

General, Commercial "Land"

CHALEUR BAY

LAND ISLAND

PRODUCTS

1887-8

WITH NET & ROD

BY JOHN MOWAT



PRINTED AT THE "SEABOARD ADVANCE" OFFICE,
CHATHAM, N. H.

CHALEUR BAY

AND ITS PRODUCTS FOR 1887--8, WITH NET AND ROD.

BY JOHN MOWAT.

The Bay of Chaleur now so well known for its cod, lobster and salmon fisheries, extends some 200 miles inland nearly parallel with the St. Lawrence. Its middle forms the boundary between Quebec and New Brunswick. The Counties of Bonaventure and part of Gaspé are on its north side, and Gloucester and Restigouche on its south. From being 30 miles wide at its entrance, it narrows to 3 at Dalhousie 180 miles inward. Above this point is the estuary extending 20 miles to head of tide water. The great cod banks extend some 40 miles outside its entrance, and inward some 60 miles. The lobster fishery is on both sides on its shores. There are in the County of Gaspé bordering on the Bay 3 rivers worthy to be called salmon rivers, the Dartmouth, York and St. John. In Bonaventure there are the Grand Cascapédia and Bonaventure. In Gloucester county on the south, we find the Nepisiguit, a noted river, although obstructed by insurmountable falls 20 miles from its mouth. The great Restigouche, with its branches, is its grand fresh water continuation extending north and west 140 miles, and giving a water surface or continuation of tributaries, on which salmon spawn, of nearly 400 miles, and is the nursery for the large proportion of salmon caught in the Bay. To show this, on the south side, between Nepisiguit river and head of tide water, a distance of 70 miles, are some 110 stations or stands of salmon nets, returning as their catch, by Fisheries Report of 1887, 400,000 lbs. On the north shore from Cascapédia river to tide head, 60 miles, are some 60 stations returning 165,000 lbs.—total, 565,000 lbs, and as no other salmon streams intervene, those must, of necessity therefore be Restigouche fish making their way upward. How many of these fish are caught between those points and the entrance of the Bay cannot be ascertained, but we do know from the size of the fish that the great majority of the Gloucester-caught fish, are Restigouche salmon, and the fishermen acknowledge the fact. Those fishery returns for 1887, to which I intend confining myself, are the most complete ever issued, and give us the following figures as the salmon catch for

Restigouche County	271,700 lbs.
Gloucester do.	386,000 "
Bonaventure do.	203,700 "
Gaspé County to Ship Head.	110,000 "
Add for anglers' catch	50,000 "

1,021,400 lbs total caught
in Bay of Chaleur for 1887. The whole of New Brunswick for the

year, including 150 bbls. salted (where we are not told) is only 1,353,000 lbs.

From Nova Scotia we have 2384 bbls. salted and from Labrador 491,000 lbs. fresh, both combined not equal to Bay Chaleur.

For the province of Quebec the figures are 340,000 lbs., which includes salted and preserved. Consequently, taking the figures as we find them and subtracting from Quebec and New Brunswick, the quantity returned for the four counties on Bay Chaleur, we find Quebec province with only 207,000 lbs. and New Brunswick with 638,000 lbs. the Bay of Chaleur having 110,000 lbs. over both provinces. In analyzing the figures given us in the return, the two counties in New Brunswick with a coast line, not exceeding 140 miles, but probably having 30 or more net stations, return double the quantity of fish that Gaspé and Ponaventure do, although those counties have a longer coast line by 60 miles, and they have at least five fine salmon rivers, besides some minor ones. Consequently, so far as the inducement is concerned of drawing a salmon to fresh water, or in search of its own river in its migration from sea, certainly the north side of the Bay has all the odds in its favor. I believe it has, but there are three reasons why it is behind:—first, less nets by probably 60 stations, second, Quebec netter dare not set the trap or patch net, as set in New Brunswick, if so it would be confiscated. He cannot use any other mode, excepting the old hook or wing, without a bottom. Third, the Quebec netter pays 40c. per 200 lbs. fish caught, the New Brunswicker pays 3c. per fathom of net used. That the license on the fish caught is the fairest and proper mode is correct. Trouble is to get at the quantity. It becomes a question of pocket versus government, and although an affidavit may be taken, pocket gains. This not only cheats the revenue but renders the returns unreliable, and so well am I aware of this that I have no hesitation in adding 100,000 lbs. at least to the returns for the Bay Chaleur. If salmon could be caught in all localities in nearly equal proportions license on net might answer, but as it now is, often the netter who fishes a sheet net, paying \$3 or \$4 license, takes four times the quantity of fish taken by another netter paying \$9. That there is room for improvement here, cannot be doubted, both in justice and fair play. At present there are over 300 stations of nets fished within the bounds of the Bay returning an average of 3,000 lbs. each, but large areas are much below this, for instance, the estuary from Dalhousie upwards on both sides with 54 stations returns 123,000 lbs., giving some \$200 worth to each netter to pay for plant labor &c., and if we take these figures as correct (which I beg leave to doubt) the fisherman's occupation seems to be both poor and precarious, and why they should strive so hard to retain a losing business cannot be accounted for.

