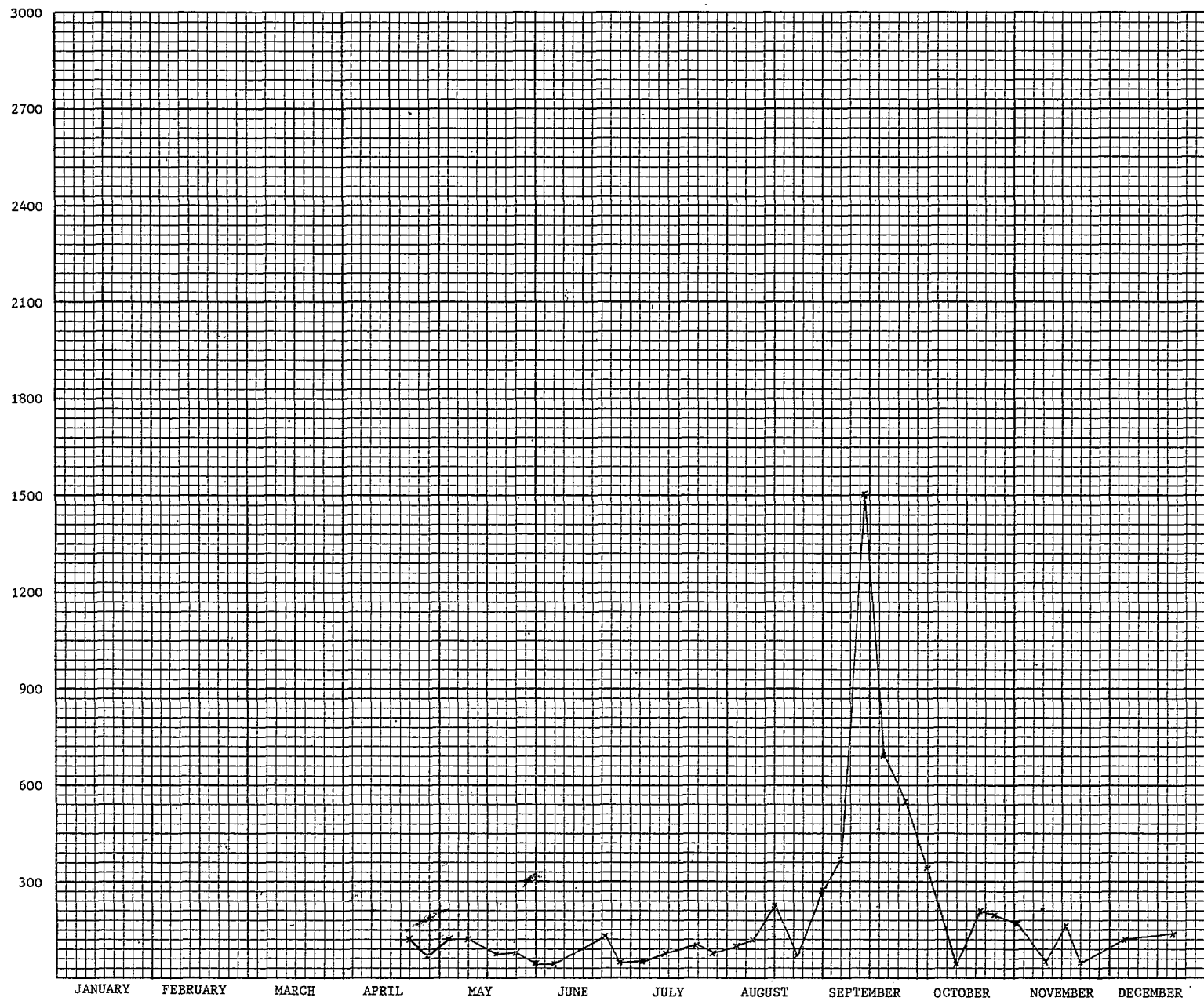
SOUTHERN   NEW   BRUNSWICK

RECORDS   ARRANGED   BY   AREAS   AND   SPECIES

LEPREAU BASIN - MYA

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
April 21	120
April 28	66
May 3	120
May 9	120
May 18	74
May 24	80
May 30	52
June 6	51
June 22	130
June 27	54
July 4	59
July 11	77
July 20	100
July 26	74
August 3	100
August 8	120
August 15	230
August 22	66
August 30	270
September 6	370
September 13	1500
September 19	690
September 26	550
October 3	340
October 12	37
October 19	210
October 24	200
November 1	170
November 7	58
November 16	160
November 21	45
December 5	120
December 20	140

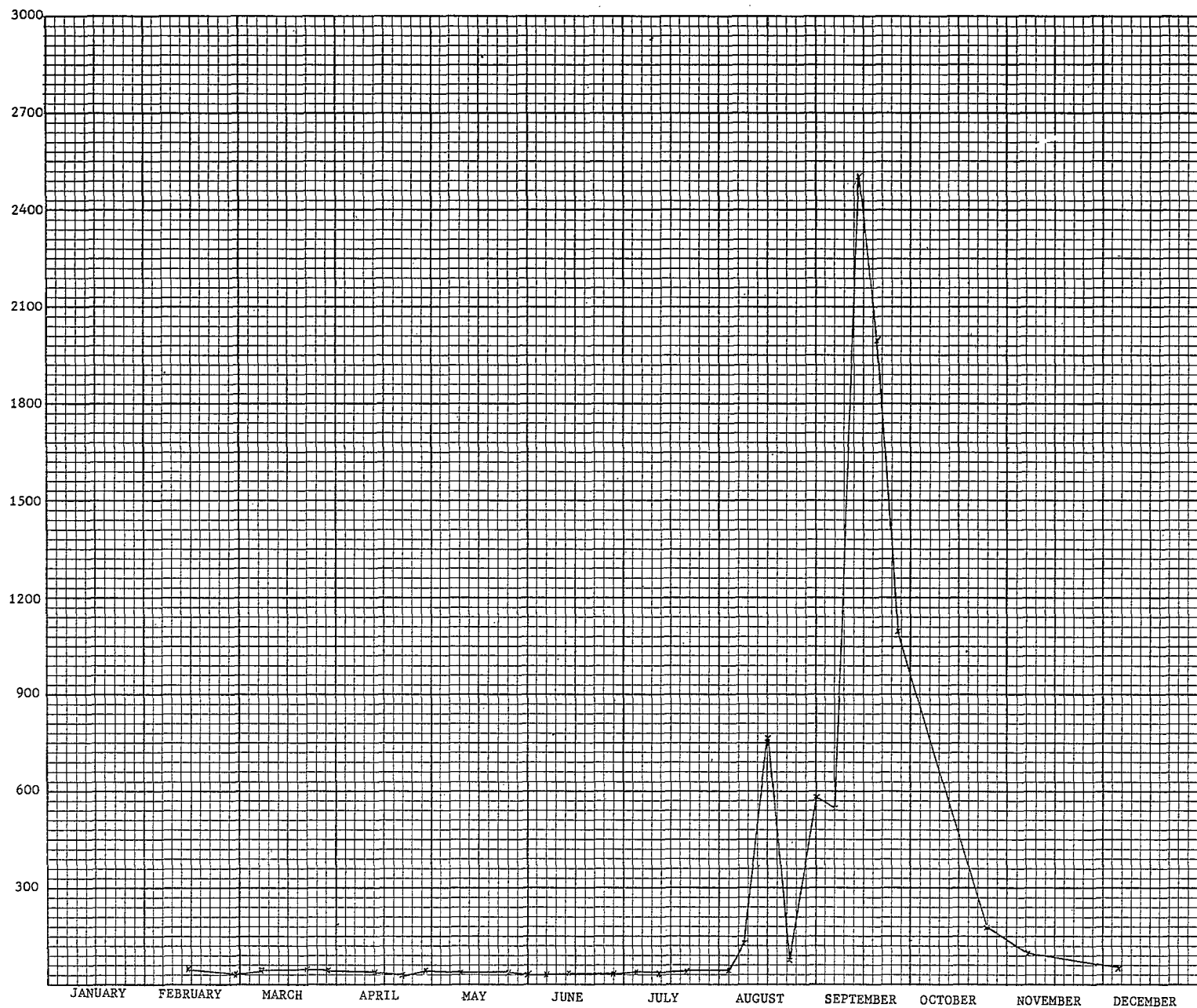
LEPREAU BASIN - MYA



LEPREAU BASIN - Mytilus

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
February 14	53
February 28	36
March 7	45
March 21	45
March 28	43
April 12	38
April 21	<34
April 28	44
May 9	40
May 24	41
May 30	<34
June 4	40
June 6	<34
June 13	37
June 27	<34
July 11	36
July 20	41
August 3	44
August 8	130
August 15	770
August 22	77
August 30	590
September 6	550
September 13	2500
September 19	2000
September 26	1100
October 24	180
November 7	96
December 5	52

