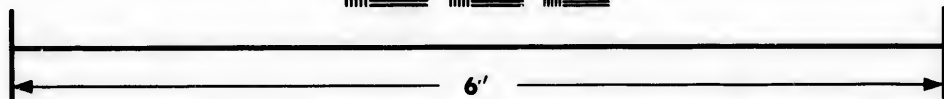
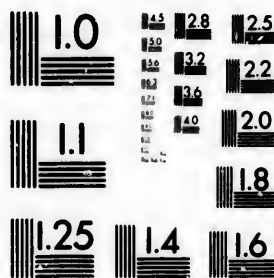


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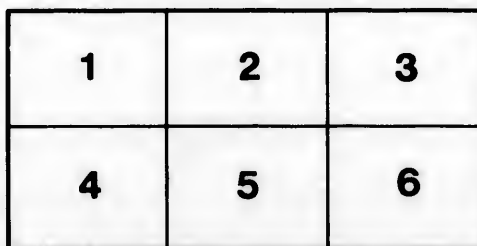
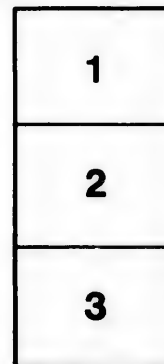
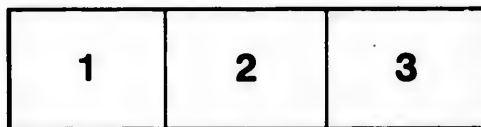
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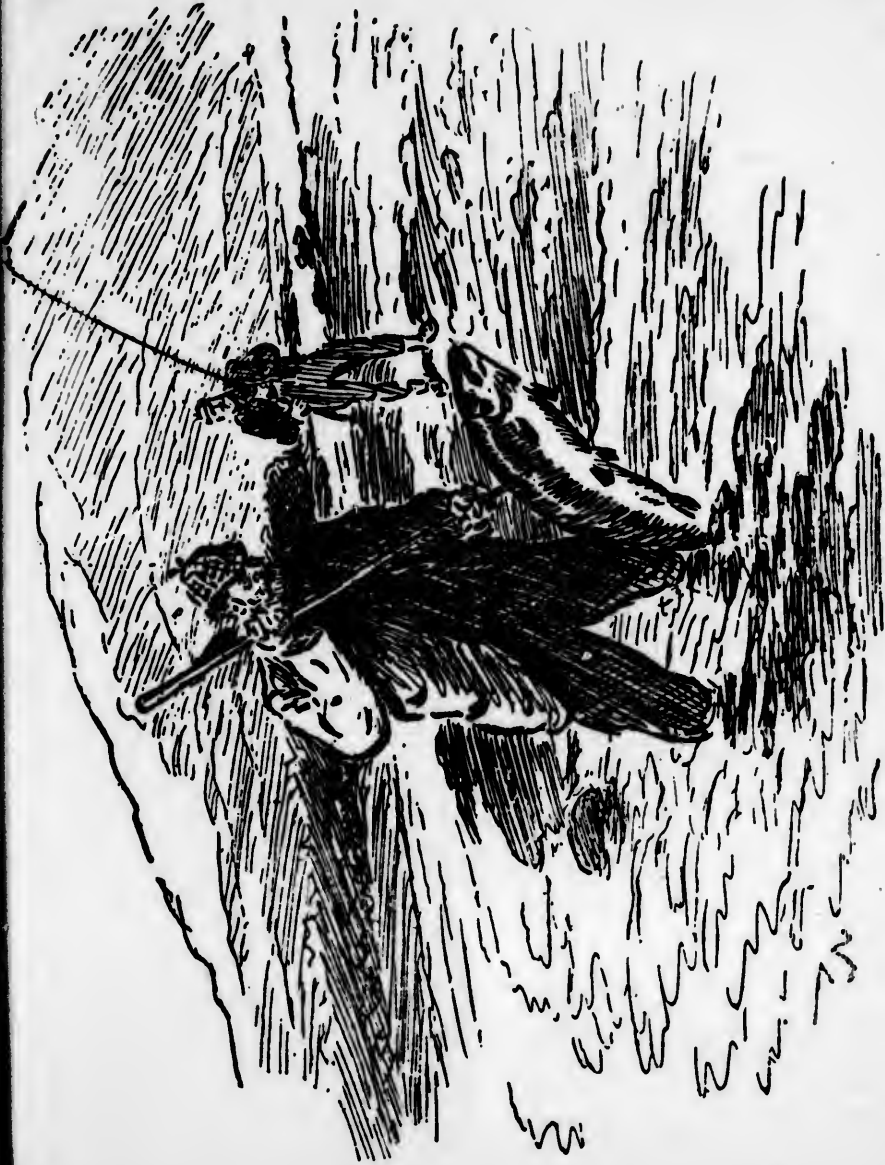
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GAFFING A SALMON.



