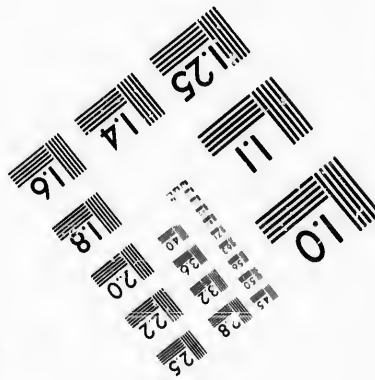
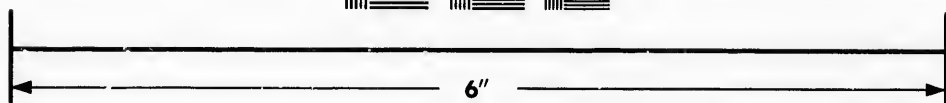
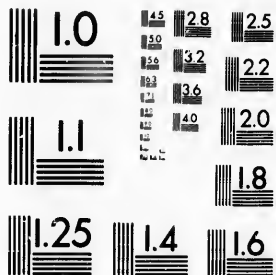


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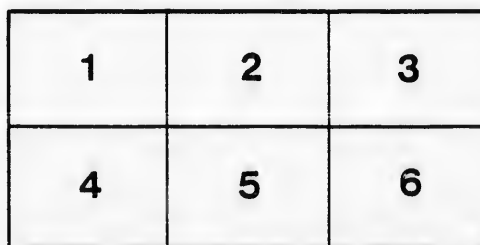
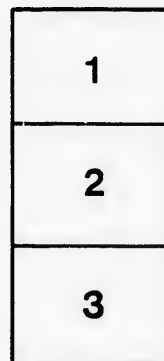
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**PRINTE**

**RIVER AND BROOK  
FISHERIES,**

BY

**RICHARD M'FARLAN,**

OF

**ST. PATRICK, CHARLOTTE COUNTY,**

**NEW BRUNSWICK.**

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PUBLISHED FOR, AND SOLD BY THE AUTHOR.

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JOHN H. WENTON

THE HISTORY OF THE

AMERICAN PEOPLE

FROM 1776 TO 1876

BY JOHN H. WENTON

NEW YORK: G. P. PUTNAM'S SONS

1876

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THE Author, Richard M'Farlan, of the Parish of Saint Patrick, Charlotte County, New Brunswick, British North America, entitles this little work, HIS STUDIES ON RIVER AND BROOK FISHERIES, &c.

Having had the Fishing principle under consideration for nearly twelve years, no pains have been spared in trying to invent improvements from time to time, in order to have it answer the best purpose; and feeling confident that the principle is a good one, the Author recommends to the Public to put it in practice with as little delay as possible.

It is reasonable to try any lawful business where there is a prospect of great success; and by establishing River and Brook Fisheries extensively, with good management, and through the assistance of Divine Providence, no doubt great benefit will result thereby.

Should the Fishing principle be conducted agreeably to the explanation that is given in this Pamphlet, no doubt that by taking the matter fairly into consideration, with few exceptions, the whole Public will feel interested in the welfare of the Fisheries, and the owners thereof will no doubt be well paid for their enterprise, and they may with great propriety be called liberals, in deed, and in practice.



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## RIVER AND BROOK FISHERIES.

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It is a lamentable fact that many River Fisheries have been destroyed by bad management. They may be reclaimed; and Fisheries may likewise be established on small Brooks that are now unoccupied. The fact is, that by establishing and carrying on River and Brook Fisheries properly in countries where the climate is suitable to Salmon, Shad, Bass, Alewives, Eels, &c., it would be the means of a great portion of wealth resulting therefrom.

I will now call the attention of the Public to the immense number of spawn that is in a Herring, and then proceed to show how River and Brook Fisheries may be made productive of large quantities of Fish. A middling sized Herring has about 200,000 spawn. I will suppose an Alewife to have about the same number, and a Salmon likewise to have 200,000. Two hundred thousand full-grown Alewives, or Gasperaux will fill five hundred barrels, allowing 400 Fish to fill a barrel, consequently 10 female Gasperaux will yield 5,000 barrels, providing each spawn would become a full-grown Fish. Small Fish have many enemies, it is therefore necessary to make great allowance.

Suppose a River, or a Brook Fishery were to be established where no Salmon nor Alewives resort, that would be intended to yield 5,000 barrels of Alewives in 1850, the same quantity in 1851, and as many in 1852, supposing the Fish to be half male, and half female; in order to make sure of the quantity, in lieu of depositing 20 Fish in the Lake, or pond that is intended for the Fish to spawn in, deposite 4,000 live Fish per year in proper time, in 1847, forty eight, and forty nine. Then allowing that only one Fish for every 200 spawn became full-grown, and return in good condition, the Fishery would yield 5,000 barrels in 1850, the same amount in 1851, and as many in 1852, allowing the Fish to gender when they are three years old. Five hundred Salmon at the same rate in number of spawn if the calculation hold out good, would yield 5,000 barrels, allowing 40 Salmon to fill a barrel; 200 lbs. in each barrel,

would be an average of five pounds a Salmon when they are split, and ready for salting.