LEPREAU BASIN - MYTILUS



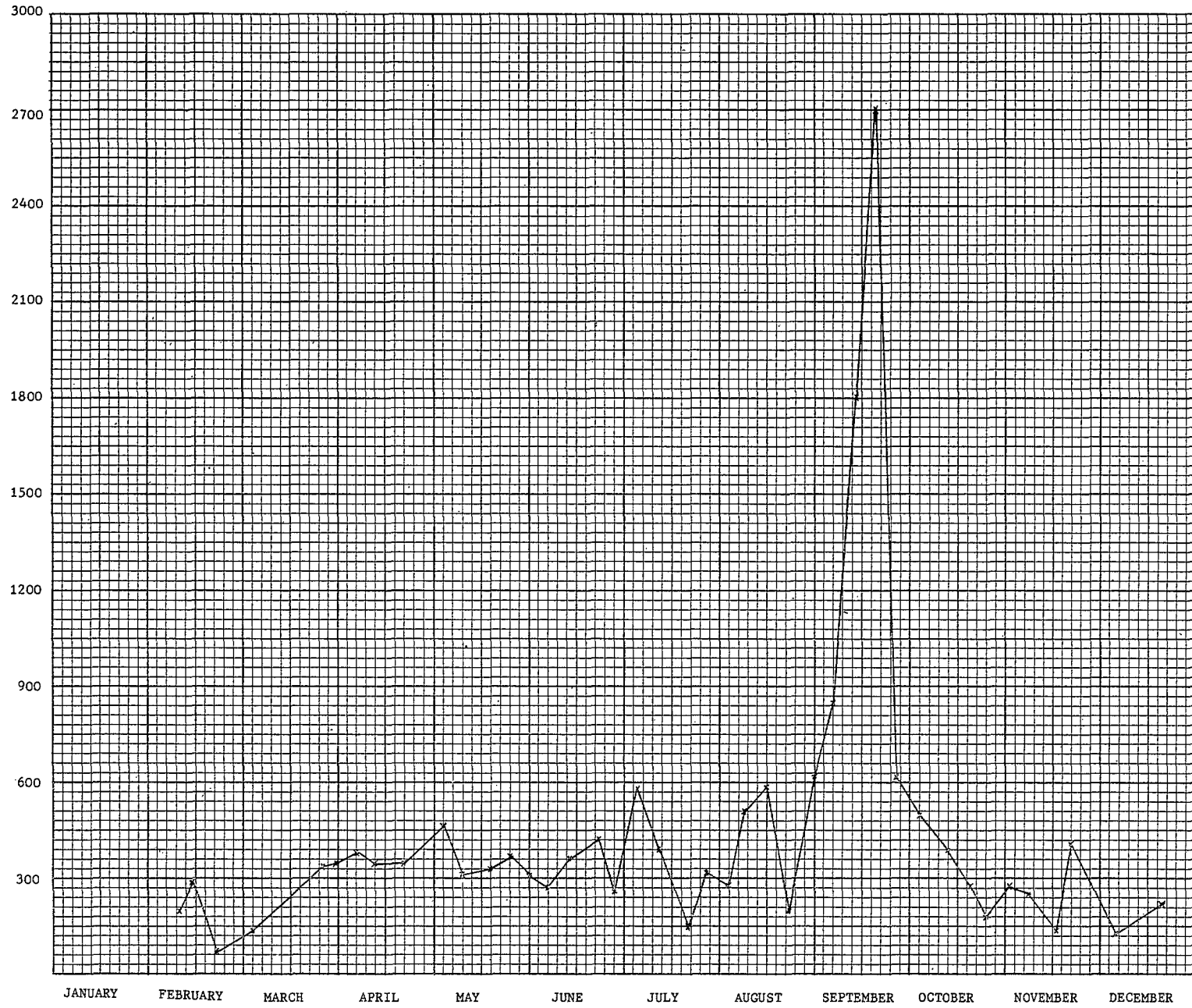
LEPREAU HARBOUR - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
June 6	37
June 22	<34
June 27	<34
July 4	<34
July 11	<34
July 20	37
July 26	<34
August 3	<34
August 8	54
August 15	<34
August 22	<34
August 30	89
September 6	51
September 13	580
September 19	80
September 26	490
October 3	44
October 12	40
October 19	<34
October 24	37

CROW HARBOUR - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
February 10	200
February 14	290
February 22	68
March 3	140
March 25	340
March 29	350
April 6	380
April 12	350
April 21	348
May 3	460
May 9	320
May 18	330
May 24	380
May 30	310
June 6	270
June 13	360
June 22	420
June 27	260
July 4	580
July 11	390
July 20	150
July 26	320
August 3	280
August 8	510
August 15	580
August 22	200
August 30	670
September 6	850
September 13	1800
September 19	2700
September 26	620
October 3	500
October 12	390
October 19	280
October 24	180
November 1	280
November 7	250
November 16	140
November 21	410
December 5	130
December 20	220

CROW HARBOUR - MYA



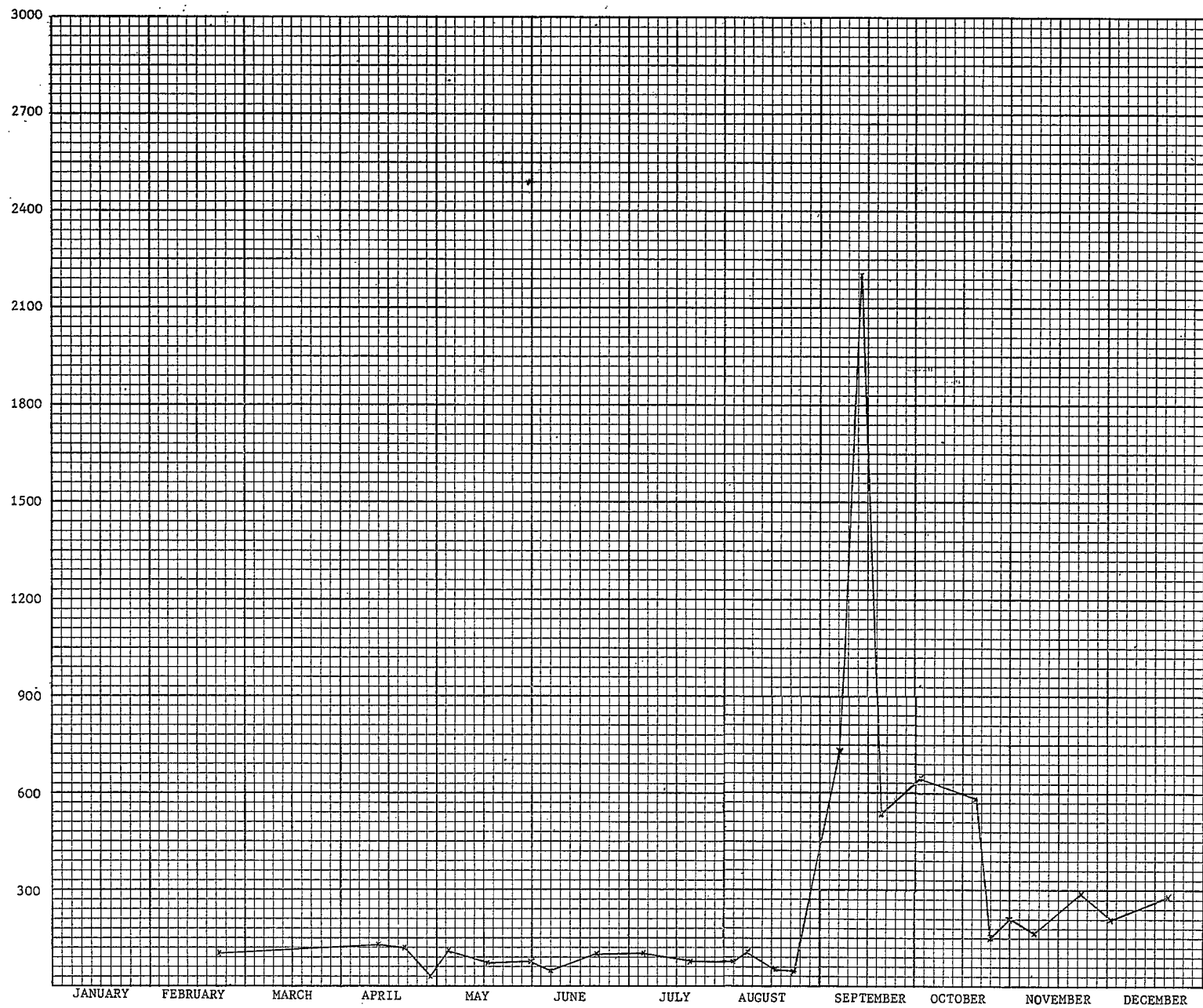
POCOLOGAN - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
June 6	37
June 13	<34
June 22	43
June 27	47
July 4	36
July 11	<34
July 20	36
July 26	<34
August 3	<34
August 8	58
August 15	<34
August 22	<34
August 30	81
September 6	40
September 13	640
September 19	130
September 26	51
October 3	41
October 12	<34
October 19	<34
October 24	36

L'ETETE - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
February 22	100
April 12	130
April 20	120
April 28	<34
May 4	110
May 16	71
May 30	77
June 6	54
June 20	100
July 5	98
July 19	74
August 3	76
August 8	100
August 16	50
August 22	40
September 6	740
September 13	2200
September 19	540
October 2	650
October 19	280
October 24	150
October 31	220
November 8	160
November 22	290
December 1	210
December 19	280