In continuing the analysis of the Report for 1887, the Nova Scotia Inspector says, salmon increased 270,000 lbs. but he thinks

their abundance or scarcity depends more on natural causes, than on either fish culture or protection, and prognosticates a falling off in the salmon catch. In this I partly agree with him and will endeavor to show some of the natural causes.

Quebec shows an increase of 142,000 lbs. of salmon and reports a fair season, angling scores small, but a fair supply of fish. New Brunswick Inspector gives an increase of 88,000 lbs. salmon, simply remarking it is one of the long expected *hatchery-booms*, and reminding us of that great year 1874, the year the hatcheries were started and which he declares have ruined the salmon fisheries, and although one of the most ardent supporters of pisciculture, in fact personally assisting, because the results did not come in time and the hatcheries were not carried on according to his plan, condemned the whole in toto. In turning to the comparative statement in Report, page 16 we find

For year 1879 salmon catch for Dominion	2,500,000 lbs.	total	of which	130,000 lbs.
			sold fresh	
" 1872 "	"	3,194,000 "	do.	1,500,000 "
" 1874 "	"	6,000,000 "	do.	2,500,000 "
" 1875 "	"	2,800,000 "	do.	1,700,000 "
" 1876 "	" year L.C.R. was opened	2,700,000 "	do.	1,500,000 "
Mar. Prov. catch for 1887 (excluding B.C.)	3,328,131 "		do.	2,341,000 "

These are the figures by which the New Brunswick Inspector claims the ruin of salmon fisheries, and that New Brunswick caught 3,214,000 lbs. or over half of the total 6 millions of 1874. Looking at the matter with a view to find out what caused this extraordinary year. I can only see two reasons, first is, some 5 or 6 years previous, say in 1868 or 69, a very large number of parent salmon had a very favorable spawning season, their progeny escaped the dangers of river and sea, and so returned an enormous multitude never seen before or since, and ahead of British Columbia itself! I remember the years 1873 and 4 well, there certainly was an extra catch, and it stimulated many settlers to become fishermen, but I opine there is a slight error somewhere of a couple of millions in the figures, when you consider 2½ millions lbs. fresh fish sold (not canned as there are 2 millions lbs. of them) and consider we had no railway connections with the U.S. or the upper provinces, even steamers, not reliable and to the northern portions only weekly, it does appear "well, as if we had lots of them." It, however, very strongly supports Mr. Rogers' theory, there must have been some unknown natural cause for those two extra years. Surely the opening of a couple of hatcheries using 3 or 400 salmon of the remnant which escaped out of the six millions lbs. caught could not possibly have reduced the catch so low in the years following. Let me now from the report show the yearly value of fish and fish products of the Bay of Chaleur, in comparison with some other portions of the Dominion. The fishery pro-

ducts of Restigouche and Gloucester Counties are valued at	\$792,628
" Bonaventure and Port of Gaspé	590,000
to which may be added expenses of 200 anglers	50,000

A total of..... \$1,441,628

nearly equalling British Columbia and Quebec, above Ontario, and more than P. E. I. and Manitoba, putting both together.

