

FISHERIES RESEARCH BOARD
OF CANADA

MANUSCRIPT REPORTS OF THE BIOLOGICAL STATIONS

No. 376

Title

Paralytic Shellfish Poisoning in Nova Scotia
and New Brunswick

Author

J. C. Medcof and R. J. Gibbons

1945

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**Paralytic Shellfish Poisoning in Nova Scotia
and New Brunswick.**

Hedecf, J.C. and R. J. Gibbons, 1945

INTRODUCTION

The Atlantic Biological Station and Department of National Health and Welfare have been conducting a joint study of paralytic shellfish poison since 1943. In 1945 an outbreak of poisoning came to the senior author's attention on August 19 when it was at its height. All available information was assembled with the greatest dispatch because many other phases of the problem were under investigation at the same time and claiming the writer's time. These records constitute parts I, II & III of the present report.

Later these cases of humans poisoned were re-investigated by R. J. Gibbons, M.D., of the Department of National Health and Welfare with emphasis on their clinical aspects. His efforts revealed a few additional cases notably those of 1945 in Nova Scotia which he unfortunately did not investigate. Data on these were obtained by the senior author through correspondence and reported in Part II. A case report form used for this is included as Part VI. Dr. Gibbons records constitute part IV only.

The data assembled here are the basis for the section on Epidemiology of Bulletin 75 of the Fisheries Research Board entitled, "Paralytic Shellfish Poisoning on the Canadian Atlantic Coast". In tables 16 and 17 of that work several of the cases reported here are referred to but by numbers only. To permit a re-checking of those which might be desirable in the future, a key of the numbers of the Bulletin case history reports is included here as part V of this manuscript.

In the interval between the 1945 investigation and the compilation of this Manuscript (January 1948) a few further instances of poisoning have arisen. For completeness these have been included with the other records.

Fleecing of domestic animals

Reports by J. C. Noddef - 1945

Case History - about 1930

Two cats

Mrs. Harley Travis, New River Beach, N.S., interviewed October 12th, 1945, stated that one autumn about fifteen years ago her husband brought home a mess of scallops, shucked them in the back shed and threw the rims out into the yard. Shortly afterwards their two cats came into the kitchen staggering about as though they were drunk, bumping into the stove and giving all the appearances of having fits. She threw them outdoors and later the same day her husband discovered them dead, one under the barn and the other in the hayloft. There seems to be little doubt that they both suffered paralytic shellfish poisoning, although neither was observed eating the rims.

Case History - about 1933

Cats and Men

Mr. F. E. Filleul, Fisheries Inspector of Weymouth, N.S., interviewed September 20th, 1945, stated that about twelve years ago the fishermen about Fort Wade and Victoria Beach (both near Digby) brought a number of scallops ashore for shucking and left the "rims" about their fishing shacks. Several cats came there, fed on the refuse and were found dead on the spot. There seems to be little doubt that they suffered paralytic shellfish poisoning.

He further stated that during the winter fishing season the Boudreau Brothers, scallop fishermen of Digby Neck, regularly ate chowders made of scallop rims and never have suffered any ill effects.

Case History - about 1940

Cats and Men

Mr. Harry McCormick of New Edinburgh, N.S. interviewed September 21st, 1945, stated that two fishermen from Crosses Coques reported to him several years ago that they fed raw bar clams to several of their cats. They all died within a few hours. On the same date, Mr. McCormick had taken home bar clams from Crosses Coques, steamed and eaten them and suffered no ill effects.

Case History - about 1940

Hens, Cats and Men

Mr. Herbert Ring of Victoria Beach, N.S. (near Digby) interviewed September 22nd, 1945, stated that 5 or 6 years ago he was using scallop "rims" for trawl bait in the fall of the year and left a few on the ground about his fishing shack. A flock of 7 or 8 hens, owned by his neighbour, Herbert Taylor, came down to the shore, ate the rims and died in about 15 minutes. Before they died they staggered about "as if they were drunk" and eventually completely lost control of their legs. When the crops were opened, the scallop rims were found in them. Mr. Ring remembers the incident very well because he was obliged to pay for the poultry.

Mr. Ring corroborated the statement of other fishermen as reported elsewhere by Inspector Filiceul regarding the death of cats. He had seen several when they were suffering from the poison. They lose control of their hind legs first and may die within hour after eating the rims but generally after an hour or two.

Mr. Ring reported that it is common practice in his neighbourhood to make chouders from the red roes of scallops but that never are the entire rims used as they are considered to be poisonous.

Case History - winter about 1940

House cat

Mr. Charles MacPherson of Little Lepreau was interviewed September 5, 1945, and stated that a few winters ago contrary to his regular practice he brought ashore whole scallops which he had dragged in the Maces Bay district. He shucked them at the house and threw the "rims" to the cat which ate some and died within a few hours.

Case History - September 1944

Five hens, some chickens, 2 cats and 2 families

Mr. & Mrs. Wm. McGowan of Maces Bay, N.B., were interviewed on August 29th, 1945, and reported that last year during either the first or second week of September, they are not sure which, Mr. McGowan brought home two ten-quart buckets of clams fished in Lepreau Basin. Mr. McGowan shucked out about a quart of meats for frying and noticed

that there was a lot of greenish brown juice about the "livers" so he "popped" out the livers and Mrs. McGowan fried the clams for dinner. These they ate with relish and no ill effects. Just before dinner, Mrs. McGowan threw out the shells and strippings from the chucking (siphons, mantle - rinds and the livers) to the hens near the barn. About three quarters of an hour later Mr. McGowan reported back to his wife, "Nether something ails them hens". She found three stone dead, their combs were a deep purple colour; two others were lying on the ground unable to walk, their legs were "stuck out behind"; in another hour, they too were dead. There were a number of chickens in the flock but none of them died. Mrs. McGowan had noticed that at feeding time the hens always drove the chickens away from the food until they themselves had their fill and that the chickens usually got only the leavings. Mrs. McGowan thinks that there was not enough of the clam strippings to feed the whole flock and that the chickens got very little and that for this reason only the hens died.

That same day the two pet cats disappeared, some days later Mr. McGowan found the body of one in the hay now, it had evidently been dead for quite some time. Only one cat had been seen eating the clams but none of its reactions were observed.

A man who was the local travelling agent for Raleigh's products, visited the home just before dinner and was given the second bucket of clams which he and his family ate steamed. He later reported to the McGowans that no one had suffered as a result.

Case History - about August 3, 1945

James Barvell Family and three chickens at Larran, N.B.

On August 17, Mr. Barvell stated that about two weeks previous he dug a mass of clams from Lepree Basin. When he was digging them he ate about four raw. These he brought home were steamed and eaten by the family of three. The remnants of the meal which included several entire bodies of steamed clams were thrown to a hen and her brood of seven two-week-old chicks. None of the Barvells suffered any ill effects but three of the chicks were found dead shortly after they were fed.

Cats History - 1945

Cats, Dog and Bear

Mr. Everett Lemax of Little Laproon, N.S., interviewed September 17th, 1945, stated that they have a hard time keeping cats at their house because they wander down to the shucking house which is near by and feed on the clam trimmings and die as a result. They have a dog that some times eats some of these but it has never been sick. A year ago there was a bear that made regular trips to the refuse pile and apparently fed on the clam necks without harm to itself.

Cats History - March 16, 1946.

Hens and Cat

Raymond Cunningham gave the "rins" of scallops taken the day previous off the Massarone shore in Passamaquoddy bay, N.S., to his flock of 14 hens. Within a few hours, 13 of these were dead.

Rins from the same lot of scallops were thrown out the back door of Deen's Grocery store. Elmer Shirley's cat was seen eating some of these during the afternoon of March 16. That night the cat died. A sample of these rins was extracted March 17 and showed a toxicity of 12,800.

Cats History

Cats

Miss Catherine Goodwin of the Goodwin Hotel, Weymouth, N.S., interviewed September 19th, 1945, stated that each week they use 14-20 quarts of clam meats in connection with their hotel trade. The "livers" and siphon ends of these are always removed and thrown to the thirteen cats which they keep. The animals are very fond of this waste and never show any ill effects.