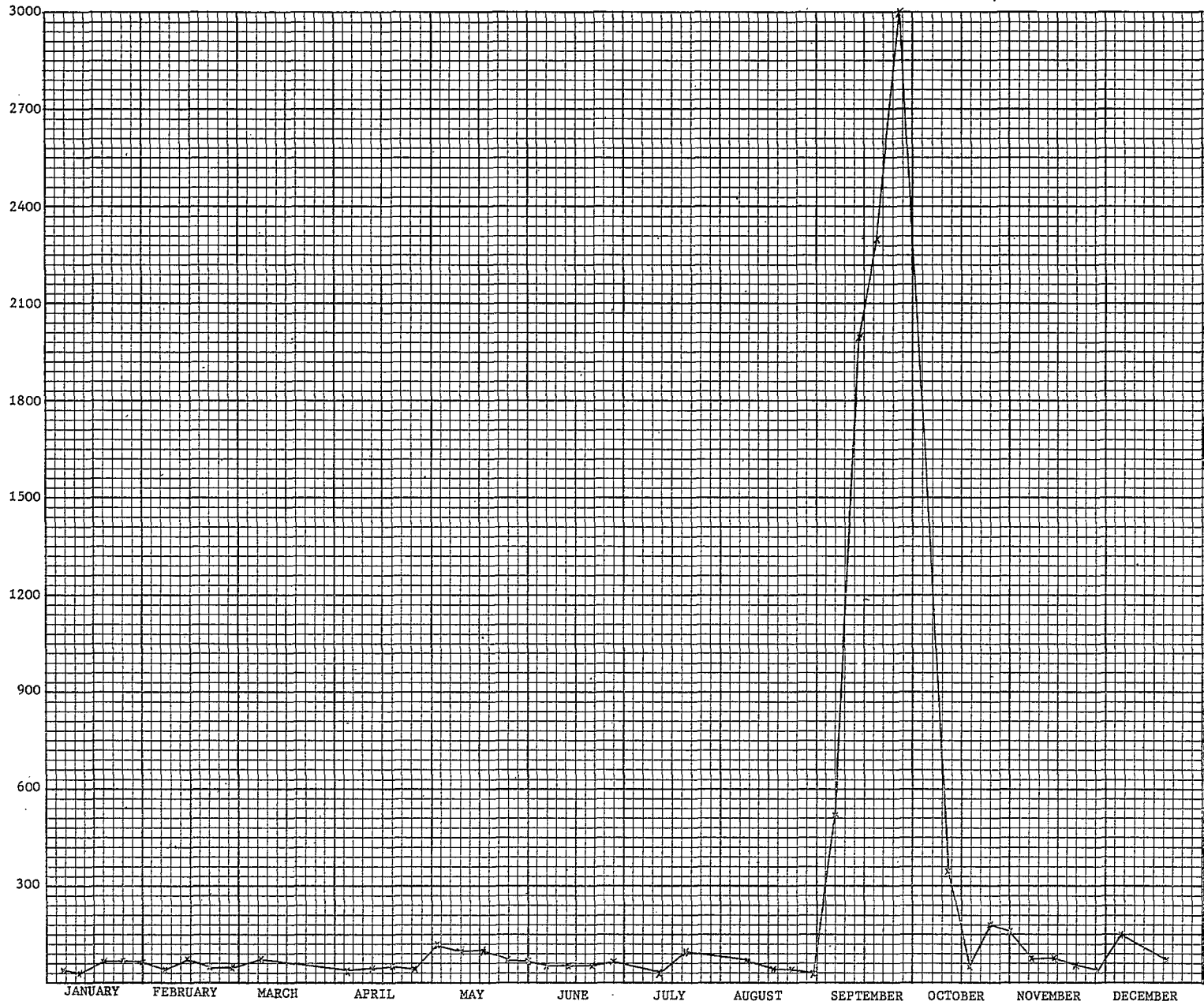
L'ETETE - MYA



ROSS ISLAND THOROUGHFARE - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
January 5	40
January 10	<34
January 18	62
January 24	64
January 31	61
February 7	47
February 14	110
February 21	53
February 28	50
March 7	72
April 4	62
April 12	48
April 18	57
April 25	43
May 2	120
May 9	98
May 16	100
May 24	71
May 30	67
June 6	57
June 13	57
June 20	59
June 27	62
July 11	<34
July 19	95
August 8	69
August 16	46
August 22	45
August 29	<34
September 6	520
September 13	2000
September 19	2300
September 26	3000
October 11	350
October 17	57
October 24	180
October 31	160
November 7	75
November 14	79
November 21	59
November 28	39
December 5	150
December 19	68

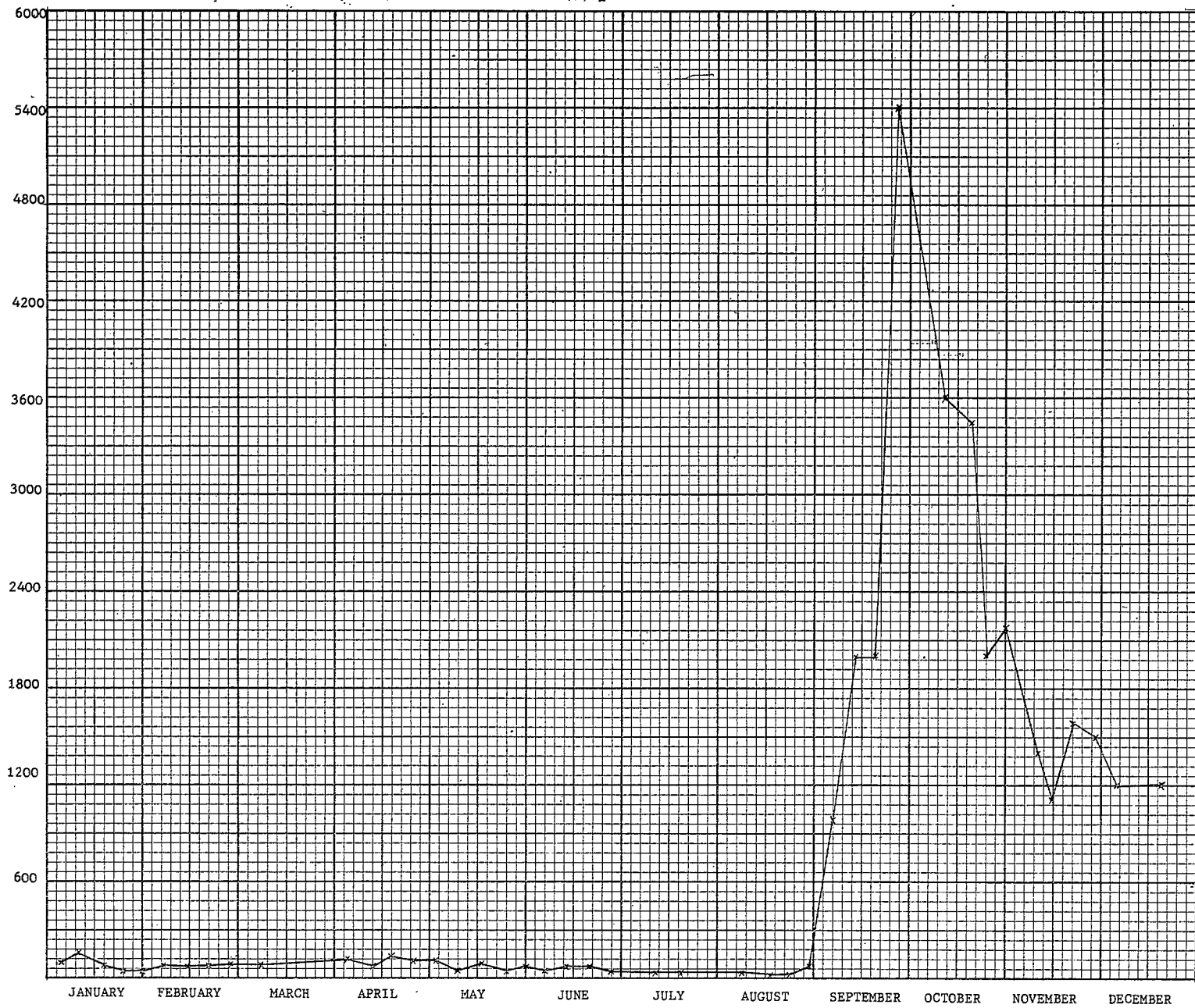
ROSS ISLAND THOROUGH FARE - MYA



ROSS ISLAND THOROUGHFARE - Volsella

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
January 5	92
January 10	150
January 18	71
January 24	55
January 31	57
February 7	74
February 14	68
February 21	77
February 28	95
March 7	67
April 4	120
April 12	67
April 18	126
April 25	110
May 2	110
May 9	48
May 16	90
May 24	57
May 30	74
June 6	57
June 13	72
June 20	64
June 27	55
July 11	44
July 19	41
August 8	48
August 16	<34
August 22	<34
August 29	74
September 6	1000
September 13	2000
September 19	2000
September 26	5400
October 11	3600
October 17	3450
October 24	2000
October 31	2200
November 7	1400
November 14	1100
November 21	1600
November 28	1500
December 5	1200
December 19	1200