The salaries and disbursements paid to the officers for protection in those four counties (not including Dr. Wakeham's) total \$4,723. For the same service in the County of Northumberland its officers draw \$3,811, whilst its fishery products are only valued at \$287,500. I beg to draw the attention of the Department to this fact, as I know many of the officers of the Department in the Bay of Chaleur are not paid in comparison with their limits and for the work they are expected to perform, and I may here tell the public from statistics in my possession, that the cost of guardianship on the salmon rivers emptying into Chaleur Bay, paid by private parties, amounted to \$11,500, of which amount \$7,000 was paid on the Restigouche river alone, and which is of as much benefit or more to the netter, as it is to the angler. Such is the present position of the Bay of Chaleur, salmon net fisheries, still the salmon only yielding 90 or \$100,000 of the whole, the great cod fishery being the main factor, supplemented by the lobster, now in its wane, but quite possible to be resuscitated. Let us look at the salmon fisheries in the past and so often referred to. From 1837 to 1856 the great proportion of salmon taken were by nets in the estuary, and the spear of the Indian, supplemented with a few from the whites taken with the drift net. Some half doz. of the older residents held the best fishings in the estuary, a few nets were set at Dalhousie and Charlo, at Salmon Beach, Bathurst, and in Gaspé Basin. Between those years there were not over 50 netting stations in the Bay, the fish were barrelled salted, commonly sold to Halifax and American traders in exchange for goods, commonly at \$8.00 per bbl. When I tell you that we often had years when up river settlers with a drift net could not catch sufficient fish for their winter, some idea can be formed as to the quantity caught. Often a good station in the estuary would not catch over 10 or 12 bbls., and 20 bbls. was considered a good catch. The Indians, assisted by the settlers on the river as well as by parties from the St. John, followed the fish as far as they could go and the only thing that prevented total extinction of the salmon, was a few fall fish running late and also a distaste both Indians and whites had to eat a spawning fish. Never in our best seasons could 1000 bbls. have been exported from the Bay of Chaleur, one fifth of what it is to-day. The commencement of canning in 1860 did not tend to improve matters as sometimes it raised the price. Any regulations made were by the sessions, a body of magistrates interested in the fisheries, and one of the netters, the overseer. In those times, when

netting was no longer tenable in the estuary, owing to the fouling of the nets, the fisherman would up stakes, moving to head of tide, amongst the islands, closing up the channel. For years the salmon sufficient to keep one small canning establishment running were hauled some of them 20 miles. On the advent of confederation a change took place. Indians were restricted and soon compelled to abandon spearing. Whites were more sharply looked after and the channels in tide way better regulated, no moving of nets allowed and the presence of anglers on the rivers assisted their protection. Such is a synopsis of the salmon fisheries from 1837 to 1871. Previous to 1837 I believe fish were plentier, as I have heard stories of the older settlers getting big hauls and the Indians reizing them and cutting the seine. Prior to the advent of lumbering in 1830 there were but few settlers on the river, as the lumber was the main inducement to settle. On the advent of the through railway in 1876 canning ceased nearly all over the province and shipments of fresh salmon was the order of the day. At that time one freezer existed in the Bay, now there are some 17 having more or less salmon, and for the 3 months of the present year—June, July and August 750,000 lbs. have found their way to Uncle Sam, irrespective of the shipments to Canada west, to Nova Scotia and New Brunswick, for although both last named places have salmon of their own, our shippers will tell you quite a quantity goes to towns in both provinces from our northern bay. Still, no doubt, since fishing closed the freezers have added their quota and some 25,000 lbs. have been called upon from the Fraser River to supply the demand. The question now is are the salmon fisheries increasing or diminishing? Every unbiased, practical fisherman will tell you the salmon have increased these last 12 years, and during the last five, the supply has been wonderfully uniform, and unless from local causes such as storms, or injury to nets, a good, fair fishery has been obtained in many localities, extra to what was expected. Had no restrictions or Licensee Law been in force, no doubt netting would have been largely increased, as I have seen fifty new applications for net fisheries in one year in one division refused. Owing to the Government affirming their right to resume, in event of death or removal of a Licensee, all salmon net stations, the netters have formed an association to resist this encroachment on what they claim as their rights, and ask the Government to grant or to acknowledge these rights in perpetuity to them, their heirs or assigns. Now if they owned these rights, as they claim "why ask it?" According to English law and decisions the crown is only custodian of tidal waters for the public and they cannot be alienated, unless for some public benefit of general utility, and tidal water is defined as being below high water mark where tide ebbs and flows.