Poisoning of Humans

Reports by J. C. Hedeaf, 1945

Case History - Reported August 4, 1936

Mr. & Mrs. F. W. Brooks and an unnamed woman, Freeport, N.S.

(Copy of a letter on Atlantic Biological Station file 7-27).

Freeport, N.S.,
Aug. 4/1936.

Biological Station,
St. Andrews, N.B.

Dr. A. H. Leim,

Dear Sir:-

I do not know whether I am writing to the right party or not, but if I am not would you kindly pass these mussels on to whom they may concern,

As my husband and I also a lady friend were poisoned by eating mussels at the same time the people on Digby Neck were poisoned, I have intended sending you a sample of some taken from the same place as the ones we ate. We have always eaten mussels the year round and they have never bothered us but this was the first time we had eaten the blue ones from this place, every other time we have had blue mussels we got them over on St. Marys Bay side of the Island. The red ones we have always eaten and have always got them down handy where we got the poison blue ones. That would be on the Bay of Fundy side of the Island. We scrapped them all good then washed them, then boiled them and after shelling them we fried them. One of the articles I read in the paper claimed the cooking didn't reduce the poison but I hardly credit that where we ate so many and it took only a couple not cooked to kill these other people.

Now I will tell you how they affected us. First this strange feeling came in the hands it wasn't a numbness but the feeling after numbness had left and you couldn't take a grip on anything the bones seemed sore and when the hands were put in warm water they felt as if they would burst. Then the tongue and mouth felt as if it had been burned with hot soup. Then the feet felt as if you were walking on pebbles with nothing on your feet. It took a couple of days for these feelings to wear away. I didn't feel steady the first day at all, kept swaying all the time, if I sit down I felt as if the chair was on the move.

I am writing this as I understand an investigation is under way and am in hopes this will help out some and would appreciate an answer if anything of a poisonous nature is found in these mussels.

Sincerely yours,

(Sgd.) Mrs. Frederick W. Brooks,
Freeport, Nova Scotia.

Case History - April 28, 1934

Mr. E. E. Ring in a letter dated September 29th, 1945, addressed from Digby, N.S., E. E. Conway, stated that on April 28th, 1934, he and several other people had generous helpings of fried scallop roes for supper and took violently ill during the early morning (about 10 hours after the meal). He vomited; had a severe headache at the back of the head; was dizzy; found it hard to walk; was attended by Dr. Dickie of Digby, N.S.; treatment unknown; and recovered within a few hours. The scallop roes had been kept in a tub all day and the roes removed that evening. Records of toxicity scores from various organs of the scallop indicate that the roes are normally not severely poisonous and Mr. Ring states that they had eaten the roes several times previous to their illness. It seems probable that the poison might have diffused from the damaged digestive glands to other parts of the scallop roes during the period that they were held in the tub. It is unlikely that this sickness was anything other than paralytic poisoning. Several others who shared the meal suffered the same sort of illness.

Case History - August or July 1936

Miss LeDent, North Bay, Ontario, not interviewed. Case reported by Mr. Maurice Conde, Pocologan, N.B., at Bay View Cabins, Davis' Cove. This case is said to have been handled about 6 years ago by Dr. A. L. Donovan, Saint John, from whom details should be available. For several successive years, Miss LeDent, a middle-aged, unmarried woman, spent July and August at the Bay View Cabins, then managed by Mrs. Evans by whom Mr. Conde was employed. At low tide one afternoon in August or July Miss LeDent gathered mussels from the rocks behind the cabins and ate them steamed for her supper. At midnight or thereabouts, when Conde was closing the gasoline station and straightening away for the night, he noticed a light in the LeDent cabin and heard moaning from within. He entered and found the woman prostrate on the bathroom floor; she had vomited considerably and was in great pain but quite incapable of moving arms or legs; while Conde was getting her into bed she complained of being paralyzed and of severe headache and abdominal pain she was taken to Saint John General Hospital after some delay and failure in getting a doctor locally. In Saint John they pumped out her stomach but she was so weakened that she had to be kept in the hospital for several weeks before discharge.

On August 25th, 1945, the writer visited the rocky point where, according to Conde, the mussels were gathered. Both Mytilus and Modiola are present but the latter is the more abundant and a sample was taken for assay. It seems probable that it was responsible for the poisoning of Miss LeDent.

(Further investigation of this case is proposed).

Case History - 1st week of August, 1945

William Conway. Case reported to J. C. Madecf and referred to Dr. Gibbons for investigation.

Case History - August 3, 1945

Alice Munnal (age about 20, ^(slight about 120 lbs.) 29 Celebration St., Saint John, interviewed August 21 reports that on Friday August 3rd she ate about a dozen and a half raw clams from the bridge flat at approximately 3:00 p.m.; at 3:30 she began to feel sick; lips and face numb and swollen; was driven to Saint John; at 5:00 p.m. hands and feet numb; breathing difficult; felt weak all over; severe headache; couldn't vomit up anything but "water"; was sent directly to hospital by Dr. MacDonald, left at 8 p.m.; had stomach pumped out; vomiting spells all next day; able to walk on Sunday; Monday was first day she could keep down food and headache disappeared.

Case History - about August 3, 1945

Mrs. Davidson, a husky woman of 160 lbs. or so, Sandy Point Road, Saint John, interviewed August 22nd, states that on a Friday night approximately three weeks ago (it was raining that night - this should clinch the date), she went with her husband to Sam's Oyster House on Union Street, Saint John; they each had a clam chowder, then went to the show; half way through the show her hands and feet went numb; she developed a severe headache and felt sick at the stomach but did not vomit and remembers no numbness about the mouth; she was dizzy when she left the theatre and found it hard to walk; she was quite normal the next morning.

Sam's Oyster House was supplied with shucked clams during this period only by Mr. Everett Lemax of Little Lepreau who drew his supply at about this date from Lepreau Basin and Lepreau Harbour.

Date was without doubt Aug. 3rd. (See letter of F. M. Barnes from Saint John Observatory, December 24th, 1945, file 7-27).

Case History - August 5, 1945

Arthur Haché (approximately 50 yrs. old) 98 St. Patrick St., St. John; interviewed August 21; states that on August 5 he went to Lepreau basin on his motor-cycle for a picnic; he had a few drinks during the day; at approximately 4:30 he dug approximately two dozen clams from the bridge flat and ate them raw; after a quarter of an hour a numbness set in about his lips and face, by 5:00 p.m. his legs and arms were paralyzed and he had to be taken to St. John in a car; went to hospital, had stomach washed out in the outpatients' section; admitted to hospital late that night (actually August 6); severe backache and headaches and paralyzed all over; he found breathing difficult; discharged on August 8 but his legs were still numb and he could scarcely walk; still suffered from severe headache and backache; unable to work for several days.

Case History - August 16, 1945

Mr. John Perry (about 65 yrs. old), 50 Beakonsfield Ave., Saint John; not interviewed; (reports from two sons and daughter on August 22nd). On the afternoon of August 16th, his son gathered clams from the bridge flat at Lepreau basin and brought them back home to Saint John; a peck of these were steamed about 8:00 that evening for approximately 15 minutes in a covered pot; and eaten by a group of eight people; each having approximately two dozen clams; at 8:30 Perry complained of a queer feeling about the mouth, he had taken a drink of liquor with the clams and decided to take some air; walked around outdoors until 10:30 p.m. hoping to clear his head but instead he became worse, thought he was taking a stroke and became nervously excited because his arms and legs were numb up to his elbows and knees respectively and felt very weak; no headache, not sick at stomach but extreme dizziness; called Dr. F. G. Knoll at midnight who administered a laxative; morning of August 17th arms and legs still useless; still very dizzy; recovered somewhat by noon and took a little food; by evening had recovered from the paralysis but still weak, couldn't go to work on 18th and still shaky on the 19th but worked August 20th (Monday).