It appears reasonable to me that a Fishery of this description might be established at the outlet of a Lake on a small Brook, or at the outlet of a Brook, supposing the Lake to be about one mile long, and about three miles round it, by building a dam at the outlet of the Lake, or in some suitable place to flow the water a necessary height on the Lake to make sure of a plentiful supply of water in reserve to let down for the accommodation of the Fish when they are going up, and likewise to give them a necessary supply on their return, to insure them a safe passage into the Sea, and likewise to have a necessary depth of water continually on the beach round the Lake in order that the Fish may use the sandy beaches as they like, and not have their spawn destroyed for want of a plentiful supply of water. It is of no use to accommodate Fish to pass up Streams, and have them, or their increase all destroyed while they are up, or on their return. The beaches of large Lakes that Salmon and Alewives breed in, ought to be similarly covered with water. Gates of machinery ought to be shut while the Fish are passing down Stream.

In all cases where it is necessary, build a wasteway, or wasteways to dams in order that fish that miss the Fish Ways on their return may have a safe passage down over the wasteway into the deep water below the dam. (See the wasteway of the Fish Way model.)

On Rivers and Streams where there are large Lakes, or Ponds, with proper management great Fisheries may be established.

I would recommend by all means to try Fisheries on Brooks that have no Lakes or Ponds, as well as those that have Lakes, such as have sandy bottom, and that are principally fed by Springs, and have a good chance to build dams, thereby making large Ponds of water for the Fish to breed in, and to be used for the accommodation of the Fish as before explained.

Small quantities of live Fish may be obtained with a trifling expense, and when Fisheries are established they may be increased, or decreased, by letting a larger or a smaller quantity pass up yearly, and the remainder may be caught in the Fish Ways, and slaughter pools, similar as is shown by the Fish Way model. There may be as many slaughter pools as the nature of the case may require, and the situation of the place afford, and a gate with a grate may be arranged to each pool if necessary, the gate is to draw the water off into a subterraneous passage, or otherwise as may be convenient. When the Fish are shut in, the grate keeps them back, consequently they will be in bulk clean and nice ready to be acted on to the best advantage. In all cases use as many gates with grates as may be found necessary. By having plenty of salting bins and Salt, the Fishermen can soon Salt the Fish, and when they are Salted, clean the Fish Way and slaughter pools before other Fish are admitted, and they will not apprehend that there is slaughter waylaying them. The reason why I did not make a

gate to the slaughter pool of my Fish Way model for drawing the water off, is, that it would make it inconvenient in some respects while exhibiting it.

|   |        |    |   |
|---|--------|----|---|
| Suppose a Fishery was to be established at the out-let of some small Lake of the size before named, calculated to yield 5,000 barrels of Salmon per year, and the same quantity of Alewives. Suppose the expense of the Fishery when the above named amount of Fish are ready to be caught, and salting bins, and buildings, &c., ready to receive them to be | £3,000 | 0  | 0 |
| Suppose a fish barrel to cost 2s; salt for salting and repacking a barrel of Alewives, 1s 6d; catching, salting and repacking a barrel, 1s 6d; making a total amount of 5s per barrel when the fish are ready for market. Suppose Salmon to cost one shilling per barrel extra for stripping, &c.,  |        |    |   |
| When 5,000 barrels of Alewives are ready for market, make the Fishery debtor for the same at 5s per barrel,   | 1,250  | 0  | 0 |
| When 5,000 barrels of Salmon are ready for market, make the Fishery debtor for the same at 6s. per barrel,  | 1,500  | 0  | 0 |
| Suppose Alewives to be worth 7s 6d per barrel—one fourth of 5,000 barrels is 1,250 barrels, that amount to be given to the public is  | 468    | 15 | 0 |
| Suppose Salmon to be worth 25s per barrel—one fourth of 5,000 barrels is 1,250 barrels, that amount to be given to the Public is  | 1,562  | 10 | 0 |
| To balance due the Shareholders,  | 343    | 15 | 0 |
|   | £8,125 | 0  | 0 |

## CONTRA.

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|--|--------|---|---|
| By 5,000 barrels Alewives at 7s 6d per barrel is | £1,875 | 0 | 0 |
| “ 5,000 barrels Salmon at 25s per barrel is      | 6,250  | 0 | 0 |
|  | £8,125 | 0 | 0 |

Should the cost of salt and barrels, &c., exceed what is named, add the difference to the price of the Fish, or otherwise let the Company be at the loss. Were the above calculations to hold out good, the Fishery would clear itself with the first year's fishing, providing the above named balance would be sufficient to pay Clerks, &c.