Certainly the netters cannot with any grace refuse the general public and to those riparian owners who by law have a right (which

the tidal netter has not) to take fish whilst passing through his water, a small share of the fish which he permits to pass his net. Allow me to suggest to the Department of Fisheries another mode of settling this question. In Scotland, in firths, estuaries and rivers the seine is used for salmon fishing. In the Bay of Fundy the sweep or drift net gilling the fish is used, also this net is used in the Fraser River to the exclusion of any other. It is also used on the Columbia River. Why not allow it in Bay Chaleur with certain length and size of mesh and giving the whole general public a chance to participate by paying a license fee and doing away with all the fixed stationary nets and pickets. That salmon can be caught by this mode is undoubted and if the weekly close time is observed sufficient fish would reach the fresh water. Even in a fresh water river the drift net cannot take all the fish, if so, there would have been none in the Restigouche years ago.

Quite a change has taken place on the dear old river since 50 years ago. Islands have been swept away, others increased, alluvial flats on its banks where the wooded protection was cut down swept off by ice and water. The silt held in solution by the river in spring, increased by the lumbermen driving on the smaller branches and cutting through the alluvials in the brooks to float the lumber, when met at its mouth by the reaction of the tides, became deposited, creating middle bars and extending banks, closing up many channels. You can see now the bones of some old vessels said to be French war ships sunk by the English in 1774 some five miles above where a schooner would float to-day. In those good old times no laws were in force (if there were any they were dead letter) respecting the mode or time of salmon fishing. Whilst fish were running close to shore in early spring the net would be set from some rock having a favourable eddy, later used to drift or sweep, each net would have an allotted piece of river or the parties would take turns about first. The Indians and whites, both in August and Sept. would go 100 miles above tide water after the fish, but as many of the pools are very deep a remnant must have escaped. The Indians would commonly start in a body on Monday morning, pole all day and continue poling and spearing up-stream all night. The fish caught were split and buried under the gravel in some of the small cold brooks. They would keep on for three days in this manner and on return take in the fish, finishing up by Saturday night. When they went to head waters it took two weeks, and they used to carry a portion of salt. At this time the debris of the torches (of bark) would lie along the beaches and shores like winnows of hay. Our beautiful, clear, pebbly bottomed Restigouche was the spearer's paradise.

This state of matters was not changed in a day. The Fisheries Department endeavored to stop this illegal fishing, but which both whites and Indians believed they were perfectly justified in continuing, particularly as the rivers were leased to a few individuals, ignor-

ing all other rights. The means at the disposal of the Department were also inadequate to properly protect the large extent of rivers, estuary and coast. Of course the netters did not like to be curtailed in any manner, and it was impossible to cause the weekly close time to be observed as it required, and as usual in all such cases the officer who attempted to put restrictive regulations in force had to bear the blame.

The concession, however, of Riparian rights in Fluvial waters changed matters wonderfully, and it was soon made apparent to owners of fishery privileges, through the instrumentality of the pocket, it would be their interest to protect, instead of destroy. Consequently the greater portion of these privileges have passed into the possession of American sportsmen.