None of the others who ate clams from the batch steamed on August 16th were ill; Mrs. Perry ate as many as

her husband and 4 raw ones in addition; on the night of August 17th the son, Frank Perry and 4 others steamed a second pack from the catch of August 16th and one of the children, 7 years old, ate several of these; no one had any ill effects.

Case History - August 16, 1945

Mrs. H. Hear. Case reported to J. C. Medcof was referred to Dr. Gibbons who was working in the Saint John district in late August. See his report.

Case History - August 18, 1945

Mrs. H. Van George. (See remarks on Mrs. Hear's case).

Case History - July 29 and August 10, 1945

August 21. Mrs. Massons (94 years old), mother of Mrs. Joseph Blanchard, on August 19th ate 6 raw clams between 7:30 and 8:00 p.m. that were taken from the bridge flat at Lepreau Basin. She didn't seem to like them as well as usual. At 10:00 p.m. she took very sick but couldn't vomit; helplessly paralysed; hard to talk; severe headaches and backache; tended by Dr. Evans; given castor oil on 20th; still weak and in bed on August 21.

On July 29th (Sunday) the Blanchards brought home clams from Lepreau Basin and Mrs. Massons ate a whole plateful of raw clams without any ill effects.

Case History - August 10, 1945

Mr. Joseph Blanchard (about 65 years old, 160 lbs.), Red Head, N.B. (East Saint John) interviewed August 21 reports eating clams at 5:00 p.m. on August 19th that were fished from bridge flat at Lepreau Basin and steamed on the spot. Three gallons were consumed by four people - his wife and Mr. and Mrs. Henry White; got home at 7:30; felt queer around the mouth and went to bed; by 10:30 numbness had come over arms and legs; he could hardly walk; felt sick at stomach but couldn't vomit; severe headache; unable to work on 20th and still numb. States that during day he and Mr. White drank 15 pints of beer. He was tended by Dr. Evans.

Case History - August 19th, 1945

Mrs. Joseph Blanchard, (a husky woman of 170 lbs, 55 years old), Red Head, F.B. (East Saint John). Interviewed August 21st; states that she shared clams with husband and Mr. and Mrs. White on August 19th; symptoms much same as husband's but more acute; she drank no beer; noted "asleep feeling" about lips first, then face, then hands and arms, then legs and finally whole body; couldn't stand up; severe headache at base of skull; lame back and chills; found it hard to speak clearly; didn't notice anything strange in the taste of the clams; still feels weak.

Case History - August 19th, 1945

Mr. Harry Bandon. Case reported to J. C. Hedeof and referred to Dr. Gibbons for investigation.

Case History - August 19th, 1945

Brother-in-law of Harry Bandon. Case reported to J. C. Hedeof and referred to Dr. Gibbons for investigation.

Case History - August 19th, 1945

Mr. George Nelson of Lawson's Motors on Rotheasy St., Saint John, interviewed August 21st reports he went on a picnic to Lepreau Basin with wife and Wm. Nelson; had a hearty supper of steamed clams and other food including pie; the clams came from the bridge flat and were steamed over an open fire for 20-30 minutes; took home a basketful and ate them steamed as before with friends that night in Saint John; he did not feel normal on trip home but not sick; soon after the night feed he noticed a "driving feeling" about the mouth; vomited and had a headache; no other symptoms. Altogether Mr. Nelson estimates that he ate 50 steamed clams.

Mrs. Nelson and Wm. Nelson shared steamed clams from the same lots eaten by George but these two ate only about a dozen each; neither felt any ill effects.

{See case of Wm. Conway, a guest, reputed to have been ill.}

Case History - August 19th, 1945

Mrs. Jaddus LeBlanc, (slight woman, 130 lbs.), 263 Prince Edward St., Saint John; interviewed August 21st; reports they were on a picnic to Lepreau Basin; they had a couple of glasses of beer there, no hard liquor; on August 19th they dug clams about 4:00 p.m. from the bridge flat and brought them home to Saint John (gave some to Mrs. Mitchell); they steamed these 20-30 minutes over a coal fire in a covered pot; at about 9:00 p.m. she ate about 12 clams; didn't find them as good as usual and within about a quarter of an hour noticed numbness about face and lips; soon extended to hands and feet; dizziness; vomited; couldn't walk; violent headaches at base of skull; ambulance to hospital at 10:15; treatment (?) got intra venus injections; vomited intermittently all day - August 20; still feels weak and dizzy on August 21 but can eat a little and did some house work.

Case History - August 19th, 1945.

Mr. Jaddus LeBlanc (short fat man - 250 lbs.) 263 Prince Edward St., Saint John, N.B. (not interviewed -- case reported by his wife on August 21st); Mr. LeBlanc was at Lepreau Basin on August 19th; during the afternoon he dug clams to take back to Saint John and ate approximately a dozen raw on the flat; during the afternoon he had several drinks of beer; after getting home that night about 9:00 p.m. he ate a great number steamed (several dozen) and drank about half a pint of rum; noticed numbness in face about 9:30 after his wife took sick; vomited a couple of times; soon lost use of arms and legs; taken to hospital in an ambulance but not quite so sick as his wife; treatment ? Back to work on August 21st.

Case History - August 19th, 1945.

Mrs. Henry White interviewed August 22 was at Lepreau Basin on August 19th with the Blanchards; had dinner at 1 p.m.; had approximately one dozen steamed clams -- no more than 12, she is sure -- for supper at approximately 4:30; at 6:00 p.m. she noticed her lips getting numb; her mouth felt full and she found it hard to speak; no trouble with breathing; by 7:00 p.m. her hands and feet were numb and she vomited but could only bring up "water"; a general weakness and dizziness developed and a severe headache that gradually spread all over the head and down the spine; had

a bad night; still sick morning of August 20 and numb throughout her whole body; tended by Dr. F. G. Knoll at noon who administered castor oil; this made her feel better; but still couldn't keep anything on her stomach; on August 21 still weak in the legs and fingers still numb but able to eat and drink a little.

Case History - August 19th, 1945

Mr. Henry White, 55 Thorne Ave., St. John, interviewed August 22nd. Was with the Blanchards at Lepreau basin August 19th; at 4:30 p.m. ate between 2 and 3 dozen clams for supper; these had been steamed for 20-30 minutes over an open fire on the beach in an enamel pot; immediately after they were dug; during the day he had several drinks of beer and some at the time he ate the clams; slept well but woke on the morning of August 20th with numb face, arms and legs and a lame back; could scarcely walk and vomited immediately after getting up; he vomited intermittently all day; in afternoon severe headache at base of skull; was tended by Dr. F. G. Knoll who administered castor oil at noon; had a poor sleep that night; miserable all day August 21; numbness still remained in fingers but otherwise gone.

Mr. White states that for the last 10 years he and his family have gone to Lepreau basin on an average twice a month (whenever the tides served) on Sundays throughout the spring, summer and fall and eaten clams; this is the first time he has had any sign of sickness; his last trip was on July 29th; on that date he ate a hearty supper of clams but suffered no ill effects.

Case History - August 19th, 1945

Mrs. Michael Mitchell (husky woman - 180 lbs.) about 55 years old, 263 Prince Edward St., (top flat) Saint John, N.S. Interviewed August 21st; reports that on the evening of August 19th they received three-quarters of a peck of clams from Mr. Jaddus LeBlanc fished that same day about 4:00 p.m. from the bridge flat at Lepreau basin; these were steamed approximately 20 minutes in a covered pot and eaten at 11:30 p.m. by a group of 8 people; including her husband and two children (17 and 18 years old); the servings were all about the same size containing approximately 30 clam pieces; she also drank a cup and a half of the bouillon; went to bed at midnight feeling normal; woke at 5 a.m. August 20; severe headache at the crown of the head; very dizzy; head "felt big"; hands and

feet numb; great difficulty in walking; dry throat but no difficulty in breathing; tried to vomit but could only bring up "water"; took a laxative at noon; and when bowels moved at 3 p.m. began to feel better; felt normal again at 8:00 p.m. and took a little food; none of rest of family were sick but one of the guests, Harry Randon was.

Case History - August 20th, 1945.