# THE SALMON FISHER.

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BY  
CHARLES HALLOCK,  
Author of "The Fishing Tourist."

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THE HARRIS PUBLISHING COMPANY,  
10 Warren Street, New York.

1890.





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To the  
HON. ALLAN GILMOUR,  
of Ottawa, Can.,  
Eminent among Salmon Fishers,  
This Little Manual  
Is Respectfully Inscribed  
by the Author.

## PREFATORY.

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The "Salmon Fisher" in all the glory of his triumph is depicted in the illustration which faces the title page of my little manual. A Salmon on a rod is as difficult to handle as Salmon Angling with a pen ; and if we two, the gaffer and the writer, can but fix the one and the other deftly on the point of our respective irons, we may well rejoice at the successful consummation. While I am not confident that my treatise will receive the fulsome commendation hoped for, I can say this much, that the aforesaid vignette of the gillie gaffing the salmon, which I confess to have prigged from the *menu* card of the Fly-fishers' Club, of London, England, done on the 11th day of last December under the espionage of the worthy William Senior, of the *Field*, is the only truly correct representation of the act that I have ever seen ; and if the reader will but contemplate it *con amore* before attempting perusal of my book, he will be able to wade through its pages with a greater degree of interest than he otherwise might.

CHARLES HALLOCK.

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## PART VI.

ITINERARY OF THE SALMON RIVERS.

A bite! Hurrah! the lengthening line extends;  
Above the tugging fish the arched reed bends.  
He struggles hard and noble sport will yield,  
My liege, ere wearied out he quits the field.

—*Oppian.*

## Distribution of the Salmon.

---

**T**HE GEOGRAPHICAL RANGE of the Family Salmonidae is included within a belt of thirty to forty degrees width which girts the entire Northern Hemisphere from latitude 40 degrees up into the extreme Arctic region, extending across the continents of Europe, Asia, and America; in all three of which it is indigenous and equally abundant. On the Pacific ocean the belt dips down to the 30th parallel and takes in the waters of Southern California on its eastern shore and those of China and Japan on the west, but in all Atlantic waters the extreme southern limit is about 40 degrees.

In this widely distributed and very reputable Family of migratory, non-migratory, and anadro-

mous species are included the whitefish, graylings, caplins, eulachans, trouts, charrs, and smelts, and the most prominent of them all are the SALMONS, which constitute the subject of this sketch. These are divided specifically as well as geographically into two characteristic classes, of which one is known as *Salmo* (the leaper) and the other as *Oncorhynchus* (hook nose.) Of the latter there are five recognized species which are enumerated as follows in Jordan & Gilbert's amended Synopsis of Fishes (1883) :

SPECIES.	RANGE.
Dog Salmon ( <i>O. Keta</i> ).....	Sacramento River to Bering Strait.
Humpback ( <i>O. Gorbusha</i> ).....	“ to Kotzebue Sound.
Silver Salmon ( <i>O. Kisutch</i> ).....	“ “ “ “
Blueback ( <i>O. Nerka</i> ).....	Columbia River “ “ “
Quinnat ( <i>O. Chouicha</i> ).....	Monterey to the Arctic Ocean.