The Local Government being the largest Riparian owner, only a small portion of lands being granted, divided the rivers into sections, placing on them an upset price and leasing them at public auction for a term of years. Two of these divisions under lease to the R. S. Club, viz., the Kedgwick and Patapedia, could be angled upon for a distance of 30 miles each, but they prefer holding them as breeding streams without disturbing them. For this wise act, which must ultimately benefit other owners and netters, they certainly deserve credit. As to the numbers of rods—who have any vested right to angle—they may be classified as follows:—

Proprietors, purchasers from private parties or from the crown, including members of their families in 1888	39 rods
Rods fishing in 1888 on waters leased from private owners	13 "
Micmac and Campbellton Club members	18 "
Members of Restigouche Salmon Club	40 "
Total	110 rods

There were not, however, over 100 rods in all the fishing season of 1888, and for which I append their scores near as possible:

Proprietors	Fish	On Leased Waters	Fish
Restigouche Salmon Club	499	Messrs. Brayley & Foster	11
Micmac do	40	" " Jeffers & Holbrook	31
Campbellton do	40	W. J. Florence, as reported in Canadian Sportsman	96
Sir Geo. Stephen, Metapedia	45	Messrs. Davis & Brown	30
Capt. Sweeney	113	Upsalquitch River Leases	50
Messrs. Saps and Lawrence	67	Messrs Campbell & Starnes	25
W. P. Clyde	37		
C. F. Fearling	60		
J. & A. Mowat	15		248
Mr. McAndrew	96		1371
Olsen & Lansing	52		
Mr. Dapp	4		1519
Messrs. Wilcox	158		
Mr. Rogers	45	Fish averaging	21½ lbs
	1371		

Let us now look what this 1,500 salmon mean as a benefit to the County. On an average it cost each of those 100 anglers, say for canoes, guides, provisions and outfit, cost of barges, horses and men towing, at the most moderate estimate of \$330 per rod, we have

	\$35,000
Paid to Local Government for leases.....	7,500
do. for leases on private water.....	1,500
do. for guardianship of rivers by lessees and owners	6,500
Expressage acct. anglers fish exported 1888.....	1,700

Giving a total for the year's expenses of..... \$52,200

Two-thirds of this amount expended in the County for what? For catching 1500 salmon. This is only a portion of the benefits the Riparian Rights brought to the Restigouche.

The Restigouche Salmon Club started with a capital of \$40,000 and 40 members, some 10 years ago. To day a seat in it cannot be purchased for less than \$5000. Therefore that property alone is worth \$200,000. Fifteen different parties have purchased from the crown and from private owners fishery rights and lands at a cost of \$50,000. Buildings have been erected costing at least \$37,000 on those properties, and costing fully \$1,000 yearly to maintain. This, remember, is only actual cost. What this property might bring in the market when \$50,000 is asked for one, I will not attempt to determine. Some of it, money would scarcely buy.

Add to this the product of the Cascoquidiac, Bonaventure, Pabos, Grand River, St John, York, Dartmouth, Nepisiguit and Jacques rivers, allow the whole of them to equal the Restigouche River in number of rods, fish caught and expenses, and we have an annual expenditure of at least \$100,000. Whilst they took 3,000 salmon, or 60,000 lbs., the netters took 950,000 lbs. worth \$95,000; but these netters took 47,000 salmon. Therefore the anglers' fish are worth as much to the country as the netters' are, and their money is expended amongst that class who otherwise would not benefit a single dollar by our salmon fisheries. I may be termed egotistical because it is my home, but if my description is overdrawn or incorrect it is open for anyone who chooses to correct me. I do say, without fear of contradiction, that take Chaleur Bay for its cod, lobster and salmon fisheries, and can you find its equal? If so, where? It is just possible it may have an equal, so far as fish-products are concerned somewhere! But can it be so easily reached, and within the bounds of civilization as the Bay of Chaleur is—7 days from England and forty hours from New York, with railway and steam communication all through it?

SOMETHING ON PISCICULTURE.