James Davidson (14 years old), Sandy Point Road, Saint John, was in hospital August 21st. His mother was interviewed and she reports that at about 7:00 p.m. on the evening of August 20th James and his brother, Bertram (18 years old) steamed a potful of clams and ate them; exact number eaten not known. They were supplied by neighbours, Mr. and Mrs. Herrall, who had fished them on August 19th from the bridge flat at Lepreau basin and taken them home that night; within half an hour after eating the clams, James complained of numbness in face, hands and feet, of a "floating" feeling and a severe headache; at 8:00 p.m. he was taken to hospital; treatment ?.

Case History - August 20th, 1945.

Bertram Davidson, Sandy Point Road, Saint John, not interviewed. Report by his mother that he ate some of the same steamed clams as his brother James on August 20th; that night he complained of a queer sensation about the mouth and a general "light" feeling when he walked; no paralysis but severe headache; unable to go to work August 21st; felt O.K. on August 22nd.

Case History - July 13th, 1947

Frank Bastenache (60 years old), Saint John, N.B., visited Lepreau Basin area at 8:30 p.m.; ate 8 raw clams, bread, jam and tea, no alcohol; at 9:15 p.m. lips, nose and gums were tingling, nauseated; shortly after noticed fingers and feet becoming numb; vomited several times, no diarrhoea; drank milk; numbness extended from feet to limbs; attended by a physician (Dr. Envoles, Saint John); no treatment prescribed, Dr. Envoles having previous experience with cases of poison.

July 14 -- intermittent vomiting; family brought in another physician who ordered him to the hospital and conducted a complete examination; no treatment.

On the 18th the patient had completely recovered, although still suffering from exhaustion.

The above information was provided on July 18th by Dr. Earl Trask, district health officer (Saint John and Charlotte counties) 9 Dock Street, Saint John, N.S.

Case History - August 28th, 1945.

Mrs. H. D. Hooper, age 37. On August 27 ate approximately 30 steamed clams from mud flats by the Light House at Thorne's Cove (Lower Granville) Annapolis Co., N.S., at 12:30 p.m. At 4:00 a.m. August 28th she suffered numbness of face and lips, difficulty with speech, headache, dizziness, numbness of fingers and toes and arms and legs, backache, abdominal cramps, active bowel movements and a general feeling of weakness. The numbness lasted for over an hour. Effects were off after 15 hours.

Case History - August 28th, 1945.

Ronald Hooper (age 7) on August 27th ate approximately 35 steamed clams. (Other details as for Mrs. Hooper). At 2:00 a.m. August 28th awoke suffering headache, nausea, vomiting, dizziness, backache, abdominal cramps and active bowel movements. The symptoms persisted for 12 hours.

Case History - August 28th, 1945.

Ruth Hooper (age 12) ate approximately 25 steamed clams. (Other details as for Mrs. Hooper). Awoke at 7:00 on August 28th suffering numbness of face and lips, a headache, nausea, dizziness, numbness of arms and legs, backache, abdominal cramps, active bowel movements, general weakness forced her to lie down. Symptoms persisted for 12 hours.

Case History - August 28th, 1945.

Ray, H. D. Hooper (age 44) took approximately 30 steamed clams at 12:30 p.m. August 27th. (See Mrs. Hooper's case history for other details). At 3:00 a.m. August 28th awoke suffering numbness of face and lips, difficulty with speech, headache, a slight nausea, a slight giddiness, numbness of fingers and toes, arms and legs, slight backache, abdominal cramps, active bowel movements, intermittent for two hours. Effects were off after 15 hours.

Case History - August 28th, 1945.

Allan Hooper (age 2 years) ate approximately 20 steamed clams. (Other details as for Mrs. Hooper). Awoke at 6:00 a.m. August 28th suffering difficulty with speech, nausea, vomiting, difficulty with breathing, abdominal cramps and active bowel movements. The symptoms lasted 6 hours.

Notes The long interval between ingestion of the poison and the appearance of the symptoms in the 5 Hooper cases is reminiscent of that in Mr. E. A. King's and is in contrast with New Brunswick observations. Differences in the proportion of the several "factors" composing the poison may explain the differences in symptoms.

III

Ingestion of poison by humans without
ill effects.

Cass History - September 1944

See McGowan family Maces Bay under "Paralytic shellfish poisoning of domestic animals".

Cass History - Winter of 1944-45

Mr. Wm. Lemax, Little Lepreau, N.B., interviewed August 13th. Stated that all last winter averaging at least once a month and often twice, he and his family, four in all, ate clams from Lepreau basin in chowders. They generally use about a quart of meats each time and Mrs. Lemax cooks the clams about three quarters of an hour.

At no time did they suffer ill effects.

Cass History - Winter of 1944-45

Mr. Everett Lemax, Little Lepreau, N.B., interviewed August 13th, stated that all last winter (throughout the season they were considered dangerous), he and his family took clams from Little Lepreau basin on the average of once a week for frying. They used a quart and a half of meats each time as a meal for five people.

At no time did they suffer any ill effects.

Cass History - August 3, 1945

See Samuel Barvell family under "Paralytic Shellfish poisoning of domestic animals".

Cass History - August 5th, 1945

On August 19th Mr. George S. Harvey of Fairville reports that on August 5th he and his family (five in all) took a sack (about 1 bushel) of clams dug from the bridge flat at Lepreau Basin home with them. Some were steamed that night and the rest put in the Kennibecasis river. Half of the remainder were steamed the night of August 6th and the rest steamed the night of August 7th.

None of the family suffered any ill effects.

Cass History - August 5th, 1945

Mr. Percy Lemax, Little Lepreau, interviewed August 17th, stated that on August 5th he and five others of the district dug a half-bushel of clams from Lepreau Harbour, steamed and ate them on the beach; cooked about 30 minutes; had a lot of water in the bottom of the kettles; no ill effects.

Cass History - August 8th, 1945

Mrs. Maurice Gonds reports that on August 8th she and her three children had a meal of steamed clams and that on August 10th a meal of fried clams; they used approximately a bucket each time; these were all fished from Davis' cove in Focologan harbour, not far from the rocks where Miss LeBent gathered the mussels that poisoned her a few years ago.

No ill effects.

Cass History - August 8th, 1945

Mr. Harvey Hoss and six other people of the district on August 8th ate approximately 2 pecks of steamed clams on the beach at Lepreau harbour. No one was ill or felt abnormal in any way. Interviewed August 13th.

Cass History - August 10th, 1945

On August 10th when the writer was present he noticed a number of the shuckers at Mr. Everett Lemax's plant at Little Lepreau were eating an occasional raw clam taken from Lepreau Basin and Lepreau Harbour while they were shucking them.

August 17th. None of the shuckers suffered any ill effects from eating clams on August 10th as far as could be learned from Mr. Lemax when he was questioned to-day.

Cass History - August 10th, 1945

Mrs. M. B. Boyne, Lepreau, N.B., interviewed August 17th. She stated that she and her young daughter ate a small chowder containing about 12 clams on August 10th. These were part of the day's pack of Everett Lemax's shucking plant (this lot assayed and condemned by the U.S. Food & Drug lab. see report).

No ill effects.

Case History - August 13th and 14th, 1945

August 13th. Mr. Cyrus Shaw of Maces bay, N.B., had a peek and a half of Lepreau basin bridge flat clams dug that day in the wood shed when the writer called. The family proposed having them the day following.

August 17th. The Shaws were visited again. They reported having a party of six people who ate all the clams for supper on August 14th as a choulder -- no ill effects on any. Those involved were Mr. and Mrs. Harvey C. Smith, Bristol, Conn., U.S.A., Mr. and Mrs. Cyrus Shaw, Maces bay, and Mr. and Mrs. Navinney, Maces bay.

Case History - August 15th, 1945

Mr. G. E. Anderson, an airman from Ontario or Manitoba, and his wife and little girl who lived for three weeks in a tourist cabin at Lepreau Harbour (Mink Breck) owned by Mr. W. E. Galbraith. The Andersons left Lepreau on August 15th, 1945, but Mr. Galbraith was interviewed on August 17th and he reported that on the night of August 15th they had eaten about 6 quarts of Lepreau harbour clams steamed and suffered no ill effects. Every few days during the three weeks of their stay the Andersons had taken similar quantities and had never been ill.