No one to be allowed to take beyond a limited number of shares in a Fishery.

When Fisheries are about to be established subject to the new arrangement, where River Fish are scarce, it will be well to pass a Law against catching such kinds of Fish as ascend fresh water Rivers for three or four years, or until the fish get plenty. Let Indians, and other colored People receive equal shares of the Public Fish. Let Men, Women, and Children take Stock in River and Brook Fisheries. Let Parents advance for their Children, and receive the income until the Children are of age; then let each Child when it is of age receive its share or shares in the Fishery. When Parents are poor, and not able to take Stock for their Children, let any one that may think proper take Stock for them, and receive half the income, and the Children the other half. That would give the rich a chance to help the poor, and likewise increase their own fortune. Poor Men and Women that are not able to take Stock might receive help in a way something similar. Let

those that are disposed advance money to pay for shares in the Fishery by receiving the income of the shares for a certain limited number of years, then let the benefit go to the poor People; let the poor People, if they think proper, advertise their privilege, offering it to those that will advance money for the income of the least number of years, or the least proportion of the yearly income. Every arrangement that can be made for the benefit of the Poor is recommendable.

When the fact is established that many poor Families have plenty of good fat Salmon for their own use, and a necessary supply of Alewives for their Cattle, all of which to be gratis, and those who carry on the Fisheries to have plenty of cheap Fish for exportation, and make plenty of money by the business. The West India Merchants purchase Alewives for two dollars and fifty cents per barrel in the West Indies, and Salmon for 6 dollars per barrel, and individuals in the West Indies so get Alewives for three dollars per barrel by the single, and good fat Salmon for seven dollars per barrel in lieu of paying a York shilling a pound for it, and the same kinds of Fish to be cheap in like proportion in other countries, what a great change of times it will make for the better.

Should Fisheries pay the expense of establishing them with the first year's Fishing, they will then in future with good management be remarkably profitable. By having cheap Fish, great quantities will be wanted.

When Fisheries are to be established where it is necessary to deposit live Fish as before explained, the Fish may be brought from places where they are to be had in boats or vessels suitably fitted up for that purpose. They might be conveyed from one place to another along shore in good weather when the wind is suitable in a log canoe, or skiff fitted up for that purpose. Make a necessary number of auger holes in the bottom, and sides of the craft to let the water circulate freely among the Fish, cover the top of the craft with boards, or any other suitable article, leaving a place open to put the Fish in, and when the Fish are in, cover it, and then proceed by towing the transportation vessel with a boat, or any suitable vessel. By managing in this way the Fish may be conveyed safe. When live Fish are to be conveyed by Land for purposes as before explained, they will require to be transported in watertight vessels with plenty of water to make them comfortable, and the water will require to be changed often in order to preserve the fish alive, and in good condition to the place where they are to be deposited.

There are many coves at the head of the tide where fresh water streams empty their contents that would answer to build watertight wiers, or dams across. By building dams, or wiers across such places with large swinging flood-gates, and other necessary gates with grates, &c., and a wasteway, or wasteways with grates suitably arranged thereto where Fisheries are established, the flood-gates being arranged to open on the flood, and shut on the ebb, the Fish will, when they wish to ascend the stream, rush in the

wier before high water, and try to ascend the stream, then by shutting them in, they can be conveniently taken care of.

The watertight wier, or dam, Fish Ways, and slaughter pools, and fresh water dam, should all be built previous to the Fish passing down stream the first season after commencing to establish the Fishery, in order that the Fish will not be alarmed on their return to ascend the stream by finding new work arranged in the water.

Suppose there were a great Fishery established with a large watertight wier sufficient to hold 100,000 barrels, or a larger quantity of live Fish, by getting it full only once in one Fishing season, and occasionally half full, it would pay well. After the Fish are shut in, the owners may manage them to the best advantage. It is particularly necessary to let a sufficient quantity pass up yearly to breed, let the Fishery be large or small.

Probably in some cases when establishing great Fisheries, it will be necessary to have several passages of Fish Ways, say a double tier of Fish Ways, and each tier to have three passages, less or more, as the nature of the case may require, each passage to be about ten or twelve feet, more or less apart from centre to centre, as may seem necessary. The right hand tier, and left hand tier if necessary to have a slaughter pool arranged similar as is shown by the Fish Way model. With such arrangement the Fish may be going in the one, while the Fishermen are taking care of what are caught in the other. My River and Brook fishing principle may be applied in any way that will be found to answer the best purpose.

No exclusive right should be given, only to inventors, without a reasonable remuneration being made in some way for the privilege. I don't intend that my River and Brook fishing principle shall be restricted, if suitable payment will otherwise be made to me or my Heirs, &c., for the invention.