This science is now practically demonstrated in nearly all coun-

tries pretending to civilization; even the Heathen Chinese is supposed to have made use of it long ago. You cannot take up a newspaper without paragraphs meeting your eye of ova or fry planted or transplanted in every quarter; fish of all kinds, even to the old John codfish, crustaceans, oysters, lobsters, sponges, and I don't know what. I have seen in a report of C. F. Powell to the Secretary of war, U. S., 1887, on Columbia River Salmon Fisheries, where Mr. Sniley says the planting of 500,000 fry increased the catch by 1,000,000 lbs., and, in 1883, the annual increase from $2\frac{1}{2}$ millions of fry increased it to 4 million lbs.; and the fishery commissioners for California declared that if the state would appropriate sufficient means, they would fill the river so full of salmon that a steamer could not plow her way through them. Why don't they try their hand on the Penobscot or Kennebec rivers, if they would guarantee anything like that quantity money would be no object? It has been contended by close observers that not over 3% of the natural laid ova ever comes to be fishes, or pass the parr stage. The principal theatre of those observations has been the salmon rivers of Great Britain, which are quite different from ours—not closed by ice for six months, or subject to spring or autumn freshets as ours are. Consequently, both eggs and fry are much more liable to destruction on this side of the Atlantic. The egg in their rivers only takes 60 days to hatch out; ours from six to seven months. Consequently, their fry are grown to parr before ours are hatched. The fish seem to run into their rivers from Feb. until Sept. In the Rhine they run all the year round. Our fish run in three weeks—never over six. I have heard of salmon running into our rivers under the ice, but do not credit it. Very often, on the exit of the ice in April or May, dead salmon will be found along the river, but they are uniformly kelts or spent fish from the previous fall. The average number of eggs in our salmon is from 10,000 to 12,000, being as large as peas. The herring and cod have them in millions; the produce is therefore as 100 to 1, or one herring giving as much spawn as 100 salmon. This is however not so much a factor as the susceptibility of the salmon egg to injury. In 1880 one of the keepers of the River Tweed told me that whenever he saw over ten or a dozen fish on one bar or bed spawning, he seized them off, driving them to other places. Several reasons are given for this. After the extrusion of the egg from the female, if in water it will not remain susceptible to impregnation over a minute; by that time the orifice in the egg which should receive the milt having absorbed its fill of water, closes, and if many fish are together, the large males are continually chasing the smaller and a large proportion of the eggs go without impregnation. Again, the eggs which may be impregnated and covered up are liable to be again uncovered by another fish, swept away by the current, or eaten up by the trout and other fish watching for them. If they escape all this the movement and the

turning over at this stage adds the egg, and it soon becomes white. Another trouble in our rivers, is that often in the spawning season the river may rise three or more feet. The salmon do not spawn in deep water, why, I cannot say; the fish, therefore, nest on the high bars and beaches, and these are soon covered with ice. The frost causes the water to fall and often freezes the gravel to the ice, so when spring opens it lifts the gravel with it. I see, in one report, where Professor G. Brown Goode says salmon eggs will not injure by freezing. I beg to differ from him. Slight frost may not injure, but when frozen solid in air the egg splits open. Such is my experience. Very often, when ice makes in our rivers, the anchor ice forms on the heads of rapids, filling up forming a dam, until the head of water bursts the barrier, often sweeping away the whole bar and changing the bottom altogether; and I have no doubt, many years have been that the great portion of the natural-bait product was destroyed, and so it will be again; and this destruction, combined with the dangers encountered by the young fish while at sea, accounts for the great variations we experience in our annual supply of salmon. There must be reasons why one year should produce 6,000,000 lbs. and the next only 2,500,000. I, therefore, claim for pisciculture, that it preserves the egg from the dangers of the spawning season, its destruction by trout and other fish during that period; and placing a large number of fry in the river when fit to receive them, thus assisting the natural propagation, and insuring the river having a certain stock every year, independent of natural causes. Other streams also can be stocked, but as it is now admitted that every river has its own distinct variety or habitat, I believe every river should be restocked, if possible from its own fish. I placed, in fine condition, 10,000 eggs and fry for three years in succession in the Little River and Nouvelle. Of course these rivers were small, compared with others, but I had been told, that in old times, salmon were taken in them; in fact the water and pools were all that could be desired, and one of them was famed for its trout. I watched the result with some anxiety. Parr showed the first year, and in successive years smolt were taken, both by myself and others, but no adult salmon ever appeared—not even a grilse; and I was then forced to the conclusion that when the adult fish had returned, they followed up the main Restigouche, their parent river. I do not claim their return to a river say emptying into the Bay of Fundy or Atlantic coast, but I do think they will find their way back to any of our Bay Chaleur rivers, although Mr. Spurr claims that Restigouche salmon are caught in Nepisiguit now. I allow he should know, and Col. Walker claims Gaspe salmon in Grand River—both from restocking. If this is so, and those rivers, Miramichi amongst others, which produced only 10 lb. fish can be made to produce 20 pounders, it would, certainly, be quite a gain, and be a feather in the cap of pisciculture, which seems to need it in some quarter. I am, however, glad to see many