Case History - August 15th, 1945

August 17th. Mr. and Mrs. Cyrus Shaw report having eaten a second choulder of Lepreau Basin bridge flat clams on August 15th together with Mr. and Mrs. Rogers of Rumford, Maine, and Mr. and Mrs. H. C. Smith of Bristol Conn., which contained approximately 2 quarts of meats. No ill effects.

Case History - August 15th and 17th, 1945

August 17th. When the writer called at the home of Mr. Norman Cassidy five people (members of the family) were eating a potful (about a gallon and a half) of steamed clams fished earlier that day from the bridge flat in Lepreau basin.

August 20th. The family was visited again. They stated that they had eaten all the clams in the pot and that none had been ill.

Also report that on August 15th four people of the family had used a half-bushel of clams, half were fried for dinner, the rest put in a choulder for supper. No ill

Cass History - August 17th, 1945.

Mrs. Charles Cannhall (about 45 years old, about 190 lbs.), Lepreau, N.B. interviewed on August 17th, states that on August 2nd she ate a small bottleful of shucked clam meats (about two dozen) ~~and~~; these were brought to her by one of the shuckers working for Mr. Everett Lomax of Little Lepreau and were part of the day's pack. She eats clams only at rare intervals. No ill effects.

Cass History - August 17th, 1945.

August 17th. The writer, J. C. Madgoff, ate six steamed clams from the potful that was being eaten by the Norman Cassidy family when he called on them. Four of these clams were well done, i.e., the shells were gaping wide, -- the other two were not too well cooked and were not gaping.

No ill effects were felt.

Cass History - August 18th, 1945.

Austin Lomax, Little Lepreau, N.B., interviewed on August 20th. Reports that on August 18th, he dug a quart of round clams from Little Lepreau basin and had them fried for supper. He suffered no ill effects.

Cass History - August 26, 1945.

Five people - 2 women and 3 men from Nova Scotia spent the week end of August 26th, 1945, in two of Mr. W. K. Galbraith's tourist cabins at Mink brook (Lepreau harbour). On Sunday evening (August 26th) according to Mr. Galbraith, they ate about 10 quarts of steamed clams and reported to him Monday morning that they had suffered no ill effects. Mr. Galbraith had warned them that the clams were considered dangerous but they ate them nevertheless.

IV

PARALYTIC SHELLFISH POISONING OF HUMANS 1945

by R. J. Gibbons, M.D.

Dept. Nat. Health and Welfare

SUMMARY - Nova Scotia

- 1934 - Dr. Donovan, St. John, N.B., states that in 1934 he attended four patients at the Digby-St. John boat who had become acutely ill after consuming shellfish at Digby. One case was so collapsed that he thought the man was going to die. At the time he did not look for neurological symptoms but believes that these were cases of shellfish poisoning.
- 1936 - Two deaths at East Ferry: One of these ate only quahog. Dr. Fother (Weymouth) who was M.O.H. in the district at the time of the two deaths reported that there were 30 or 40 non-fatal cases at the same time.
- 1938 - Dr. Belliveau (Meteghan) saw two cases of mussel poisoning in 1938.
- 1945 -- (see other sheet)

NOVA SCOTIA - 1945

Case (?) Mrs. Peppy - James Street, Yarmouth

Onset - August 31

Source of clams - Fried clams purchased from store in Yarmouth.
Original source of clams Yarmouth Bar.

Conditions - At approximately 12.00 p.m. (midnight) after retiring to bed this woman ate 3 fried clams. She had had supper at 5.30 p.m. and eaten nothing since. No alcoholic beverage taken. Three other persons in the family ate these clams with no ill effect.

Symptoms - She did not go to sleep as she "did not feel well" after eating the clams. About a half an hour after she became very itchy across the shoulders and in the upper arms, and the thighs. At about three hours she felt a "driving" sensation about the mouth. She at this time developed diarrhoea but no abdominal cramps or pain. She felt "as though she couldn't get her breath". Vision was blurred and everything looked "small and as though far away". At four hours she vomited; she had a "floating" sensation in her legs as though she were stepping very high and the steps on the stairs felt about three times as big as they should be". She felt "generally weak". By seven hours symptoms had all cleared up.

Notes -- Two or three clams which were left over were thrown out to the cat next morning. The cat vomited sometime within two hours but showed no other symptoms.

Comment - The extreme itching at the onset of symptoms might suggest an allergic factor. Mrs. P. had not eaten clams in the past three years but had no symptoms when they were eaten previously. She has never been subject to any gastric upset.

Five Cases reported by Dr. E. S. Campbell

Family of Reverend H. D. Hopper at Lower Granville, Annapolis County.

Of seven in the family, five had clams at noon on August 25th/45 and became acutely ill during the early evening of the same day. All recovered although Mr. and Mrs. Hopper were very ill.

These clams were collected from the Lower Granville Shore of the Annapolis Basin probably at Thorne's Cove.

See report by J. C. Hedcof for details on these.

SUMMARY - NEW BRUNSWICK

About 1939 - Case Miss LeDent.

1945 - 21 cases plus one mild doubtful case (Mr. Conway
who ate canned clams)

August 4? - 1 case

August 5 - 1 case

August 16 - 1 case

2 cases date unknown

August 18 - 2 cases

1 case (as above ate
canned clams)

August 19 - 12 cases

August 20 - 2 cases

—
19

N.B. August 19th was a Sunday on which the tide was right
for many picnickers to collect clams and therefore
many were exposed on that date.

Case - Mrs. Tonning (Wife of Dr. Tonning, physician on the staff of Saint John General Hospital).

Onset - August 7th

Source of Clams - Focologan Bay

Conditions - Had evening dinner about 7.30 p.m. and one hour later ate about a dozen clams which had been steamed until the shells opened. No beer or other alcoholic beverage taken.

Symptoms - About an hour and a half after eating the clams, she became nauseated and developed painful numbness in the arms and legs. On arising the next morning, she also noticed the same type of numbness about her mouth and this remained for the greater part of the day. She still felt nauseated, but did not vomit and did not fully recover until about the third day. This history was corroborated by Dr. Tonning.

Case - Mr. George Nelson - c/o Lawsons Hotel, Bethany Street, Saint John, N.B.

Onset - August 19th

Source of clams - Lepreau Basin

Conditions - Had a light lunch at noon and about 4.30 p.m. ate a large number, he states about 50, clams which had been cooked in hot water about 30 minutes. He drank about a half cup of the water in which the clams were cooked and also drank the water out of the shell. Along with the clams he ate soda biscuits, a sandwich, cake and tea. No beer or other alcoholic beverage was taken.

Symptoms - About three hours after eating the clams he felt very thirsty and became nauseated, vomited, and had a headache, and he noticed a "drawing" feeling about the mouth. He developed slight diarrhoea about 4 a.m. and had abdominal cramps all the next day.

N.B. - Mr. Nelson noticed at the time of collecting the clams that the siphon of the clam was not withdrawn when the clam was disturbed, which he now believes is evidence that the clams were not normal.

Case - Mr. Henry White, 55 Thorn Ave., Saint John, N.B.

Onset - August 20th.

Source of clams - Lepreau Basin

Case - Mr. Henry White (Con'd)

Conditions - At 4.30 p.m. he ate about two dozen clams which had been steamed 3 minutes over an open fire. During the day he had about four quarts of beer, some of it at the time he ate the clams. He states that he was rather drunk during the evening and may not have noticed any early symptoms. He slept soundly during the night.

Symptoms - On arising at 7 a.m. the following morning he could hardly stand up. His legs were numb up to the knees and his arms to the level of the shoulder and his lips and face felt numb. Almost immediately after arising he vomited and continued to vomit intermittently all day. He had a severe headache. This man was in bed for two days. The numbness of the legs and arms began to leave on the second day though the lips and face were still numb throughout the day. He was attended by Dr. F. C. Knell.