In order that the invention should do great good with as little delay as possible, I recommend that the House of Assembly do grant £25,000 per year, for four years, making a round sum of £100,000 to be laid out by Government in establishing Fisheries on the new principle in New Brunswick. The arrangement to be, that when individuals form themselves in Companies to establish Fisheries on the principle here described, and have made any reasonable arrangement for carrying the design into effect, a committee being appointed by the parties to see that nothing is wrong about the premises, then whatever may be the amount of the Company's stock, an officer appointed for the purpose to draw on the Treasury for money as it may be wanted, to the amount of one fourth of the expense of the Fishery or Fisheries. The Province to own one fourth, and the Companies to own three fourths of the establishments. The Province right to continue to the end of time, but the Companies right to be limited to 30 years from the first year's fishing. The Fisheries then to go into the hands of new owners, by their paying a reasonable price for them, nothing to be

allowed on account of it being a profitable business, because the fishing privilege is a public right. Then at the end of twenty years to change hands again, and continue changing hands twenty years after twenty years to the end of time; thus giving a great part of the rising generations a chance at one time or other, if they wish, to become shareholders in the new Fishing business. The Fish as they run being Public property, it appears reasonable that the fifth part of the Fish, when they are well salted ready for market, should be equally divided to each Public individual. Shareholders to be counted part of the public. Then should the Fisheries pay one hundred per cent. per year, which I have no doubt they will with proper management, exclusive of the Public Fish, New Brunswick will flourish to so great an extent that she will probably not think the sum too great to give me or my Heirs, &c. one year's income, more or less for the use of the invention, and the Companies would probably give what might appear reasonable.

Should my fishing principle prove to be a good invention, surely it ought to benefit me more than the amount of one year's income of all the Fisheries that may be established thereon.

I am of the opinion that through the assistance of Divine Providence, with proper management the Fisheries may yield more than 160 per cent. per year, notwithstanding one fifth of the Fish are to be given to the Public, but call it 100 per cent., and no more, that would be £100,000 per year to the Treasury. The Government having that much of a yearly Revenue within itself might with propriety begin to talk about free trade.

When building Fish Ways to enable Fish to pass through dams, or pass Great Falls, be sure to make the arrangement easy for the Fish to enter the Fish Way from the deep water below the dam. When the nature of the case will admit, build the Fish Way from the deep water below the dam up the bank. The pools of the Fish Way may be six feet long, more or less, as the nature of the case may require, including the thickness of a division plank. Suppose the dam to be twelve feet high, and the water in the pond in time of freshet to be 6 feet in addition to the height of the dam, and should the water flow 6 feet below the dam higher than the surface of the water in the drought of summer, build the lower cross plank of the Fish Way eight feet high from the surface of the water when it is at the lowest; that will cause the Fish to ascend two feet in passing from the deep water into the first pool of the Fish Way. By having five pools to the Fish Way and the inclined plane of each pool to be two feet perpendicular and the Fish to ascend two feet in passing from the upper pool into the pond, they get into the pond by ascending two feet from the surface of the water below the dam for each passage they pass through, notwithstanding the Fish Way may be made suitable for the Fish to pass from pool to pool on a level. When building Fish Ways, the passages in each division partition may be made two feet wide, or more, and one foot deep, or deeper, as the nature of the case may require, then to put a

thick sheet iron plate with a hole twelve inches square in its centre on the upper side of each passage, the plate to be so arranged that the hole will be in the centre, making an eddy on each side of the passage the Fish will have a convenient chance to go snug to the plate and dart through to the next pool.

In each division partition there may be a square hole of the before named size perpendicularly over the lower passage, the lower side of the hole to be one foot above the upper side of the lower passage, and another passage in like proportion above, making three passages in each partition for the Fish to pass through when the water is at the highest. Suppose a Fish Way to be 12 feet wide inside, make the passages in the first partition 5 feet from the side of the Fish Way, and in the next partition let the passages be five feet from the opposite side of the Fish Way, and in like manner through, thus making a good eddy in each pool on both sides of the passages and the water passes through directly in a range to one side of the passages in the next partition below. The passages for the Fish to pass through into the pond, not to be perpendicularly over each other, make them suitable to arrange a gate to each passage.

The bottom of the Fish Way may be on a level when the situation of the place will admit of it, as the deeper the pools are the more Fish they will hold when catching Fish.

The Fish Way model that I am exhibiting is drafted on the scale of half an inch to the foot, consequently the passages being half an inch square that represent the passages of the Fish Way that are intended for the Fish to pass through, they will be one foot square. The lower side of the passage for the Fish to pass through into the penstock, or pond will be one foot below the top of the dam. The lower passages are not intended to be open only to let the water pass through for cleaning the pools out after a haul of Fish is caught. When catching Fish, let a necessary quantity of water pass through the Fish Ways, and slaughter pools, the Fish will head the different currents and go into the Fish Ways, and slaughter pools.