ROSS ISLAND THOROUGH FARE  
VOLSELLA



P A R T     I I I

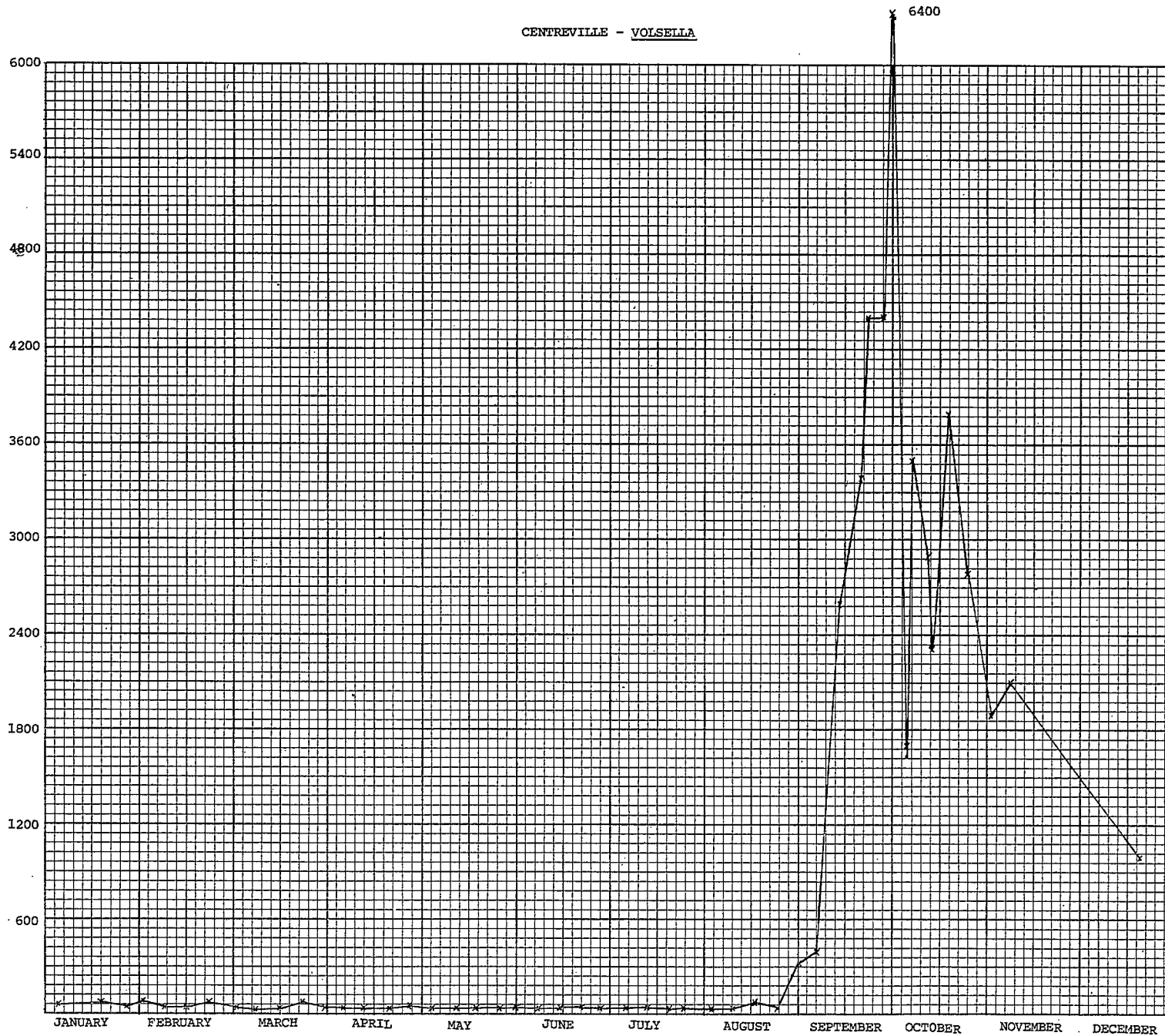
N O V A   S C O T I A

R E C O R D S   A R R A N G E D   B Y   A R E A S   A N D   S P E C I E S

CENTREVILLE VolSELLa

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
January 4	60
January 18	62
January 26	55
February 1	77
February 8	50
February 15	47
February 22	63
March 1	55
March 7	40
March 15	55
March 22	67
March 29	46
April 5	49
April 12	49
April 20	50
April 26	60
May 3	47
May 11	46
May 17	46
May 25	40
May 31	50
June 7	40
June 14	40
June 21	48
June 27	48
July 5	43
July 12	42
July 19	37
July 26	39
August 2	41
August 9	37
August 16	66
August 23	50
August 31	310
September 6	410
September 13	2600
September 20	3400
September 22	4400
September 27	4300
September 28	6400
October 4	1700
October 6	3500
October 11	2900
October 12	2300
October 17	3800
October 24	2800
November 1	1900
November 7	2100
December 19	990

CENTREVILLE - VOLSELLA



CENTREVILLE

MytilusDate Taken  
1977Toxicity in  
Micrograms

October	19
November	15
November	21
November	29

260
52
65
170

## BELLIVEAU COVE

MyaDate Taken  
1977Toxicity in  
Micrograms

September 13  
September 14  
September 20  
September 27  
September 28  
October 6  
October 6

<34  
<34  
<34  
<34  
<34  
<34  
<34

JOGGINS - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
June 7	36
August 8	<34
August 16	37
August 22	<34
August 29	38
September 6	170
September 13	210
September 15	330
September 20	190
September 22	300
September 27	220
September 28	120
September 29	140
September 30	110
October 3	83
October 4	63
October 6	83
October 6	110
October 7	90
October 12	64
October 13	77
October 14	91
October 17	70
October 18	45
October 19	41
October 24	60
October 25	52
October 26	Broken
October 30	47
November 8	58
November 15	36
November 21	48
November 29	47
December 5	38

DEEP BROOK - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
September 15	66
September 20	86
September 22	99
September 27	65
September 28	<34
September 29	58
September 30	62
October 3	40
October 4	43
October 6	46
October 6	41
October 7	<34
October 12	34
October 13	39
October 14	<34
October 17	36
October 18	36
October 19	36
October 24	36
October 25	<34
October 26	Broken
October 30	35
November 8	<34
November 15	<34
November 21	<34
November 29	<34
December 5	<34

CLEMENTSPORT - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
September 15	<34
September 20	<34
September 22	<34
September 27	<34
September 28	<34
September 30	<34
October 3	<34
October 4	<34
October 6	<34
October 6	<34
October 7	<34
October 11	<34
October 13	<34
October 14	<34
October 17	<34
October 18	<34
October 19	36
October 24	<34
October 25	<34
October 26	<34
October 30	<34
November 7	<34
November 14	<34
November 21	<34
November 29	<34
December 5	<34

UPPER CLEMENTS - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
August 2	<34
August 10	<34
September 15	<34
September 20	<34
September 22	<34
September 27	<34
September 28	<34
September 30	<34
October 3	<34
October 4	<34
October 6	<34
October 6	<34
October 7	<34
October 11	<34
October 13	<34
October 14	<34
October 17	<34
October 18	<34
October 19	36
October 25	<34
October 25	<34
October 26	<34
October 30	<34
November 7	<34
November 14	<34
November 21	<34
November 29	<34
December 5	<34

PORT WADE - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
September 15	<34
September 20	37
September 22	<34
September 27	<34
September 28	<34
September 30	<34
October 3	<34
October 4	<34
October 6	<34
October 6	<34
October 7	<34
October 11	<34
October 13	<34
October 14	<34
October 17	<34
October 18	<34
October 19	36
October 25	<34
October 25	<34
October 26	<34
October 30	<34
November 7	<34
November 14	<34
November 21	<34
November 29	<34
December 5	<34

MARGARETSVILLE - Mytilus

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
September 20	280
September 22	300
September 27	210
September 29	170
October 4	100
October 6	100
October 11	66
October 13	68
October 17	100
October 19	58
October 24	50
October 26	46
October 30	61
November 7	43
November 15	40
November 21	44
December 5	<34

## FIVE ISLANDS

Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
September 20	<34
October 19	<34
October 19	<34

## BASS RIVER, N.S.

Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
September 20	<34
September 27	<34

## ECONOMY

Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
September 20	<34
September 27	<34

P A R T IV (A)

SPECIAL SAMPLES FOR SURVEILLANCE

SCOTCHMAN'S COVE - Mya

N.B. 14

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
April 21	94
June 6	74
June 20	73
July 5	40
August 3	67
August 8	180
August 16	51
August 22	38
September 6	110
September 13	2500
September 19	1100
October 2	840
October 19	270
October 24	210
October 31	120
November 8	73
November 22	160
December 1	130
December 19	180

SAM CRAIG'S COVE - Mya

N.B. 14

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
April 21	40
June 6	110
June 20	100
July 5	74
July 19	69
August 3	51
August 8	90
August 16	48
August 22	45
September 6	40
September 13	3300
September 19	1300
October 2	710
October 19	210
October 24	280
November 8	110
October 31	130
November 22	140
December 1	220
December 19	310

BAR ROAD - Mya

N.B. 15.1

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
January 12	36
June 1	<34
June 7	<34
June 14	<34
June 21	<34
June 28	<34
July 5	<34
July 11	<34
July 19	<34
July 26	<34
August 3	<34
August 8	<34
August 16	<34
August 22	<34
August 30	<34
September 6	<34
September 13	41
September 20	37
September 26	<34
October 4	36
October 11	<34
October 18	<34

McCANN COVE - Mya

N.B. 15.1

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
January 12	<34
June 1	38
June 7	40
June 13	39
June 21	38
June 28	<34
July 5	44
July 11	38
July 19	38
July 26	<34
August 3	<34
August 8	<34
August 16	<34
August 22	<34
August 30	<34
September 6	36
September 13	36
September 20	37
September 26	37
October 4	36
October 11	<34
October 18	<34

STUART COVE - Mya N.B. 16

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
March 25	<34
March 29	<34
April 5	47
April 12	43
April 19	54
April 26	47
May 3	54
May 9	52
May 16	38
May 23	41
May 30	43
June 6	41
June 13	40
June 20	41
June 27	38
July 4	<34
July 11	<34
July 20	38
July 25	<34
August 17	<34
August 22	<34
August 29	<34
September 6	<34
September 16	680
September 19	490
September 26	230
October 3	200
October 11	79
October 18	110
October 31	54
November 7	54
November 14	<34
November 30	<34