who were bitter opponents coming to a different conclusion, principally from seeing, as there is no ledgerdom in the process, and going so far as to say, "Why we want all the produce of our own hatchery, whatever benefits are in it we want them and, if necessary, will pay the expenses of it to retain its stock at home." It really, does not seem as if it has ruined the Restigouche, as predicted a few years ago. In fact, there is quite sufficient stock for its natural propagation.

"THE WHY" SALMON TAKES NOT PROBLEMS

I enter this portion of my letter with a good deal of trepidation, conscious that I know but little, although amongst salmon a fair life time. Unless it is some hard-headed Scot whom you can't convince, it is now generally conceded that salmon, on entering fresh water from sea, abstain from food until after the spawning period. The constriction of the gullet or throat, the cleanness of the intestines, the absence of anything like gastric juice in the stomach of fresh run fish will show this. I have taken two fish thirty miles up-river with partly undigested caplin in their stomachs, but those caplin were taken by the fish 20 miles below the head of tide, as caplin will not enter brackish water, and salmon will not touch smelt. The river was in flood at the time, and I have an idea those fish were not more than twelve hours running up this 60 miles. I can only judge this from what I have seen of the stomachs of salmon caught on the coast and full of food. The immediate entry of the salmon in question into fresh water may have paralyzed the digestive powers.

You ask why do they take the fly if not for food? It may be for sport, or the fish may be in a combative mood and, getting angry at the continual persistence of the Jock Scots or Rangers, or some of the other flies, which it would be no sin to fall down and worship, concludes at last to wipe it out by mouth, body or tail. If taken for food, where would the pleasure of angling be? Where would be the waiting, the expectation, the fears, the hopes, when a big looking head shows short of the fly? Another cast, he don't show; now which one will we try him with? All this would be gone. A luscious grasshopper, or a nice mouse or minnow would be the bait on a codfish hook attached to a codline. Suppose we have him and he is a 30 pounder; Can you tell his age, when he was in the river last, or whether he was ever in before? The theory of a year old for every 4 lbs. he may weigh is untenable. Take a St. John, a Nepisiguit or a Miramichi 10 lb. fish—the average weight of those rivers. Are they only 2½ years old? Why do they not grow heavier? A 4 oz. smolt is 20 months from the time the parent fish laid the egg, until it seeks the salt water. This we do know, and if

It does return (for they do not all return—only a small number do) as a grilse of 3 or 3½ lbs., we suppose it is 2½ years old.