All of these have their several peculiarities very strongly developed. The snout in the adult males in summer and fall is greatly distorted ; the premaxillaries are prolonged, hooking over the lower jaw, which in turn is greatly elongated and somewhat hooked at tip ; the teeth on these bones greatly enlarged. The body becomes deep and compressed, a fleshy lump is developed in front of the dorsal fin,

and the scales of the back become imbedded in the flesh. The flesh, which is red and rich in spring, becomes dry and poor then. They are in no respect the shapely symmetrical, clean, lithe, and beautiful fish which dominates the Atlantic streams, although the Quinnat, or King Salmon, is the most comely of the five species named and the most valuable commercially, and may be justly called the typical and royal representative of the *Oncorhynchus* branch of the family. He is a good deal heavier fish than his congener of the Atlantic, and in the rivers of western Alaska will average fifty pounds, individuals often running up to 70 and 100 pounds in weight. His range is even more remarkable than that of any of his related species, wherever found, for they not only swarm in the Sacramento, in Southern California, but are found crowding the channels of Bach's Great Fish River and its tributaries in the Arctic Ocean. Upwards of thirty millions of pounds of Quinnat Salmon have been taken yearly in the Columbia River, and indeed the canned commodity is known all over the world where commerce extends. Immense numbers ascend the large rivers of the



Pacific coast and Bering Sea in spring and summer, moving up sometimes a thousand miles and more (as in the Yukon) until they are ready to spawn, after which most or all of those which have reached the upper waters perish from the combined exhaustion of the long journey and the labor of spawning. The passage of the river is a sickly spectacle, maimed and decaying fish in myriads offending sight and smell, and befouling the entire length of the water course from the sea to its springheads. During the mid-summer period\* of their "run" they swim in schools ten feet deep, or more, with ranks closed up solid, so that it is impossible to thrust a spear or boat-hook into the mass without fouling a fish. In some inlets and estuaries on the Alaska coast I have seen them jammed together so that they could not move at all; so that it is very easy to comprehend how it would be possible for a person to cross the stream dry shod if a plank were laid across their protruding backs.

On the northern Pacific coast the tide rises some eighteen feet (in some localities very much more),

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\* The heaviest run of Atlantic Salmon is in the autumn.

and when it is low the outflow of the rivers makes its precipitate passage to the sea by a series of rapids and pools ; but whenever the tide begins to make, the whole vicinity of the inlet, or channel, at once swarms with impatient salmon, and as the channel gradually fills with the growing flood the schools press inward and upward from the outside, until finally, when the tide is full, the stream becomes a slack water canal of which every cubic foot is choked with fish wedged tightly. In this extremity the helpless salmon become an easy prey to bears and other animals, as well as men, and one can lift them out with his hands until he is tired! Of course, under such conditions, the problem of rod-fishing requires no solution. At tide-water there is always good fishing with bait and spoon, and in California and Oregon and in Puget Sound, fishing by these methods is much in vogue. There are exceptional rivers, notably the Clackamas, in Oregon, where fly-fishing may be practiced at certain times in special localities, the fluvial conditions being more like those of the Atlantic rivers.

As has been mentioned, there are five varieties of

salmon on the Pacific, and some one of these is to be found in the rivers, in greater or less quantity, nearly the whole year round, so that proper conditions for fly-fishing are afforded if the angler happens to strike them. Fourteen Salmon have been taken from a Clackamas pool in one day by a single rod, where the water was shoal at both sides, and abruptly deepening to a depth of six or seven feet, with a current of about ten miles an hour at its head. The favorite fly is of a reddish cast, though black-hackle, coachman, professor, red ibis, and a wine body with brown speckled wings were all killing flies. June, July, and August were found to be the best months for fly-fishing.

Taxonomically, *Salmo Quinnat* (*O. chouicha*, now,) is described by Jordan & Gilbert as follows :

Color dusky above; often tinged with olivaceous or blueish; sides and below silvery; head dark slaty, usually darker than the body and little spotted; back dorsal fin and tail usually profusely covered with round black spots; these are sometimes few but very rarely altogether wanting; sides of head and caudal fin with a peculiar metallic tin-colored lustre; male, about the spawning season (October), blackish, more or less tinged or blotched with dull red. Head conic, rather pointed in the females and spring males. Maxillary rather slender, the small eye behind its middle. Teeth small, larger on sides of lower jaw than in front; vomerine teeth very few and weak, disappearing in the males. In the males, in late

summer and fall, the jaws become elongate and distorted, and the anterior teeth much enlarged, as in the related species. The body then becomes deeper, more compressed and arched at the shoulders, and the color nearly black. Preopercle and opercle strongly convex. Body comparatively robust, its depth greatest near its middle. Ventrals inserted behind middle of dorsal, ventral appendage half the length of the fin; caudal—unusual in this genus—strongly forked on a rather slender caudal peduncle. Flesh red and rich in spring, becoming paler in the fall as the spawning season approaches. Head 4; depth 4. B 15-16 to 18-19, the number on the two sides always unlike; D 11; A 16. Gill-rakers usually 9x14, i. e., 9 above the angle and 14 below. Pyloric coeca 140-185. Scales usually 27-146-29, the number in a longitudinal series varying from 140-155, and in California specimens as low as 135.