DUCK COVE - Mya N.B. 16

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
April 12	75
April 18	65
May 2	88
May 9	63
May 23	48
May 31	61
June 7	60
June 13	48
June 21	43
July 11	51
July 18	55
July 26	54
August 3	55
August 8	53
August 16	<34
August 22	<34
August 29	58
September 17	970
September 19	1500
October 7	630
October 18	510
October 24	230
October 31	310
November 15	140
November 29	160

Northern Harbour - Mya N.B. 17

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
March 25	<34
March 29	<34
April 5	<34
April 12	<34
April 19	<34
April 26	<34
May 3	<34
May 9	<34
May 16	<34
May 23	<34
May 30	<34
June 6	<34
June 13	<34
June 20	<34
June 27	<34
July 4	41
July 11	57
July 20	<34
July 25	<34
August 17	<34
August 22	<34
August 29	91
September 6	<34
September 16	160
September 19	72
September 26	69
October 3	75
October 11	<34
October 18	40
November 7	<34

P A R T IV (B)

SPECIAL SAMPLES FOR INVESTIGATION

BLACK'S HARBOUR  
New Brunswick

Lepreau Basin - Mya (Cont'd)

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
March 14	73
March 14	120
March 16	72
March 16	130
March 16	180
March 21	180
March 21	180
March 21	110
March 21	140
March 24	160
March 24	160
March 28	110
March 28	130
March 30	140
March 30	150
March 28	110
March 28	79
March 30	160
April 6	180
April 6	130
April 6	170
April 12	71
April 12	61

Lepreau Basin - Mytilus

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
February 9	59

Ross Island Thoroughfare - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
October 11	88
August 16	<34

BLACK'S HARBOUR  
New Brunswick

Holt's Point - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
January 12	< 34

Little Lepreau Basin - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
February 7	55
February 7	50
February 7	53

Lepreau Basin - Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
February 9	290
February 9	130
February 9	65
February 9	83
February 9	120
February 14	150
February 14	75
February 14	110
February 14	89
February 21	73
February 21	77
February 21	100
February 21	79
February 22	120
February 22	130
February 28	130
February 28	140
February 28	140
February 28	130
March 2	130
March 2	200
March 2	140
March 7	110
March 9	130
March 7	110
March 7	68
March 9	150
March 14	110
March 14	100

BLACK'S HARBOUR  
New Brunswick

Scallop Rim

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
June 28	690
July 25	1100
August 17	180
September 16	1000
September 20	400
September 23	3400
October 12	2880
November 14	2200
	3000
December 19	3600

Scallop Liver

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
June 28	390
July 25	710
August 17	64
September 16	2700
September 20	270
September 23	65,000
October 12	32,000
November 14	6,200
	12,000
December 19	16,000

Scallop Meat

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
July 25	<34
September 16	<34
September 20	<34
September 23	54
October 12	<34
November 14	<34
	60
December 19	<34
December 19	<34

BLACK'S HARBOUR  
New Brunswick

Scallop Gill

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
July 25	<34
September 16	<34
September 20	<34
September 23	550
October 12	110
	110
December 19	45

Scallop Gonads

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
July 25	<34
September 20	<34
September 23	2300
November 14	73
	4800
December 19	200

Scallop Roe

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
September 16	200
October 12	760
November 14	<34

Mytilus

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
June 28	<34

Mussel Intestine

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
July 4	<34

## HALIFAX, N.S.

Mya (Clams)

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
January 26	<34
January 26	<34
January 26	<34

## GEORGES BANK

Scallops

<u>Date Taken</u> <u>1977</u>	<u>Species</u>	<u>Toxicity in</u> <u>Micrograms</u>
November 28	Scallop gill	<34
November 28	Scallop gill	<34
November 28	Scallop liver	<34
November 28	Scallop gonads	<34
November 28	Scallop meat	<34
December 20	Scallop gill	<34
December 20	Scallop liver	<34
December 20	Scallop gonads	<34
December 20	Scallop meat	<34
December 20	Scallop frills	<34

## P.S.P. POISONING

<u>Date Taken</u> <u>1977</u>	<u>Species</u>	<u>Toxicity in</u> <u>Micrograms</u>
November 1	Mussel Extracts	8600
November 1	Gastric Washing	60
November 1	Gastric Washing Undiluted	87

## HALIFAX, N.S.

<u>Date Taken</u> <u>1977</u>	<u>Species</u>	<u>Locality</u>	<u>Toxicity in</u> <u>Micrograms</u>
September 20	<u>Mya</u>	Harrington Beach	<34
September 20	<u>Mya</u>	Moose Lake	<34
September 20	<u>Mya</u>	Carr's Brook	<34
September 27	<u>Mya</u>	Harrington Beach	<34
September 27	<u>Mya</u>	Sand Point	<34
September 27	<u>Mya</u>	Carr's Brook	<34

YARMOUTH  
Nova Scotia

DIGBY - P. Magellanicus

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
August 16	<34
August 16	<34
August 16	<34
August 16	370
August 16	520
September 13	69
September 13	7200
September 13	1100
September 13	<34
September 13	950
September 13	2400
September 13	1500
September 24	24000
September 24	24000
October 19	570
October 19	2400
October 19	50000
October 19	4500
October 19	39

YARMOUTH  
Offshore

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
August 16	<34
August 16	<34
August 16	40
August 16	<34
August 16	<34
August 16	<34
August 16	<34

PORT GEORGE - Mytilus

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
October 28	40
November 3	54

## YARMOUTH

GEORGE'S BANK - P. Magellanicus

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
September 14	<34
September 14	<34
September 14	<34
September 14	<34
September 14	<34
September 14	<34

## BAY OF FUNDY

P. Magellanicus

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
December 21	41
December 21	7000
December 21	1200
December 21	470
December 21	99000

## BAY OF FUNDY

Digby - Whelks

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
October 21	<34
October 25	<34

MIDDLETON - Mya

Date Taken  
1977

Toxicity in  
Micrograms

August 16  
September 15

<34  
200

GOAT ISLAND - Mya

Date Taken  
1977

Toxicity in  
Micrograms

August 4

<34

P A R T    V

COMMERCIAL    SAMPLES

## BLACK'S HARBOUR, N.B.

DOMESTIC

Chamcook Seafoods Limited  
Chamcook, N.B.

Mya ( Clam Meats )

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
January 1	<34
February 1	62
February 7	<34
February 15	40
February 21	41
March 1	<34
March 7	<34
March 16	<34
March 28	<34
April 19	<34
April 25	48
May 16	<34
May 24	<34
May 30	<34
June 7	<34
June 13	<34
June 27	<34
July 4	<34
July 11	<34
July 26	<34
August 2	36
August 8	52
August 22	<34
August 30	<34
September 20	44
September 20	230
September 20	48
October 11	160
October 11	240
October 11	98
October 11	220
October 11	160
October 11	230
October 11	240
October 11	200
October 11	485
October 11	44
October 11	75
October 11	65
October 11	75
October 11	46
October 11	140
October 11	71
October 11	70
October 11	110
October 11	50

## BLACK'S HARBOUR, N.B.

DOMESTIC

Chamcook Seafoods Limited  
Chamcook, N.B.

Mya (Shellstock)

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
January 27	53
May 3	<34
September 17	320
September 17	620
September 17	800

DOMESTIC

Chamcook Seafoods Limited  
Chamcook, N.B.

Mya (Canned Clams)

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
October 6	<34
October 6	<34
October 6	<34
October 6	<34
October 6	<34
October 6	45
October 6	<34
October 6	<34
October 6	<34
October 6	<34
October 6	<34
October 6	<34
October 6	<34
October 6	38

IMPORT

Chamcook Seafoods Limited  
Chamcook, N.B.

Mya (Clam Meat)

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
November 29	<34

## Black's Harbour, N.B.

## DOMESTIC

<u>Date Taken</u> 1977	<u>Species</u>	<u>Locality</u>	<u>Toxicity in</u> <u>Micrograms</u>
May 24	Mya	Frank's Foods Ltd.	46

Everett Mitchell  
Back Bay, N.B.

Mya (Shellstock)

<u>Date Taken</u> 1977	<u>Toxicity in</u> <u>Micrograms</u>
October 31	110
November 8	140
November 21	<34
December 5	<34

IMPORTS

Chester Murray  
Saint John, N.B.

Mercenaria (Clams)

<u>Date Taken</u> 1977	<u>Toxicity in</u> <u>Micrograms</u>
February 7	<34
December 23	<34

SHEDIAC, N.B.

DOMESTICNational Sea Products  
Shediac DivisionScallop MeatDate Taken  
1977Toxicity in  
Micrograms

June 16

&lt;34

Scallop RoeDate Taken  
1977Toxicity in  
Micrograms

June 16

&lt;34

IMPORTED

Buctouche Co-op

QuohougsDate Taken  
1977Toxicity in  
Micrograms

September 15

&lt;34

ADDENDUM TO  
ANNUAL REPORT OF SHELLFISH TOXICITY MONITORING PROGRAM  
1977

Attached are additional details pertaining to special and commercial samples which have been acquired to augment information already given in the "Annual Report of Shellfish Toxicity Monitoring Program 1977".

In Commercial Samples, Part IV under Chamcook Seafoods Ltd., the clam samples dated 11th October, 1977 and taken at Chamcook Seafoods Ltd., were actually the property of Mills Seafoods Ltd., Buctouche, N.B., but held at Chamcook Seafoods Ltd., Chamcook, N.B. These shucked meats were returned from the United States and were being held in anticipation of canning, however, toxicity scores representing the 146 bushels exceeded our canning standards and this lot of clams was destroyed.