Case - Mrs. Henry White, 55 Thorn Avenue, Saint John.

Case - August 19.

Source of clams - Lepreau Basin.

Conditions - Had dinner at about 12 noon and at 4 p.m. ate not more than a dozen clams which were boiled about 3 minutes until the shells opened. About 6 p.m. she noticed her lips getting numb and had difficulty in talking because her tongue felt numb. "She couldn't get the words out." By 8 p.m. both arms were numb and tingling up to the shoulder, the legs numb and tingling to the knees and she had no feeling in the face or neck, even on pinching herself. There was also no feeling in the feet. She states they felt as though they were wrapped in flannel. She developed a severe headache, general weakness and dizziness and vomited. She got up the following morning but had to go back to bed immediately. She was very sick and nauseated throughout the day and marked numbness still persisted. The numbness did not pass off until the third day. She was attended by Dr. F. C. Knell.

Case - Mrs. Joseph Blanchard, Red Head, N.B. (East Saint John).

Case - August 19th.

Source of clams - Lepreau Basin.

Conditions - (Mrs. Joseph Blanchard)

Had dinner at 12 noon and about 4.30 p.m. ate five or six dozen clams which had been steamed for about 20 minutes. Nothing else was eaten with the clams and no bouillon was drunk. No beer or alcohol beverage was taken.

Symptoms - At about 9 p.m. she first noticed numbness about the face and this rapidly extended over the arms, legs, and finally the whole body. She was nauseated but unable to vomit. Her tongue felt thick and she was unable to speak. She could not hold a glass of water because she could not tell where her hand was as she had what she described as a "floating" sensation in her arms as if her arms were floating about her head. She was sick all the next day and the numbness did not begin to clear up until late on that afternoon. She was attended by Dr. Evans.

Case - Mr. Joseph Blanchard, Red Head, N.B. (East Saint John)

Onset - August 19th.

Source of clams - Lepreau Basin

Conditions - Had dinner about 12 noon and ate five or six dozen clams at about 4.30 p.m. along with one glass of the bouillon. He had a few quarts of beer just before eating the clams. At about 7.30 p.m. he noticed a queer feeling around the mouth and went to bed. By 10.30 the numbness had extended to the arms, legs, and over the whole body. He was nauseated but could not vomit. He could hardly walk because his legs felt very weak, but he was not dizzy. He had a severe headache. He was unable to work on the following day as the numbness still persisted. He was attended by Dr. Evans.

Case - Mrs. Mansons, Red Head, N.B. (East Saint John)
(Mother of Mrs. Jos. Blanchard).

Onset - August 19th

Source - Lepreau Basin

Conditions - Ate a light supper about 5 o'clock. At about 8 p.m. she ate 6 raw clams.

Symptoms. At about 10 p.m. she became very ill. She was nauseated but could not vomit. She had cramps and a bloated feeling. There was marked numbness and tingling of the legs,

arms, face and all the trunk. She could not stand and had to be lifted into a chair. She had severe headache and backache and found marked difficulty in speaking. She states that she thought she was going to die. She was still weak and in bed two days later. She was attended by Dr. Evans.

Case - Mr. John Perry, 50 Beakonsfield Ave., Saint John, N.B.

Onset - August 16th

Source of glass - Lepreau Basin

Conditions - At about 8 p.m. he ate about two dozen clams which had been steamed for approximately 15 minutes in a covered pot. Along with the clams he had a drink of rum.

Symptoms - About 8.30 he complained of a queer feeling about the mouth and thought this might have been due to the liquor and decided to go for a walk. He walked around outdoors until about 10 p.m., hoping to clear his head but instead he became worse. His arms and legs became numb up to his elbows and knees respectively and he felt very weak. He had no headache but was extremely dizzy and his legs and arms felt useless and he was extremely weak. A nurse residing in the house who saw Mr. Perry stated that he was in a pitiable condition and looked as though he were going to die. He had to be carried to bed. Arms and legs were still useless on the following day. By the second day he had recovered the use of his limbs but still felt very weak and was off work for four days. He was attended by Dr. F. G. Knolls.

Case - Miss Alice Manuel 49 Celebration Street, Saint John, N.B. At the time of investigation by Dr. R. J. Gibbons, this girl had moved and could not be located. The history is taken from Dr. Nedecf's report).

Onset - August 17th.

Source of glass - Lepreau Basin

Conditions - At 3 p.m. she ate about a dozen and a half raw clams.

Symptoms - At 3.30 p.m. she began to feel ill. Her lips and face felt numb and swollen. By 5 p.m. her knees and feet were numb. She felt weak all over, had a severe headache and had difficulty in breathing. She was nauseated and vomited. She was attended by Dr. MacDonald who sent her directly to the hospital at 8 p.m. She was unable to stand and had vomiting spells all the next day. The following day she was able to walk and on the fourth day was for the first time able to keep down her food and the other symptoms had disappeared.

Case - Miss LeDent, North Bay, Ontario, 1936.

Case history reported by Mr. Maurice Conde, Pocologan, N.B., at Bay View Cabins, Davis' Cove. Case reported to Dr. Medecof by Mr. Conde.

Conditions - For several successive years, Miss LeDent, a middle-aged, unmarried woman, spent July and August at the Bay View Cabins, then managed by Mrs. Evans by whom Mr. Conde was employed. At low tide one afternoon in August or July Miss LeDent gathered mussels from the rocks behind the cabins and ate them steamed for her supper. At midnight or thereabouts, when Conde was closing the gasoline station and straightening away for the night, he noticed a light in the LeDent cabin and heard moaning from within.

Symptoms - He entered and found the woman prostrate on the bathroom floor; she had vomited considerably and was in great pain but quite incapable of moving arms or legs; while Conde was getting her into bed she complained of being paralyzed and of severe headache and abdominal pain; she was taken to Saint John General Hospital after some delay and failure in getting a doctor locally. In Saint John they pumped out her stomach but she was so weakened that she had to be kept in the hospital for several weeks before discharge. On August 25/45 the writer visited the rocky point where according to Conde the mussels were gathered. Both Mytilus and Modiola are present but the latter is the more abundant and a sample was taken for assay. It seems probable that it was responsible for the poisoning of Miss LeDent.

(Further investigation of this case is proposed)

Mr. Harry Randon - 22 Brunswick Street, St. John, Age about 35.
Interviewed September 6.

On August 19 - ate 12-15 clams at home of Mrs. Michael Mitchell (see Mitchell case). Clams were steamed about 20 minutes in a covered pot.

No bouillon taken.

Had several drinks of beer and liquor before and after eating clams at 11.30 p.m. He did not notice anything until next morning but states that he was fairly drunk by the time he went to bed and that any early symptoms would probably not have been noted. Next morning his mouth felt numb and "all drawn up". His right leg was numb to level of the knee and right arm to level of elbow. Does not remember noting anything wrong with left arm or leg. When he got out of bed he staggered and "felt as though he were still drunk". The numbness lasted all morning. He started to drink again that afternoon and by the next (second day) when he awoke the numbness in his mouth and limbs had left. No headache other than what might have been due to the drinking. No nausea, no diarrhoea.

Mr. (1) Brother-in-law of Harry Randon

History from Harry Randon. His brother-in-law had visited him from Boston and partook of the same meal of clams at Mrs. Mitchell's residence. He ate more than Mr. Randon. Drank beer and liquor with Mr. Randon.

When he awoke next morning he felt numb around the mouth and in the hands. No other definite symptoms. Did not say anything about it until talking with Randon later in the day as he thought his wife would blame it on the drinking.

Mrs. Michael Mitchell - 263 Prince Edward Street, Age about 50.