Our North Atlantic rivers have a notable peculiarity in their runs of salmon which is nowhere else to be found, unless it may be in Norway; and that is they come up from the salt water with a rush, 2 or 3 weeks, perhaps 4, in June, and then the whole migration ceases. In 1876 no salmon was seen until 16th June. Netters were in despair. On the 22nd six full car-loads were shipped from Campbellton, and the run ceased; not a carload was taken after that. Now, this is the anglers' month—cool and pleasant, no flies, water in good shape, unless an odd floating log which keeps the fish on the move and gives the angler a little more additional work, just a spice of excitement when you have a fish on your hook. Fish are steadily running up, no morning or evening fishing, it is all day work, if you want to, and generally the fish means business. He either will, or he won't; if he is not a rising fish nothing will tempt him. Some anglers say every fish will rise sometime. It may be so, but the trouble is to strike that sometime. My own idea is that probably not over two fish in ten will rise to the fly at all. I have fished a pool at a favorable time and could see 100 fish in a space of 50 yards, running into and out of the broken water at the foot of the rapid. I had no trouble in hooking and landing six fish, when no more would rise; no doubt but next day or morning a few more would have risen. Had I roughed the pool and frightened the fish, or had they come to the conclusion my fly was dangerous? I know well, that before a salmon reaches tide head he knows the net when he sees it about as well as the man who sets it, particularly so if it is calm. Why should he not, after passing 150 stations? Often the netters will try to break a school or drive them in the net, as they are easily seen when calm, but no, I never knew them succeed. Away they go at right angles and round the net. Now, where a fish is offered say 50 different flies in going 20 miles of river is it not reasonable to suppose, particularly if he has been deceived and has a sore mouth from trying some of them, that he gets suspicious and shivers off. When hot days come in July they get difficult to move, and there will be days when a rise cannot be obtained. In fact I think all fishing for salmon should cease after 1st August. The kelt, or fool fish, is a nuisance in June on her way down and mixed up with the fresh run fish. No doubt she tries the fly for food, and she is often terribly in the way. One theory about the kelt is that she came in late the previous year, in November, with ova three parts grown. I have taken them, (not in quantity) at this time returning to sea in June they remain out until at least the following spring, then returning as spring fish. Another theory is that they are fish that went so far up to head water that they could not return the same year. If this is correct, then it would follow that one portion of the year's fish return in fall to sea and the other por-

tion in spring. The question is, when does the salmon first spawn? Does it spawn every year or once in two, or once in three years? By properly marking the fish the last points can be decided and it should have been done long ago. It is reported that the Rhine salmon only spawn three times in its existence! If not killed what becomes of it? Is it past the breeding period of life or does it die of old age? I have seen blind salmon; so have many Restigouche anglers, but nature did not cause it. The mesh of the net, bound across the eyeball was the reason. Columbia River and the Fraser River salmon were reported as dying sure, after spawning, and many before performing that process; and that Columbia River report, states every fish might be caught without injury provided there were a sufficient artificial stock planted, because they only die and never return. The Inspector for B. C. repudiates this idea and in his report on the Fraser says many do return. In Scotland, however, the accepted belief is that salmon spawn yearly, and that salmon that were caught going to sea and marked have returned in six weeks 6 lbs. heavier; and I have seen it reported that salmon enter some of those rivers just to look round, as it were, and return to sea without spawning.

I would suggest to the proprietors of the Restigouche to ignore the Departmental order forbidding the setting of trout except on the Labrador coast, and if a settler is not able to buy a net give him one. You say, why? Let me tell you it is impossible to have both salmon and trout in quantity in the same stream, and I have not the slightest doubt before a trout reaches 3 lbs. weight in Restigouche River it has destroyed very many thousands of both the eggs and fry of salmon. I have killed, on the salmon beds, both trout and suckers and have taken a heaped gill of eggs from each. Now, the sucker can't catch the young fry, but the trout, what sweet morsels they are to him. Have you not, brother angler, taken him so full that the tail of the smolt stuck out of his mouth? Instead of protecting him put a bounty on his head! The king-fisher and sheldrake are both bad, but I believe the trout is worse. Again, the net for trout saves the smolt. Angling for trout in Sept., I don't care how careful you may be, destroys numbers of smolt and I would prohibit it. Trout are not near so plentiful of late years in our river, and to this cause may be imputed a portion of our salmon increase. From the returns, the main river anglers have no reason to complain, but they did last year say that the upper pools did not pan out as usual. What they did catch were larger fish. My reason for this is the larger numbers of rods on the lower portion of the river. They had the first chance at the rising fish, and a larger proportion of smaller sized, or younger fish, rise. From all accounts of the guardians the stock in the river in October was exceedingly large. The stock was also reported larger in the Upsilquitch river. The Metapedia River seemed to have only a few spring fish in it.

From some cause, in July and August no fish were seen moving until late in October, when the lower portion of it filled in a few days with breeding fish. It was perfectly stocked with both parr and smolt. Why the old fish did not enter until so late is unaccountable. Could the continuous running of trains have produced this effect in low water months may be questioned? There must be some cause why it has so fallen away. In conclusion, I do not prophecy, but if the regulations are properly enforced and rivers carefully guarded, a steadily increasing stock can be confidently looked for in the future.