YARMOUTH  
Nova Scotia

DIGBY - P. Magellanicus

<u>Date Taken</u> <u>1977</u>		<u>Toxicity in</u> <u>Micrograms</u>
August 16	Gonads	<34
August 16	Meat	<34
August 16	Gills	<34
August 16	Rims	370
August 16	Liver	520
September 13	Gills	69
September 13	Liver	7200
September 13	Gonads	1100
September 13	Meat	<34
September 13	Rims	950
September 13	Scallop less adductor mussel	2400
September 13	Scallop less adductor mussel	1500
September 24	Scallop less adductor mussel	24000
September 24	Scallop less adductor mussel	24000
October 19	Gills	570
October 19	Gonads	2400
October 19	Liver	50000
October 19	Rim	4500
October 19	Meat	39

YARMOUTH

DIGBY OFFSHORE - P. Magellanicus

<u>Date Taken</u> <u>1977</u>		<u>Toxicity in</u> <u>Micrograms</u>
August 16	Gills	<34
August 16	Meat	<34
August 16	Liver	40
August 16	Roe	<34
August 16	Rim	<34
August 16	Testes	<34

PORT GEORGE - Mytilus

<u>Date Taken</u> <u>1977</u>		<u>Toxicity in</u> <u>Micrograms</u>
October 28		40
November 3		54

## YARMOUTH

GEORGE'S BANK - P. Magellanicus

<u>Date Taken</u> <u>1977</u>		<u>Toxicity in</u> <u>Micrograms</u>
September 14	Testes	<34
September 14	Liver	<34
September 14	Roe	<34
September 14	Meat	<34
September 14	Gills	<34
September 14	Rims	<34

## BAY OF FUNDY

DIGBY - P. Magellanicus

<u>Date Taken</u> <u>1977</u>		<u>Toxicity in</u> <u>Micrograms</u>
December 21	Meats	41
December 21	Rim	7000
December 21	Gonad	1200
December 21	Gills	470
December 21	Liver	99000

## BAY OF FUNDY

DIGBY - Whelks

<u>Date Taken</u> <u>1977</u>		<u>Toxicity in</u> <u>Micrograms</u>
October 21		<34
October 25		<34

SHEDIAC, N.B.

DOMESTICMills Seafoods Limited  
Buctouche, N.B.Mya ( Clam Meats )

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
October 11	160
October 11	240
October 11	98
October 11	220
October 11	160
October 11	230
October 11	240
October 11	200
October 11	485
October 11	44
October 11	75
October 11	65
October 11	75
October 11	46
October 11	140
October 11	71
October 11	70
October 11	110
October 11	50
October 11	150

## BLACK'S HARBOUR, N.B.

DOMESTIC

Chamcook Seafoods Limited  
Chamcook, N.B.

Mya ( Clam Meats )

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
January 1	<34
February 1	62
February 7	<34
February 15	40
February 21	41
March 1	<34
March 7	<34
March 16	<34
March 28	<34
April 19	<34
April 25	48
May 16	<34
May 24	<34
May 30	<34
June 7	<34
June 13	<34
June 27	<34
July 4	<34
July 11	<34
July 26	<34
August 2	36
August 8	52
August 22	<34
August 30	<34
September 20	44
September 20	230
September 20	48
October 31	<34
October 31	<34
October 31	<34
November 14	<34
November 14	<34

## SHEDIAC, N.B.

DOMESTICScallop Roe

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
June 28	<34

Scallop Meat

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
June 28	<34

Mills Seafoods Limited  
Buctouche, N.B.Mya (Shellstock)

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
April 28	<34
September 15	140
September 15	170
November 3	<34

IMPORTEDMills Seafoods Limited  
Buctouche, N.B.Mya (Shellstock)

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
October 27	<34
October 28	<34
October 30	<34
November 3	<34
November 3	<34
November 3	<34
November 22	<34
November 30	<34
December 5	<34

CHARLOTTETOWN  
Prince Edward Island

Scallop Meat

Date Taken  
1977

September 16

Toxicity in  
Micrograms

<34

Scallop Roe

Date Taken  
1977

September 16

Toxicity in  
Micrograms

<34

HALIFAX, N.S.

DOMESTICCormier's Five Islands  
Halifax, N.S.Mya (Shellstock)Date Taken  
1977Toxicity in  
MicrogramsOctober 3  
October 11  
October 11  
November 2<34  
<34  
<34  
<34

YARMOUTH  
Nova Scotia

DOMESTIC

Snow Bros. Ltd.

<u>Date Taken</u> <u>1977</u>	<u>Species</u>	<u>Locality</u>	<u>Toxicity in</u> <u>Micrograms</u>
July 17	Mya	Digby Co., N.S.	<34

IMPORTS

<u>Date Taken</u> <u>1977</u>	<u>Species</u>	<u>Locality</u>	<u>Toxicity in</u> <u>Micrograms</u>
April 14	Mya	Maine	<34

DOMESTIC

Annapolis Basin

Mya

<u>Date Taken</u> <u>1977</u>	<u>Toxicity in</u> <u>Micrograms</u>
August 11	<34
September 7	68
October 21	<34
October 25	38
November 17	<34

P A R T VI

PARALYTIC SHELLFISH POISONINGS

CASE HISTORY - PARALYTIC SHELLFISH POISONING

76

Name Mr. E. G. S. Time of Ingestion of Shellfish 2030 Hrs. 9/9/77  
 Address 252 King St. East, St. John, N.B. Time of Onset of Illness 0030 Hrs., 10 Sept./77  
 Sex Male Age 50 Duration of Illness to: 1200 Hrs. 12 Sept./1977  
 Height 5' 6" Weight 185 lbs. (Hours or Days)  
 Source of Shellfish Ross Island Thoroughfare Kind of Shellfish Eaten Mya  
 Number of Shellfish Eaten 148 Size of Shellfish 2-2½" 51-64 mm  
 Preparation of Shellfish (raw, steamed, etc.) Steamed 20-25 mins. in 1 cup water  
 Toxicity of Raw Shellfish 1040 ug / 100 gms Estimated Dosage 3600 ug  
 Estimated Dosage Retained 1800 ug  
 Other Food or Drink Taken 2 oz. Rum  
 Time Other Food Or Drink Taken Prior to eating  
 General Health Good Date Illness Reported 10 September, 1977  
 To Whom Reported Dr. R. G. Ritchie How? (Interview, etc.) Personal interview by H.L. Boyd  
 Work Interruption Ready for work on Monday, however weakened condition for remainder of week.

SYMPTOMS (Underline symptoms observed and sequence)

Numbness of Lips 1 2100 hr. Difficulty with Standing up 7 Saturday to Monday  
Face 1 tongue Sitting down 7 Saturday to Monday  
 Difficulty with Speech Difficulty with Breathing  
 Numbness of Fingers Difficulty with Holding Head Erect  
Toes Nausea 4 0045 hrs. 10 Sept./77  
Dizziness or Giddiness 6 0130 hrs. Sat Vomiting 5 0100 hrs. 10 Sept/77 (½ of clams eaten)  
 Numbness of Arms 2 If arms raised had to be forced down. Headache  
Legs Backache  
Vision Affected 5 0100 hrs. 10 Sept. Weakness 6 Yes  
Other symptoms 3 Floating Sensation

Other Information or Remarks: Admitted to Grand Manan Hospital at 1000 hrs. 10 Sept./77

Treatment included "SS" (Soap Suds) 1600 hrs., Milk at 1700 hrs. 0030 hrs, 10 Sept./77  
 Floating sensation - then fell asleep at 0100 hrs. To bathroom - vomited, no co-ordination difficulty in reading. Blood pressure low - slightly high; high - normal. Temperature normal.  
 12 September, 1977 - regular meal at 1700 hrs. Fed himself.

15 SEPTEMBER, 1977

H.L. BOYD

DATE

SIGNATURE

CASE HISTORY - PARALYTIC SHELLFISH POISONING

77

Name Mr. O.H.M. Time of Ingestion of Shellfish 2030 Hrs. 9/9/77  
 Address 6 Roberts Court  
Saint John, N.B. Time of Onset of Illness 2045 Hrs. 9 Sept./77  
 Sex Male Age 54 Duration of Illness to: 11 September, 1977  
 Height 5' 6" Weight 160 lbs. (Hours or Days)  
 Source of Shellfish Ross Island Kind of Shellfish Eaten Mya  
Thoroughfare  
 Number of Shellfish Eaten 80 Size of Shellfish 2-2½" 51-64 mm  
 Preparation of Shellfish (raw, steamed, etc.) Steamed 20 - 25 mins. in 1 cup water  
 Toxicity of Raw Shellfish 1040 ug / 100 gms. Estimated Dosage 1950 µg  
 Other Food or Drink Taken 2 oz. Rum  
 Time Other Food Or Drink Taken Prior to eating clams  
 General Health Good Date Illness Reported 10 Sept., 1977  
 To Whom Reported Dr. R. G. Ritchie How? (Interview, etc.) Phoned from Toronto, 20/9/77  
to H.L. Boyd  
 Work Interruption No - worked Saturday evening.