The heads and guts of Fish must be given to hogs, &c., hauled away to manure land, or otherwise taken care of, they must not be put in the water, as the rotten flavour they make will cause the live Fish to leave the premises.

The probability is that there will require to be a strong penstock built on the upper side of the dam for the Fish to enter, and holes made in suitable places for the Fish to pass through. By building the penstock, and a permanent block of necessary size at the head of the penstock, both of which to be suitable arranged, and so high that the highest water would not flow to their top, and to be well ballasted, drift stuff would never enter the Fish Way.

Suppose there were to be a Fish Way built a great height in limited space to pass a Great Fall. Say there is a good foundation



to commence building. In order to have as little weight as the nature of the case will admit; I recommend to let the Fish Way incline as much as the nature of the case will admit. Both bottom and top of the Fish Way to incline alike. Start it from the deep water as before explained. Or should the water not be deep, make the arrangement suitable for the Fish to enter the Fish Way without great difficulty. Extend the Fish Way a necessary distance within the limits, then build a long pool more than twice the length of the width of the Fish Way. Or otherwise build pools inclining in a right-angle form extending to the right, or left as the nature of the case may require. Then give the Fish Way another right-angle turn, inclining, extend it the necessary distance, then turn it with a right-angle, and extend it suitably over the lower end of the Fish Way. Another right-angle turn and extend it over the part that was first built. Continue building in the same way, until the Fish Way is the necessary height, be sure to secure the work permanently while building. When it is high enough to clear the limited space, extend it suitably into the water above the Fall. Be sure to arrange it suitably for the Fish to pass, and re-pass, let the water be high or low. Secure it well from being carried away with ice freshets; or otherwise, secure it by building a permanent block, &c., to prevent drift-stuff from getting in it, and when the Fish are passing down stream, arrange a net with small meshes to guide the Fish in the Fish Way, they must not pass down over the falls if possible to prevent them. Circular Fish Ways may be built in limited space, should it be found necessary. It may be found necessary at times when building Fish Ways to enable Fish to pass through high dams, or pass great falls, to start from the deep water down stream, and inclining up the bank suitably, forming pools by digging, and with the use of stone and gravel, &c., extend the Fish Way a necessary distance, then turn it suitably, changing its course as often as the nature of the case may require, running in a zig-zag direction, and a necessary distance from the upper end of the Fish Way, make a deep pool, then extend the Fish Way from the deep pool through the dam, or by the great fall, with the use of wood, &c., or with stone and lime, &c.

Fish Ways may be made on small rapid brooks with the use of stone, and gravel, &c., and when it is intended to catch trout and suckers, &c., on their passage up stream, use two grates of necessary space between the bars to let small Fish of such size as are not wanted to be caught, pass through, put a grate to the upper passage of the upper pool that is intended to catch the Fish in, and the small Fish will pass through and the large ones will be prisoners; in all cases let large Fish of all kinds pass to breed, when the Fish are found in the trap put the other grate in a passage below them, then take care of what are caught, and arrange to take more in the same way. When Eels are passing down stream the large ones may be caught by putting a grate to the lower passage of the pool that is intended to catch them in. When

they are prisoners, put a grate to a passage on the upper side, and make them welcome by taking them out of the trap. By a similar arrangement the large Eels may be caught in all the Fish Ways, and the small Fish may be allowed to pass up through Fish Ways in general by the use of grates similar as before explained. Fish Ways may be made by digging, and with the use of stone, gravel, &c., thereby forming commodious pools, beginning at low water, middle tide or high water, in the tide way; thence extending across fields, necks of land, or in any direction that is necessary that the premises will admit, thereby connecting it with any water that is intended for the Fish to breed in.

Shares in Fisheries to be limited at twenty dollars each, in order that many poor people will have a chance to take Stock. No one person to be allowed to take more than ten shares for a length of time in order that many poor people may be accommodated with shares. Those that are able to take a share, or shares, and refuse to take stock, not to be entitled to receive any of the public Fish. Indians excepted. Indians being the original settlers of New Brunswick, I think it right that they should be allowed the privilege of receiving part of the public Fish without being restricted to take Stock in the Fisheries. The probability is, that a Fishery will be in progress three years from the commencement, until it is completed, consequently it will be a very poor person that will not be able to take a share in the Fishery, as the money will only be wanted to be paid suitably to defray expenses.

Suppose a man, his wife and children to consist of ten persons, and the man to take ten shares in a Fishery for each person, making one hundred shares in all, that would be Stock to the amount of two thousand dollars, he likewise takes Stock for the poor as before explained, to the amount of two thousand dollars. Then suppose the Fishery to yield 100 per cent., per year, and the Stockholder to receive only fifty per cent. per year for the Stock taken in behalf of the poor, the poor to receive the other fifty per cent.; in twenty years he would have sixty thousand dollars in return for four thousand. That would be great interest, and suppose that three fourths of the public were shareholders, only one fourth of the public Fish would be paid out, the other three fourths would be the Stockholder's property, consequently it would remain in their own hands.