On August 19 received 3/4 peck of clams from Mr. J. Leblanc taken from Lepreau Basin. These were steamed approximately 20 minutes in a covered pot. These were eaten by a group of eight people including Mr. Harry Randon. Mr. Randon's brother-in-law and his daughter Audrey Mitchell (see histories of these cases). About 30 clams were consumed by Mrs. Mitchell at 11.30 p.m. No other food was taken. Last previous meal at 6.30 p.m. No bouillon from clams was drunk. No alcoholic beverage had been consumed. Felt all right going to bed but awoke at 5.00 a.m. with severe headache "at the back of the head" (crown and occipital). She felt "light headed" i.e. dizzy. Her mouth felt "tight" and her lips were numb and she had partially lost the power of

chewing. Her hands and arms to the elbow were numb as also were her feet and legs up to the knees. At 8.30 a.m. she felt nauseated but could not vomit. There was no abdominal pain or cramps and no diarrhoea. No difficulty in breathing. At noon she took a laxative which acted about mid afternoon. By about 8.00 p.m. she felt normal again.

H.B. Her husband ate about the same number of clams and also drank 2 cupsful of the bouillon. He suffered no ill effects.

Miss Audrey Mitchell

Ate about same amount of clams as Mrs. Mitchell. She drank no bouillon. Had no other food with clams. Previous meal 6.30 p.m. About 5 minutes after she finished eating the clams she went to get a drink of water. She remarked the water tasted funny and that her "tongue felt heavy" and that she felt numb around the lips. Nothing further was noted and this was gone when she awoke next morning.

Mrs. V. H. Van Scoyoc - c/o Mrs. H. Ellis, Rothersey, age about 35.

On August 18 collected seven clams at New River. These were steamed 15 minutes. One clam which did not look good was discarded and at 10.00 p.m. she ate 3 clams and drank half the broth. (The other 3 clams and the rest of the broth were consumed by Mrs. Heare - see case report). Previous meal was at 6.00 p.m. Immediately after consuming the clams and broth she went to the kitchen to get some soda biscuits. On starting to eat these she noticed that her tongue felt funny and she could not taste the soda biscuits at all. Her tongue felt numb and as though it were swelled up and she could not articulate properly. Within an hour she felt dizzy and nauseated but did not vomit. She had an "apprehensive feeling", but no numbness or tingling in hands or feet. No abdominal pain, no diarrhoea. Felt all right next morning except for some loss of appetite.

Mrs. H. Heare (History given by Mrs. Van Scoyoc)

Shared clams and bouillon with Mrs. Van Scoyoc. Ate 3 clams and half the bouillon. Felt same numbness about the mouth as Mrs. V. S., tongue felt swelled. Was nauseated during the night but did not vomit. Felt all right next day.

William Genser + Lawren Motors

Onset - First week in August

Source - Canned elms.

Conditions - This man ate a bowl of chowder made from canned elms at noon.

Symptoms - About 3.00 p.m. he noticed a numbness and tingling about the mouth. This lasted most of the day but was gone next morning. There were no other symptoms. He thought little of this at the time but recalled it later when a fellow worker (see case George Nelson) became ill at a later date after eating elms.

Case: Mr. J. LeBlanc, 263 Prince Edward Street, St. John, N.B.

Onset: August 19, 1945.

Source of clams: Lepreau Basin

Conditions: He ate several dozen clams raw at about 4.00 p.m. and during the afternoon had several drinks of beer. After getting home he ate several dozen steamed clams at 9.00 p.m. (the same batch as eaten by Mrs. LeBlanc) and drank about $\frac{1}{2}$ pint of rum.

Symptoms: About 9.30 p.m. after his wife took sick he noticed numbness about his face. He vomited and had abdominal cramps. He had very severe headache. He soon "lost the use of his arms and legs". He was taken to the hospital about 11.00 p.m. The interne at the hospital states that he vomited a considerable quantity of gastric content in the ambulance and when he entered the C.P.D. was staggering all over the corridor as though drunk but there was no smell of liquor on his breath.

Hospital Record: Case #63789, LeBlanc, J., 263 Prince Edward Street, Business - 237 Prince Edward St. (Dr. Malsem)

Adm.: August 19, 1945, 2320 hours

Adm. Diagnosis: Acute food poisoning

Final diagnosis: Same

Personal History and Physical Examination: Blank

Nurse's Record:

Aug. 19 Adm. T. 97 P. 88 R. 20

Complaints - vomiting

Vomited large amounts of undigested food following adm. Slept well after midnight.

Aug. 20 - Slept most of morning

1130 hours - vomited considerable amount of water vomitus. good night.

August 21 - disch.

Treat - no specific.

Lab. Urine - acid 1032

Alb. - neg.

Sugar - neg.

	T.	P.	R.
August 19 (Adm.)	97	86	20
" 20 (0900)	97	96	22
" (1700)	97 ⁶	84	22
" (2100)	97	80	20
" 21 (0500)	96 ⁶	84	20
" (0900)	97	80	20

Case: Mrs. J. LeBlanc, 263 Prince Edward Street, St. John, N.B.

Onset: August 19, 1945.

Source of Clams: Lepreau Basin

Conditions: Clams were steamed about 30'. She ate about 12 at 9.00 p.m. Previous meal at 1.30 p.m. Had two glasses of beer during the afternoon. Ate one slice of bread and one glass of milk after eating the clams. No clam bouillon was ingested.

Symptoms: In about 15 minutes she noticed numbness about the face and lips and within a half an hour numbness in the hands and arms extending to the elbow and in the feet and legs extending to the knee. There was marked headache particularly in the occipital region. At 1/2 hour she felt nauseated and vomited. There was no diarrhoea and no abdominal cramps or pain. She felt very weak. She had a "floating sensation" in the legs and arms and could not stand by herself before going to hospital at about 11.00 p.m. There was no difficulty in breathing but she had some difficulty in speaking because her "tongue felt thick". Went to hospital about 11.00 p.m. She "felt so sick and weak in hospital that she had to be moved about by the nurse".

Hospital Chart: Case #63790, LeBlanc, Mary Elizabeth,
263 Prince Edward Street, age 31, (Dr. Malsem)

Adm.: August 19, 2320

Adm. Diagnosis: Acute food poisoning

Final " : Same

Personal History and Physical Examination: Blank

Nurse's Record:

August 19 Adm. T 96^B F. 80 R. 20

Complaints: nausea and vomiting

Weakness and numbness of body

Patient vomited a considerable amount of brown watery vomitus during the night.

2 A.M. - 1000 cc. glucose sal. intrav.

5.00 A.M. - T. 98 F. 76 R. 20

5.15 A.M. - Complained of headache

Bismuth and Carrie Oxalate q 2 h - poor night

August 20 - Still nauseated, vomited small quantity of watery vomitus 8 A.M.

Vomited small amount 6 p.m.

Good night.

August 21 - discharged 4 p.m.

Lab. - Urine - Alb. 1024

Sugar 2.5%

No acetone

Fat present

Treat. August 19 - Bis. and Carrie Ox q 2 h for 3 doses.

	T.	F.	R.
Adm. August 19	96 ^B	80	20
20	98 ²	90	22
(noon)	99	86	22
(5.00 p.m.)	98	82	22
(9.00 p.m.)	98 ^B	72	20
21 (5.00 a.m.)	97 ^B	80	20
(noon)	98 ⁴	88	22

Case: James Davidson (age 14 years) Sandy Point Road, St. John, N.B.

Onset: August 20, 1945.

Source of Clams: Bridge flat Lepreau Basin on August 19, 1945.

Conditions: Clams were steamed but number eaten is not known (History given by Mrs. Davidson). Clams were eaten about 7.00 p.m. with no other food. Last previous meal 5.00 p.m.

Symptoms: After eating clams he started to ride into St. John on his bicycle but had to return home "because he could not hang onto the bicycle handles". He noticed numbness in the face, arms and legs within $\frac{1}{2}$ hour. He was taken to hospital about 9.00 p.m. At this time he had to be assisted out to the car as "his legs were loose and he had a floating sensation". At the hospital he could not remember having talked to his mother before leaving home and when given a glass of "medicine" to drink he couldn't hold the glass. There was no diarrhoea or abdominal pain at this time and he did not vomit until after reaching the hospital. He complained of severe headache.

Adm. Diagnosis: Acute food poisoning

Prov. Diag.: clam " "
Final " ; " "

Adm.: - August 20

Disch. - August 23

Condition on discharge: good

Personal History and Physical Examination (August 23)

Admitted with diarrhoea and vomiting and numbness of arms and legs of two days duration.