SYMPTOMS (Underline symptoms observed and sequence)

Numberness of	<u>Lips</u> 1 2045 Hrs.	Difficulty with	Standing up
Difficulty with Speech	<u>Face</u> 2 Tongue 12th Sept. periodically		Sitting down
Numberness of	Fingers	Difficulty with Breathing	
	Toes	Difficulty with Holding Head Erect	
Dizziness or Giddiness		Nausea	
Numberness of	Arms	Vomiting	
	Legs	Headache	
Vision Affected		Backache	
Other symptoms		Weakness	

Other Information or Remarks: Treatment - 10 Sept. /77 - Fluids and laxative  
Phoned from Toronto.

20 SEPTEMBER 1977

H.L. BOYD

DATE

SIGNATURE

CASE HISTORY - PARALYTIC SHELLFISH POISONING

78

Name Mrs. J. G. Time of Ingestion of Shellfish 2030 Hrs. 9/9/77  
 Address Castalia, Grand Manan, N.B. Time of Onset of Illness 2300 Hrs. 9 Sept., 1977  
 Sex Female Age 48 Duration of Illness to: 12 September, 1977  
 Height 5' 7½" Weight 142 lbs. (Hours or Days)  
 Source of Shellfish Ross Island Thoroughfare Kind of Shellfish Eaten Mya  
 Number of Shellfish Eaten 32 Size of Shellfish 2-2½" 51-64 mm  
 Preparation of Shellfish (raw, steamed, etc.) Steamed 20-25 mins in 1 cup of water  
 Toxicity of Raw Shellfish 1040 ug/ 100 gms. Estimated Dosage 800 µg  
 Other Food or Drink Taken 2 oz. Gin  
 Time Other Food Or Drink Taken Prior to eating clams  
 General Health Good Date Illness Reported Morning, 10 September, 1977  
 To Whom Reported Dr. R. G. Ritchie How? (Interview, etc.) At Grand Manan Hospital  
 Work Interruption Until 12 September, 1977 Personal interview by H.L. Boyd

SYMPTOMS (Underline symptoms observed and sequence)

Numbness of <u>Lips</u> 1 2300 hrs. 9 Sept.	Difficulty with <u>Standing up</u> 1 2300 Hrs.
<u>Face</u> 1 2300 hrs.	<u>Sitting down</u>
Difficulty with Speech	Difficulty with Breathing
Numbness of <u>Fingers</u> 1 2300 hrs	Difficulty with Holding Head Erect
<u>Toes</u>	<u>Nausea</u> 2 0100 Hrs. - 10 September, 1977
Dizziness or Giddiness	<u>Vomiting</u> 3 ½ cup of coffee
Numbness of <u>Arms</u>	<u>Headache</u> 2 Slight
<u>Legs</u> 1 2300 hrs.	<u>Backache</u>
Vision Affected 2 Blurred	<u>Weakness</u> 2 0100 hrs. 10 Sept. - 11 Sept. 1977
Other symptoms 2 Floating Sensation	

Other Information or Remarks: No co-ordinated control of muscles - cup of coffee when raised to lips would simply go to one side of head.

15 September, 1977

DATE

H.L. BOYD

SIGNATURE

CASE HISTORY - PARALYTIC SHELLFISH POISONING

79

Name Mrs. J. G. Time of Ingestion of Shellfish 2030 Hrs. 9/9/77  
 Address Castalia, Grand Manan Time of Onset of Illness 2300 Hrs., 9 Sept./77  
 Sex Male Age 52 Duration of Illness to: 12 September, 1977  
 Height 5'9" Weight 152 lbs. (Hours or Days)  
 Source of Shellfish Ross Island Thoroughfare Kind of Shellfish Eaten Mya  
 Number of Shellfish Eaten 80 Size of Shellfish 2-2 1/4", 51-64 mm.  
 Preparation of Shellfish (raw, steamed, etc.) Steamed 20 -25 mins in 1 cup water  
 Toxicity of Raw Shellfish 1040 ug/ 100 gms. Estimated Dosage 2000 ug  
 Other Food or Drink Taken 2 oz. Gin  
 Time Other Food Or Drink Taken Prior to eating clams  
 General Health 4 day Hospital for Virus Date Illness Reported 10 September, 1977  
 To Whom Reported Dr. R. G. Ritchie How? (Interview, etc.) At Grand Manan Hospital  
 Work Interruption 3 days - 9 September, 1977 to 12 September, 1977. Personal interview with H.L. Boyd

SYMPTOMS (Underline symptoms observed and sequence)

Numbness of Lips 1 2300 hrs. 9Sept. Difficulty with Standing up 1 2300 hrs.  
Face 1 Around teeth Sitting down  
 Difficulty with Speech Difficulty with Breathing  
 Numbness of Fingers 1 2300 hrs. Difficulty with Holding Head Erect  
Toes 1 2300 hrs. Nausea 2 Slight 10 Sept. 1977  
Dizziness or Giddiness 3 10 Sept. Vomiting  
 Numbness of Arms 1 2300 hrs. Headache  
Legs 1 2300 hrs. Backache  
 Vision Affected Weakness  
 Other symptoms Floating Sensation  
 Other Information or Remarks: Co-ordination poor, difficult to walk.

Treatment at hospital, Saturday - fluids consisting of 3 quarts milk, tomato juice and soup.

15 September, 1977

DATE

H.L. BOYD

SIGNATURE

CASE HISTORY - PARALYTIC SHELLFISH POISONING

80

Name Mr. A. F. Time of Ingestion of Shellfish 2030 Hrs. 9/9/77  
Address Castalia, Grand Manan Time of Onset of Illness N/A  
Sex Male Age 54 Duration of Illness to: N/A  
(Hours or Days)  
Height 5' 8" Weight 180 lbs.  
Source of Shellfish Ross Island Thoroughfare Kind of Shellfish Eaten Mya  
Number of Shellfish Eaten 6 to 10 Size of Shellfish 2-2 1/2" 51-64 mm  
Preparation of Shellfish (raw, steamed, etc.) Steamed 20-25 mins. in 1/2 cup of water.  
Toxicity of Raw Shellfish 1040 ug / 100 gms. Estimated Dosage 150-250 ug  
Other Food or Drink Taken 2 teabiscuits, 1 oz Gin  
Time Other Food Or Drink Taken Prior to eating clams.  
General Health Ulcer Date Illness Reported N/A  
To Whom Reported N/A How? (Interview, etc.) Personal interview by H.L. Boyd  
Work Interruption N/A

SYMPTOMS (Underline symptoms observed and sequence)

Numbness of Lips	Difficulty with Standing up
Face	Sitting down
Difficulty with Speech	Difficulty with Breathing
Numbness of Fingers	Difficulty with Holding Head Erect
Toes	Nausea
Dizziness or Giddiness	Vomiting
Numbness of Arms	Headache
Legs	Backache
Vision Affected	Weakness

Other symptoms

Other Information or Remarks: No symptoms developed.

Special medicine (ancotropine gel) taken the day before for ulcers. Dosage-  
2 teaspoons 4 times daily.

15 SEPTEMBER, 1977

DATE

H.L. BOYD

SIGNATURE

CASE HISTORY - PARALYTIC SHELLFISH POISONING

81

Name Mrs. N. F. Time of Ingestion of Shellfish 1030 hrs. 9/9/77  
 Address Castalia, Grand Manan Time of Onset of Illness 2200 Hrs. 9 Sept. /77  
 Sex Female Age 43 Duration of Illness to: 13 September, 1977  
 Height 5' 3" Weight 195 lbs. (Hours or Days)  
 Source of Shellfish Ross Island Kind of Shellfish Eaten Mya  
Thoroughfare  
 Number of Shellfish Eaten 36 Size of Shellfish 2-2 1/4" 51-64 mm.  
 Preparation of Shellfish (raw, steamed, etc.) Steamed 20-25 mins. in 1/4 cup of water  
 Toxicity of Raw Shellfish 1040 ug / 100 gms. Estimated Dosage 900  $\mu$ g  
 Other Food or Drink Taken 1 oz Rum; 6 oz Milk and teabiscuit.  
 Time Other Food Or Drink Taken Prior to eating clams  
 General Health Good Date Illness Reported 10 Sept., 1977  
 To Whom Reported Dr. R. G. Ritchie How? (Interview, etc.) Personal interview by H.L. Boyd  
 Work Interruption 4 days. Effects diminished on 13 September, 1977

SYMPTOMS (Underline symptoms observed and sequence)

Numbness of	<u>Lips</u> 1 2200 hrs. 9 Sept.	Difficulty with	Standing up
	Face		Sitting down
Difficulty with	Speech	Difficulty with	Breathing
Numbness of	<u>Fingers</u> 2 2200 hrs.	Difficulty with	Holding Head Erect
	<u>Toes</u> 2 2200 hrs.	Nausea	
Dizziness or	Giddiness	<u>Vomiting</u> 4 2300 Hrs. 9 Sept.	(portion of clams)
Numbness of	Arms	Headache	
	<u>Legs</u> 3 2200 hrs.	Backache	
Vision Affected		Weakness	

Other symptoms Floating sensation all day on 10 Sept., 1977

Other Information or Remarks: \_\_\_\_\_

15 September, 1977

H.L. BOYD

DATE

SIGNATURE

CASE HISTORY - PARALYTIC SHELLFISH POISONING

82

Name Mrs. D. P. Time of Ingestion of Shellfish 23 Sept. 1977 9:00 PM  
 Address Florenceville, N.B. Time of Onset of Illness 7 am 24 Sept. 1977  
 Sex Female Age 22 Duration of Illness to: 24 hrs. 24 Sept. 1977  
 Height 5' 3" Weight 135 lbs. (Hours or Days)  
 All day upset stomach.  
 Source of Shellfish Charlotte Co., N.B. Kind of Shellfish Eaten Mya  
 Number of Shellfish Eaten <10 Size of Shellfish Average  
 Preparation of Shellfish (raw, steamed, etc.) Steamed  
 Toxicity of Raw Shellfish Not available Estimated Dosage \_\_\_\_\_ µg  
 Other Food or Drink Taken No  
 Time Other Food Or Drink Taken N/A  
 General Health Good Date Illness Reported 24th September, 1977  
 To Whom Reported Dr. Bryan Ewart, Florenceville (Interview, etc.) Phone  
 Work Interruption NO

SYMPTOMS (Underline symptoms observed and sequence)

Numbness of Lips	Difficulty with Standing up
Face	Sitting down
Difficulty with Speech	Difficulty with Breathing
Numbness of Fingers	Difficulty with Holding Head Erect
Toes	<u>Nausea</u>
Dizziness or Giddiness	<u>Vomiting</u> 1 hour after awakening
Numbness of Arms	Headache
Legs	Backache
Vision Affected	Weakness
Other symptoms	

Other Information or Remarks: Symptoms were detected on awakening on the 24th of  
September, 1977. Stomach upset all day on the 24th of September.