People that own fishing privileges not to be allowed any remuneration for the privilege, as the establishing of Fisheries will increase the value of the property connected with them to a great extent.

Many people say that it is of no use to accommodate Fish to pass through dams where there is sawing machinery, as the saw dust destroy them. My opinion is that where there are no Fish Ways to dams of sawing machinery where plenty of Fish resort, by being a great part of the time among great quantities of saw dust, many of them will be slain by getting saw dust in their gills, but by

having Fish Ways through all dams, making an easy passage for the Fish to pass through, when they wish to ascend to their spawning place they will soon pass through, and get clear of the great quantity of saw dust that is among great establishments of sawing machinery. Fish that breed in fresh water are persevering, and it is great difficulties that will cause them to retreat from their fanciful streams, but when their passage is blockaded by building dams across, they will leave the stream, or otherwise decrease for the want of a suitable place to deposit their spawn.

Some people say that Steam boats will drive fish away that breed in fresh water off the coast, but I cannot believe any such report. I believe that their attachment is so great to their native stream, that nothing short of blockading it will cause them to retreat and seek other quarters. When they find a Steam boat coming among them, they will naturally give way, but when she has passed, they care no more for her than they do for a stationary rock that remains permanently in one place, continually covered with water. Probably sea fish may be driven off of the coast where a great number of Steamers are continually passing and re-passing.

I once heard a story about a persevering gentleman in the United States of America, and the President. As the story goes, the gentleman that agitated the question saw the necessity of building the ——— Canal, that has been a great means of building New York to the extent that it is. He wrote a letter to the President, informing him of his views on the subject. The President in reply stated, that fifty years hence the Canal might be wanted, but at so early a date the project was not recommendable. The gentleman as it appears counted the President's wisdom in that case foolishness; as he continued to agitate the question, paying no regard to the reply, but took stock to a large amount, and persuaded others to take stock, until at length the enterprise was completed. There were then so much call for it that it was counted good property, and daily increasing in value. Shortly after the Canal was finished, the gentleman and the President met together, the Canal was brought in question, and the President acknowledged that at the time he wrote the reply he was fifty years behind in his calculation for the benefit of the Country.

Should there be fisheries established on the new fishing principle in New Brunswick to the amount of £400,000 New Brunswick currency, and they to yield 100 per cent. in 1851 with one years fishing, and other Countries not to commence establishing fisheries on the principle until they were informed of the great production of Fish in New Brunswick, it would then be acknowledged that they were unwise for not commencing the fisheries sooner. Countrymen—when I say Countrymen, I mean the whole Inhabitants of New Brunswick—look sharp that you will not be the delinquents. I would be sorry indeed should it turn out to be the case. I recommend that foreigners be admitted on equal right principles to

aid in establishing fisheries on the new fishing principle, in order to draw capital into the Country, and despatch business

Notwithstanding I recommended a large sum of money to be granted in aid of establishing fisheries on my new fishing principle, I have no expectation that such a course will be resorted to without deliberate consideration, I am therefore of the opinion that it would be recommendable to grant a sum of some magnitude to aid in establishing a fishery in some part of New Brunswick, with as little delay as possible, in order to fully test the principle.

Were fisheries extensively established on the above named fishing principle, and no nets or wiers to be arranged along shore in places where they would materially annoy Fish that breed in fresh water Rivers, the Fish would go of their own accord (apprehending no danger) into the Fish Ways, and slaughter pools without fearing the consequences, and the fishermen managing the business prudently, the fisheries would yield abundantly, and the Fish that pass up to breed will never know the danger, and will after passing down stream into the Sea, return year after year until they are caught. Fishermen catching Fish that breed in fresh water by the use of wiers and set nets, &c. along shore to be restricted as before explained, and to be subject to heavy penalties for improper management.

Take a view of the Saint John River. By establishing fisheries on its tributaries, and accommodating the Fish to pass and repass the Grand Falls, a great Salmon fishery being established there, and that and the tributary fisheries to be well managed, the Fish would be so plenty that the fisheries in Carleton, in the City of St. John, would probably be worth more than double what they are now, and be subject to the rules as before explained, and only Fish three days in the week. Salmon fisheries ought to be extensively established, as Salmon are good for home consumption, and profitable for exportation.

Salmon will go so far up streams that in extreme drought they will perish for want of nourishment; it is therefore recommendable when establishing fisheries, to obstruct their passage, preventing them from going beyond necessary limits.