Remainder of history no contributory

Physical examination - negative

No diarrhoea and vomiting or numbness while in hospital

Discharged in 3 days

Nurses Record

August 20 - Admission - complaints, pain in epigastrium, vomiting ---- complaining.

August 21 - No vomiting, not complaining

August 22 - Not complaining

23 - Discharged at 11 a.m.

Lab. - V.B.C. 8000 (August 22)

No treatment recorded

	T.	F	R
August 20 (p.m.)	984	116	20
21 (a.m.)	97	100	20
(noon)	978	100	20
(p.m.)	984	70	20
22 (a.m.)	976	80	20
(p.m.)	98	80	20

Case: Mrs. Davidson, Sandy Point Road, St. John.

Onset: About August 4.

Conditions: At 7.30 p.m. she and her husband ate clam chowder at Sam's Oyster House. She had the clams, crackers and water only, but she drank all the bouillon from her dish while her husband (who remained well) did not drink any of his.

Symptoms: About one hour later, while attending a show her hands and feet became numb "as though they were tightening up". No numbness was noted about the lips. She had a severe headache and felt nauseated but did not vomit; she had to leave the show. She felt dizzy when she left the theatre but there was no weakness of the limbs. There was no abdominal pain or diarrhoea. She felt normal the next morning.

Case: Bertram Davidson, Sandy Point Road, St. John, Age 18.
(history from his mother)

Onset: August 20.

Source of Clams: Bridge Flat Lepreau Basin, August 19.

Conditions: Ate same steamed clams as his brother James at about 7.00 p.m. but did not eat as many. He had some bread along with the clams.

Symptoms: That night he complained of feeling numb around the lips and "a feeling of lightness in his legs when he walked". He felt nauseated but did not vomit. He had diarrhoea the next day and did not go to work but he felt alright on the following day.

Case: Arthur Haché, 98 St. Patrick Street, St. John.

Onset: August 5

Source of Clams: Naves Bay or far side of shore.

Conditions: At 4.30 he ate about two dozen raw clams. He did not drink the juice and he washed the clams in water before eating. At the same time he ate one bun, some soda biscuits and some wild raspberries. He had consumed no alcoholic beverage. Last previous meal at 12.00 noon. He had had diarrhoea before eating the clams.

Clinical History: About a half an hour after eating clams he noticed a numbness and "pins and needles" feeling about the lips. Then by forty minutes his legs and arms began to feel weak. At about one hour he vomited a "lot of clams". He got on his motorcycle to go home, but after travelling five miles had to abandon the motorcycle and he went the rest of the way in a truck. While driving the motorcycle he noticed considerable difficulty in "getting his breath". In the truck his legs and arms were very weak; he could lift them but couldn't hold them up; they would fall down. His neck was weak and his head wobbled all over with the motion of the truck. He arrived home about 7.00 p.m. His legs and arms were very weak, speech was thick and he "could not draw his tongue in when he tried to smoke a cigarette". His legs were numb to the level of the knee and hands and arms to the level of the elbow. He had severe headache particularly "in the back of the head". His whole face felt numb. Was taken to hospital in an ambulance where at 8.00 p.m. his stomach was washed out (with soda bicarbonate solution). He was held in the recovery room of the O.P.D. There he tried to roll over on the couch and could not balance himself and fell onto the floor. By 2.00 A.M. power seemed to be returning in his legs and he tried to get dressed but fell over when he tried to put on his shoes. At 3.00 A.M. he was admitted to the hospital ward. Throughout the night and until about 10 A.M. next morning he had "difficulty in breathing". On the following day his strength was returning but intermittent occipital headache persisted. By the third day he was symptom free and was discharged from hospital that afternoon.

Hospital Report: GPD #14703, Arthur Haché, Age 49
98 St. Patrick Street, Long sherman, Case #63470

O.P.D. Report:

Complaint - nausea and vomiting, pain in abdomen, patient had been eating raw clams.

August 5, 1945 - stomach washed out with soda bicarbonate, return slightly cloudy 8. p.m. Frosst 222 ll given. 9. P.M. - Bismuth and cerri oxalate powder 9.15 p.m.
T. 98 F. 72 R. 20 B.F. 126/66.

August 6 - To remain in recovery room overnight
 Unable to walk (Dr. Kincairdi)

In Patient Reports

Nurse's Report:

August 6 (3 p.m.) admitted - complaint loss of function of limbs.

August 7 - Able to move about and use limbs

August 8 - Discharged at 1.15 p.m.

Cases: Arthur Hache (cont'd)

Personal History and Physical Examination: Admitted to hospital complaining of diarrhoea and vomiting and loss of function and lower limbs one day after having eaten clams. Remainder of history non contributory.

Physical - Thin poorly developed man apparently afebrile lying comfortably in bed in dorsal decubitus.

Erge - React to I & A.
Fundi normal

Heart - Rate 80, rhythm regular, sounds good quality

Abd. - No. V. masses or rigidity. Somewhat tender in epigastrium.

Extremities - no weakness or paralysis noted on examination (one sheet dated 6th and following sheet dated 8th.

		T.	F.	R.	
August	6	98.4	80	20	
	7	98	80	20	A.M.
		98.6	80	20	P.M.
	8	97	80	20	A.M.

Urine	S.g. 1012	Reaction sl. alk.
	Casts none	Blood none
	Pus 1/HFF.	Crystals phosphate

Adm. Diagnosis - For investigation

Key to cases reported in tables 16 and 17 of

"Paralytic Shellfish Poisoning on the Canadian Atlantic Coast".

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Key to Table 16.

<u>Cass No.</u>	<u>Name</u>
1	Miss A. Mitchell
2	Mrs. H. Hear
3	Mrs. W. H. Van Seayes
4	Brother-in-law of Harry Randen
5	Mrs. Tenning
6	Mr. George Nelson
7	Bertram Davidson
8	Mrs. Davidson
9	James Davidson
10	Mr. E. H. Ring
11	Mr. John Ferry
12	Mrs. Mitchell
13	Mr. Harry Randen
14	Mr. J. Blanchard
15	Mr. J. LeBlanc
16	Mrs. J. Blanchard
17	Mrs. Massone
18	Mrs. H. White
19	Mr. H. White
20	Mrs. J. LeBlanc
21	Mrs. Hopper
22	Rev. Hopper
23	Ruth Hopper
24	Douglas Hopper
25	Miss Alice Manuel
26	Mr. Arthur Hache
27	Hopper
28	Miss Le Dent.

Key to table 17.

Casa No.

Name

Non-residents of shore communities.

- 1 Mrs. Maxson
- 2 Mr. Davidson
- 3 George Harvey family - five members
- 4 Mr. and Mrs. Rogerson
- 5 Mr. Anderson, wife and little girl
- 6 Mr. and Mrs. Rogerson
- 7 Mr. and Mrs. H. C. Smith
- 8 Mrs. Perry
- 9 Party of 5 at home of John Perry
- 10 Mr. H. Mitchell
- 11 5 visitors at Galbraith's cabins, Mink Brook, N.B.

Residents of shore communities.

- 12 Mrs. Charles Campbell
- 13 Mr. Perry Lemax and five others
- 14 Mr. Harvey Hope and six others
- 15 Mrs. Conde and three children
- 16 " " " " "
- 17 Mr. and Mrs. Cyrus Shaw
- 18 Mr. and Mrs. McWhisney
- 19 Mr. and Mrs. Cyrus Shaw
- 20 E. Cassidy family - four members
- 21 " " " " "
- 22 " " " five "
- 23 Mr. J. C. Medcuf
- 24 Mr. Austin Lemax

Other cases not listed in table 17 (see Part I of present report)

- (4) Samuel Barwell
- (11) Wm. McGeann

Table 5. The abundance composition of the birds in
 various parts of the prairie in the winter
 (Jan. - Feb.) of the year 1911.

Number of birds

Species	Number of birds																				Total	No. of pairs	No. of flocks
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Section 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Section 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Section 1 & 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0