Very different is the Atlantic Salmon (*S. Salar* Linnaeus) to the scientific eye when compared with the foregoing and described by Jordan & Gilbert, to wit:

Body moderately elongate, symmetrical, not generally compressed. Head rather low. Mouth moderate, the maxillary reaching just past the eye, its length  $2\frac{1}{2}$ —3 in head; in young specimens the maxillary is proportionately shorter. Preoperculum with a distinct lower limb, the angle rounded. Scales comparatively large, rather larger posteriorly, silvery and well imbricated in the young, becoming imbedded in adult males. Coloration in the adult brownish above, the sides more or less silvery, with numerous black spots on sides of head, on body, and on fins, and red patches along the sides in the males; young specimens (parrs) with about eleven dusky cross bars, besides black spots and red patches, the color, as well as the form of the head and body, varying much with age, food and condition; the black spots in the adult often x-shaped, or xx-shaped. Head 4; depth 4. Br. 11; D 11; A 9; scales 23-120-21; vertebrae 60; pyloric coeca about 65. Weight 15-40 lbs. North Atlantic, ascending all suitable rivers, and

the region north of Cape Cod; sometimes permanently landlocked in lakes, where its habits and coloration (but no tangible specific characters,) change somewhat, when it becomes (in America) var. *Sabago*\*. One of the best known and most valued of fishes.

The above are the latest authorized formula of the Atlantic salmon, though the weight is underrated; for in the rivers Restigouche and Grand Cascape-diac, in Canada, specimens have been taken which weighed 60 lbs., and in Europe over 80 lbs. This species (*Salar*) is the representative salmon of Europe, the New England coast, the St. Lawrence basin, and the Maritime Provinces of the Canadian Dominion, and as this is the only true Atlantic salmon, it will be convenient for identification, and fully serve the purpose of this paper, to divide the Family generically into Atlantic Salmon and Pacific Salmon, and so to refer to them in the matter of designation and distinction. With respect to the Atlantic variety, its southern natural limit, within historical time, is unquestionably the Hudson River. [It is not within the scope of this article to refer to introduced or transplanted species]. That the Hudson was a salmon stream when discovered by Hendrick Hudson

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\* Also var. Winninish.—ED.

seems certain, for experiments of the U. S. Fish Commission have demonstrated that salmon planted in its headwaters will endeavor to return there to spawn in obedience to a well known instinct. But since Hudson's advent geological changes must have occurred in upper tributaries to bar the passage to suitable spawning grounds ; and besides, its present comparatively turbid condition, discolored as it is by commerce, manufactories, and the wash of farm lands lying along its entire length, is by no means as favorable to reproduction as when it was in its primitive state. With the ascent facilitated by fishways, a short time only will be necessary to demonstrate whether the salmon desire to be permanently domiciled.

As to their northernmost range: We learn from Lieut. Fred. Schwatka, who in 1887 crossed the divide which lies northwest of Hudson Bay, and between it and the Arctic Ocean, that fish life was far more abundant on the Arctic slope of the watershed than on the Hudson Bay slope, although the latter, like all sub-Arctic areas, is far from being the piscatorial desert which some persons suppose. Fish, he

says, became more numerous as his party advanced northward, and "hardly a lake failed to respond to our angling efforts." Said lakes constituted the feeders of rapid affluents of the Great Fish and Kettle rivers, and were inhabited by monster salmon weighing up to seventy-five pounds, whose vertical transverse sections were found to measure twenty (!) inches deep. Schwatka is of the opinion that a very large proportion of these salmon remain under the ice the greater part of the year, for the "angling" which he speaks of is mainly done through wells cut through ice six feet thick, into which bait and spear are inserted; and he suggests that these fish become imprisoned in deep holes by the water freezing to the bottom of the shallowest places and inclosing them. The number must certainly be very considerable, as the Esquimaux could most always get a fish by thrusting a spear into the holes at random; and the fish were very fat, so fat, he says, that they could be fried in their own oil if only the smallest amount of grease were first put into the pan to prevent burning. No doubt these fish recuperated in these ice-locked lakes after they had spawned, and they must have found an abundance of food. Arc-