Ever since I had a knowledge of the amount of the National debt of Great Britain, I felt more or less alarmed at its consequences. Feeling a great desire for the welfare of the British Empire, I spent much thought in devising ways and means to have the debt paid in a way that all parties, excepting Stockholders, would be satisfied; supposing that Stockholders would not wish to receive the principle, but would like to be always sure of the interest. Suppose the National debt to be £500,000,000 Sterling, and an inquiry to be made, how shall this debt be paid, in that case feeling confident of the good success of my River and Brook fishing principle, were it put in practice, I would say in reply to the inquiry, raise a fund to the amount of £25,000,000 Sterling, (£2,500,000 per year

would make up the amount in ten years) lay the money out as it is collected in establishing River and Brook fisheries on my new fishing principle. Let the yearly nett proceeds go to pay the principle of the debt. Suppose that amount were laid out in fisheries, and the fisheries to yield 100 per cent. in 1857 exclusive of the public Fish, and the income to continue the same, year after year, in 32 years, or in the year of our Lord 1889, £800,000,000 would be paid, exclusive of what the fisheries might pay previous to 1857, and supposing the previous sum paid to amount only to the £25,000,000 Sterling, and the interest thereon, taking into consideration the arrangement from first to last, it might be counted a good speculation. By the interest being paid yearly, in the usual way, and the principal not to exceed £800,000,000 Sterling, the debt would be completely annihilated in 1889. Then in future with good management, the same business that paid the National debt would probably support Government, and afford great quantities of Fish and money to be given yearly to the public, and likewise pay all other public demands. What a change of times it would make among the inhabitants of Great Britain and Ireland, in lieu of being laden with taxes and duties to an enormous rate, there would be no such thing as taxes and duties, &c., known. It appears to me that by accomplishing such a design, it would be the means, through the assistance of Divine Providence, of establishing such a union among the subjects to their Government as would render it next to an impossibility to break the bonds of friendship, providing each society had the privilege of only supporting their own Clergy.

Many people say that there is but little of the Revenue of Great Britain raised off the poor, which is a wrong saying. There are many poor people; they all eat, drink, and wear clothing, otherwise they could not exist; some of the articles they consume are subject to duty, consequently they help the Revenue in that way, should it be the case that they pay no direct tax. There is another way whereby they pay a great sum into the Revenue yearly. I beg leave to explain some of the particulars.—There are many different kinds of business carried on extensively in Great Britain and Ireland. It is reasonable to suppose that the great object is to make money by the business; consequently to accomplish the design, knowing the great taxes, duties, &c., that they who carry on have to pay, they have to provide for them, and in making provision, the wages of the poor working class of people, in many instances, are reduced so low that it affords them only a miserable subsistence, therefore part of the difference between what they get, and what they ought to have to make them comfortable; and as the saying is, lay up for a wet day, goes into the Treasury. It appears so reasonable to me that the National debt should be paid, that should I live a few years longer without hearing of an arrangement being made for the purpose, and retain rational faculties, I will wonder with astonishment at the great neglect.

Were I one of the chief Officers of the British Government, and

drawing a yearly pension of £30,000 Sterling, and had as good an opinion of my newly invented fishing principle as I now have, I would recommend to try it in the way before explained for the purpose of paying the National debt, and I would likewise freely give three fourths of my yearly Pension to aid in the good cause, and recommend to British subjects in high rank to be liberal in the enterprise in order to have the debt paid with as little delay as possible.

Many people will probably say, should this fishing principle be extensively put in practice, the World will be overrun with Fish. Suppose that in 1857 there were Fish caught on the new fishing principle to the amount of £150,000,000 Sterling, and to continue catching the same quantity yearly, should the population of the world be 1,000,000,000, an equal dividend of the Fish to each individual would only amount to three shillings Sterling a piece, that additional amount of Fish tax per year would appear trifling, and more especially so should the Fish be principally fat Salmon. I am of the opinion that were Fish to be caught on the new principle to the amount of £200,000,000 Sterling per year, it would answer better than a less quantity. Should salted Alwives, or Gaspereaux be sold in bulk for two shillings and three pence New Brunswick Currency per hundred, great quantities will be wanted for cattle. The men employed about the fisheries should be principally coopers, or, say a necessary proportion of them to be coopers in order that when they are not working among Fish they may be making barrels, &c.

Railways are being made in many parts of the World to accommodate the public, consequently when they are completed, Fish may be sent in many different directions at pleasure, and when many Railways are built that are not yet thought of, that will increase the circulation of Fish as well as other goods, &c.

Now is the day of improvement. Notwithstanding I made about one dozen models on what I supposed to be Perpetual Motion principles, and failed to gain an operation by any of them. I believe that since I made the last model I have invented plans that will operate with power. For want of means it is not in my power to try them at present. I believe myself now to be a better judge of Perpetual Motion principles than I was when I made the models.