September 28, 1977  
DATE

H.L. Boyd  
SIGNATURE

CASE HISTORY - PARALYTIC SHELLFISH POISONING

83

Name Mrs. B.D. Time of Ingestion of Shellfish 2000-2200 hrs. 23 Sept. 1977  
 Address Florenceville, N.B. Time of Onset of Illness 24 Sept. 1977  
 Sex Female Age 25 Duration of Illness to: (2 days) 26th Sept., 1977.  
 Height 5' 4" Weight 120 lbs. (Hours or Days)  
 Source of Shellfish Charlotte Co., N.B. Kind of Shellfish Eaten Mya  
 Number of Shellfish Eaten N/A Size of Shellfish Average  
 Preparation of Shellfish (raw, steamed, etc.) Steamed  
 Toxicity of Raw Shellfish Not available Estimated Dosage N/A  $\mu$ g  
 Other Food or Drink Taken Unknown  
 Time Other Food Or Drink Taken N/A  
 General Health \_\_\_\_\_ Date Illness Reported 24th September, 1977  
 To Whom Reported Dr. MacDonald, Hartland? (Interview, etc.) Phone  
 Work Interruption Unable to work for 2 days.

SYMPTOMS (Underline symptoms observed and sequence)

Numbness of <u>Lips</u>	Difficulty with <u>Standing up</u>
<u>Face</u>	<u>Sitting down</u>
Difficulty with <u>Speech</u>	Difficulty with <u>Breathing</u>
Numbness of <u>Fingers</u>	Difficulty with <u>Holding Head Erect</u>
<u>Toes</u>	<u>Nausea</u>
<u>Dizziness or Giddiness</u>	<u>Vomiting</u>
Numbness of <u>Arms</u>	<u>Headache</u>
<u>Legs</u>	<u>Backache</u>
<u>Vision Affected</u>	<u>Weakness</u>
Other symptoms _____	

Other Information or Remarks: All symptoms were detected on awakening on the 24th of September.

Symptoms increased in intensity, particularly in the lips and face and Dr. MacDonald was advised. Treatment---Laxative-prescribed and symptoms gradually subsided.

Sept. 28/77

DATE

H. L. Boyd

SIGNATURE

CASE HISTORY - PARALYTIC SHELLFISH POISONING

84

Name Mr. H.N. Time of Ingestion of Shellfish 23 October, 1977  
 Address 669 Sanatorium Road Time of Onset of Illness 1330 hours  
Landmount, Ontario  
 Sex Male Age 55 Duration of Illness to: Ill at time of report  
 Height \_\_\_\_\_ Weight Unknown (Hours or Days)  
 Source of Shellfish Port George, N.S. Kind of Shellfish Eaten Mytilus  
 Number of Shellfish Eaten Two dozen Size of Shellfish \_\_\_\_\_  
 Preparation of Shellfish (raw, steamed, etc.) Believed Steamed  
 Toxicity of Raw Shellfish 8600 ug Estimated Dosage Unknown ug  
 Other Food or Drink Taken Unknown  
 Time Other Food Or Drink Taken N/A  
 General Health Good Date Illness Reported October 23, 1977  
 To Whom Reported Dr. Paul MacLean How? (Interview, etc.) In person.  
 Work Interruption \_\_\_\_\_

SYMPTOMS (Underline symptoms observed and sequence)

Numbness of <u>Lips</u> 1	Difficulty with <u>Standing up</u>
<u>Face</u> 2	<u>Sitting down</u>
Difficulty with Speech <u>YES</u>	<u>Difficulty with Breathing</u>
Numbness of <u>Fingers</u> 3	<u>Difficulty with Holding Head Erect</u>
<u>Toes</u> 4	<u>Nausea</u>
Dizziness or Giddiness <u>YES</u>	<u>Vomiting</u> Forced by physician.
Numbness of <u>Arms</u> 5	<u>Headache</u> Unknown
<u>Legs</u> 6	<u>Backache</u> Unknown
Vision Affected	<u>Weakness</u>

Other symptoms

Other Information or Remarks: Victim was transported immediately to V. G. Hospital in a

gravely ill condition. Hospital reports that his condition is worsening as of 1100 hours, 24 October, 1977. Poster still in place at wharf as of 900 hours, 24 October, 1977. This is a Class 3 area and posters are maintained all year round. Contamination level -Margaretsville - October 11--66, Oct. 13--68, Oct. 17-- 100, and October 19--58.

Gastric Washings 60 ug

Gastric Washings Undiluted 87 ug

Vomit of Mytilus 8600 ug

DATE

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CASE HISTORY - PARALYTIC SHELLFISH POISONING

85

Name Mrs. D. N. Time of Ingestion of Shellfish 23 October, 1977  
 Address R.R. # 2, Middleton, N.S. Time of Onset of Illness \_\_\_\_\_  
 (Spa Springs)  
 Sex Male Age 50 Duration of Illness to: Ill at time of Report.  
 Height \_\_\_\_\_ Weight 175 (Hours or Days)  
 Source of Shellfish Port George, N.S. Kind of Shellfish Eaten Mytilus  
 Number of Shellfish Eaten 1 Dozen Size of Shellfish \_\_\_\_\_  
 Preparation of Shellfish (raw, steamed, etc.) Believed Steamed  
 Toxicity of Raw Shellfish \_\_\_\_\_ Estimated Dosage Unknown µg  
 Other Food or Drink Taken Unknown  
 Time Other Food Or Drink Taken N/A  
 General Health Was Good Date Illness Reported October 23, 1977  
 To Whom Reported Dr. Paul MacLean, M.D. How? (Interview, etc.) In Person  
 Work Interruption \_\_\_\_\_

SYMPTOMS (Underline symptoms observed and sequence)

Numbness of <u>Lips</u> 1	Difficulty with <u>Standing up</u> YES
<u>Face</u> 2	<u>Sitting down</u> YES
Difficulty with Speech YES	Difficulty with Breathing YES
Numbness of <u>Fingers</u> 3	Difficulty with Holding Head Erect
<u>Toes</u> 4	<u>Nausea</u> YES
Dizziness or Giddiness YES	<u>Vomiting</u> Forced by Physician
Numbness of <u>Arms</u> 5	Headache Unknown
<u>Legs</u> 6	Backache Unknown
Vision Affected	Weakness

Other symptoms

Other Information or Remarks: Victim transported immediately to V.G. Hospital in

a gravely ill condition. Hospital reports that his condition is improving as of 1100 hrs., 24 Oct., 1977. Poster still in place at Wharf as of 900 hrs., 24. October, 1977. This is a Class 3 area and posters are maintained year round. Contamination Level - Margaretsville - Oct. 11-66, Oct. 13-68, Oct. 17-100 and Oct. 19-58.

DATE

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CASE HISTORY - PARALYTIC SHELLFISH POISONING

86

Name Mrs. M. N. Time of Ingestion of Shellfish N/A  
 Address 2829 Oxford Street Time of Onset of Illness N/A  
Halifax, N.S.  
 Sex F Age 20 Duration of Illness to: N/A  
 Height \_\_\_\_\_ Weight \_\_\_\_\_ (Hours or Days)  
 Source of Shellfish Port George, N.S. Kind of Shellfish Eaten Mytilus  
 Number of Shellfish Eaten <sup>Several</sup> N/A Size of Shellfish N/A  
 Preparation of Shellfish (raw, steamed, etc.) Steamed  
 Toxicity of Raw Shellfish \_\_\_\_\_ Estimated Dosage \_\_\_\_\_ µg  
 Other Food or Drink Taken \_\_\_\_\_  
 Time Other Food Or Drink Taken \_\_\_\_\_  
 General Health \_\_\_\_\_ Date Illness Reported \_\_\_\_\_  
 To Whom Reported Dr. Paul MacLean How? (Interview, etc.) \_\_\_\_\_  
 Work Interruption \_\_\_\_\_

SYMPTOMS (Underline symptoms observed and sequence)

Numbness of Lips	Difficulty with Standing up
Face	Sitting down
Difficulty with Speech	Difficulty with Breathing
Numbness of Fingers	Difficulty with Holding Head Erect
Toes	Nausea
Dizziness or Giddiness	Vomiting
Numbness of Arms	Headache
Legs	Backache
Vision Affected	Weakness
Other symptoms	

Other Information or Remarks: Subject examined by Dr. McLean and released as she did

not show symptoms of P.S.P.

DATE

SIGNATURE