I am in search of a great fortune, I am in hopes to obtain it by my inventions of River and Brook Fisheries, Perpetual Motion, &c. Should I get the fortune, I intend to expend it as follows:— A portion thereof not exceeding one-fourth to be equally divided among such of my relations, and connexions as I may think worthy to receive it. Another fourth to be permanently arranged for the benefit of the Poor of all denominations, and the balance to be for the payment of my debts, other private purposes, the payment of premiums in Agricultural pursuits, &c., and the support of the (C. spel, &c.

I feel so anxious about the payment of the National debt of Great Britain, that I cannot help saying a few words more on the subject. Should the fishing business be resorted to without much delay for the purpose of paying the National debt, no doubt should it be necessary, many good fishing privileges might be got in other Countries on reasonable terms, exclusive of the British Empire.

Much has been said in public print about Free Trade. Is there not mistaken notions about it. My opinion is that equal rights might be spoken of, but to talk of Free Trade until Taxes, &c. are abolished, judge ye.

Having submitted my remarks on my River and Brook fishing principle, it is now for wise men to use it in any way that may seem most expedient.

I was in hopes to have got this Pamphlet printed in time to have them circulated previous to the Legislature being prorogued, in order that after taking the subject of Fisheries fairly into consideration, a move might have been made, and a sum of money granted to aid in getting a Fishery established in behalf of the public, a Company, or an individual, in order that the new fishing principle might be tested with as little delay as possible. I found however that I could not publish within that time.

I stated that my River and Brook Fishing principle is never to be restricted should there be a prospect of me or my heirs, &c., being paid otherwise for the invention. I put my invention of Perpetual Motion on the same footing.

There is something said about granting premiums; should I get a fortune to the amount of Four Million Pounds, Sterling, the first individual or Company of people that puts a self-acting machine on any of my Perpetual Motion principles into successful operation to the extent of a Forty Horse power, is to receive twenty thousand pounds premium; and the first Ten Horse power, to receive five thousand pounds. And the first Fishery that will be established on my River and Brook Fishing principle that will yield twenty thousand barrels of fish with the first year's fishing, half the amount of fish to be salmon, will be entitled to receive a premium of twenty five thousand pounds; and the premiums will be in the same proportion, let me get a larger or a smaller sum.

In my opinion the explanation given of my River and Brook Fishing principle is so plain that it can be easily understood without seeing the Fish Way model, but a model is to be exhibited.

The most suitable place to establish a Fishery at the Grand Falls, on the Saint John River, is in the Cove below the old Portage Road. A Fish Way might be made through from the Cove in to the River above the Falls, in or near the range that was once contemplated to build a Canal.

Having said a few words on the subject of Perpetual Motion, I will now give a short explanation of one of my Perpetual Motion

principles. An operation can be gained by the use of a single wheel. In my opinion there can be sufficient power got by the principle to propel great ships on the ocean; but should it fail to answer that purpose, it will be sure to command power to propel stationary machinery on the land.

Let it be remembered that a one horse power, is sufficient to lift 33,000 pounds one foot per minute, and a wheel travelling at the rate of 240 feet per minute, carrying power with it to the amount of 138 lbs., is a one horse power.

The wheel is constructed by the use of quadrant buckets, valves, springs, and air tubes, &c. It operates in a cistern of water; its shaft is through the side of the cistern, the shaft is hollow, the air tubes pass from the buckets through into the hollow of the shaft, thereby giving the air a chance to pass and repass freely, in and out of the buckets. There is a metal valve to each bucket. Lead is the most suitable metal to make the valves of; but the pivots must be composition. The arrangement may be such as to have the valve to fall over on the springs immediately after it passes the perpendicular on the upper side of the wheel, the valve falling over opens the mouth of the bucket, and if the water flows over the top of the wheel, the bucket is at once filled with water, consequently the buckets are full of water on the falling side of the wheel, and the water is backed out of part of the buckets on the rising side, by the weight of the valves, and strength of the springs, thereby gaining a powerful operation and shutting the mouth of the buckets. When a Perpetual Motion model is made on the principle, different depths of water may be tried on the wheel, in order to ascertain the depth that will answer the best purpose.

A wheel 26 feet in diameter may have as many as 20 buckets, and supposing the wheel to be of such width as to admit a lead valve in each bucket, 18 feet in length; the bucket may be of such dimensions as to have the valve to weigh something more than four tons, and admit upwards of two tons and a quarter of water, with the valve, and by having the valves the weight named, the strength of the springs may be equal to three tons, operating on each valve when they are fallen over to their resting places.

On the seventh page of this Pamphlet there is a period that reads thus:—Suppose Salmon to cost one shilling per barrel extra for stripping, &c. The word splitting should be in lieu of the word stripping. In the 8th line of a paragraph on the 8th page, instead of so, read to.

This Pamphlet is published in this present month, April, 1847, but I published the Perpetual Motion principle, 3d April, 1843; and previous to that I exhibited Fish Way models, on my fishing principle.

**RICHARD M'FARLAN.**

Saint Patrick, New Brunswick, 1846.