tic salmon are not singular in this respect. There is invariably a fag end of the autumn run which remains all winter in the headwaters of the Laurentian tributaries, and only last winter (1890) as many as two hundred well conditioned salmon were taken through the ice with nets by market fishermen at the head of Belisle Bay, a pocket of the river St. John, in New Brunswick, thirty miles above the mouth of the river. This bay in the winter season is heavily stocked with pickerel, chub, suckers and other small fresh-water fish, though at very high tide the water may become slightly brackish. Mr. I. H. Phair, of Fredericton, who first communicated his observations to the *Forest and Stream*, states that the salmon are poor and dark colored in the early part of the winter, but as the season advances they improve and become exceedingly fat. The stomachs of those which were examined were found to be full of young fish, and a pickerel six or eight inches long was taken from the mouth of one of them. There were never brighter or fatter fish, Mr. Phair says; but when boiled a slight earthy or ground flavor was detected, like that peculiar to the land-locked salmon. These were of course late salmon which remained up stream all winter.



Undoubtedly there is but a single run of Arctic salmon. Their season is very short and they have scarcely time, between the melting and the freezing of the rivers, to make their periodical visit to the sea and return. In July the Indians spear them while ascending the rapids, which are then free of ice; but by the end of August everything is tight again, and the salmon are left to complete their duties of procreation and their subsequent recuperation, neither of which, it may be supposed, is rapid. Generally the fish run up in detached and straggling bunches, but occasionally in "long drawn schools."

All this is new and interesting. It illustrates the philosophy of prompt adaptation to environment, and demonstrates why fixed rules cannot be predicated upon desultory observations of fish movements. The circumpolar habitat of The Salmon has been very little investigated. Arctic explorers have paid scarcely any attention to the fish fauna of that zone, not even attempting to catch fish for the mess table, but depending almost wholly on ships' stores for subsistence. Some of them, like the ill-fated Danenhower party on the Lena River, in Siberia, died of starvation with an abundance of fish life all around

them, and all for lack of the simple knowledge of habitat and methods of fishing employed by the natives. The Schwatka observation party of 1883, on the north coast of Alaska, did far better, for he impressed into important service his natural taste for angling and his experience as an observer of fish habits and local devices. As has been stated above, he found an abundance of food—in fact, the profuseness of aquatic life in that region is unequalled elsewhere according to his assertion. But Mr. Schwatka's observations have been confined to a segment only of the polar belt. Very few persons outside of the Hudson's Bay Fur Company's agents know anything about the fish of the Arctic coast, and they are not usually scientific men, able to differentiate or classify species. We may be permitted to say, however, that the subject of Sub-Arctic Salmonidæ is one which has engaged the attention of the writer for thirty years, and that in the course of that period he has been able to gather, from his own personal visits and from extended inquiry, a good deal of substantial and accurate information, whereby the distribution of the Salmon from ocean to ocean has been measureably ascertained and the species

identified. The inter-oceanic boundary of the Atlantic and Pacific Salmon has been determined, and the range of the sea trout from Labrador to Alaska established. For this result and consummation I am especially indebted to Prof. Robert Bell, M. D., assistant director of the Geological Survey of Canada, whose scientific researches make his testimony invaluable and irrefutable. To summarize the results so far as obtained, it may be stated that the Atlantic Salmon (*salar*) is abundant along the entire Labrador coast and up around Cape Chidley, its extreme northern point, in about latitude  $62^{\circ}$ , and thence around into the Koksok, Georges River, Whale River and other rivers of the great Ungava Bay, on the north coast of Labrador. The west entrance of Hudson Strait seems to be the limit of its range. The Pacific Salmon (*Onchorhynchus chowicha*) begins on the mainland of the continent about Wager Inlet, and is netted somewhere around Melville Peninsula, and thence westward. Between Wager Inlet and the western entrance of Hudson Strait the Hudson Bay is projected southward in one tremendous indentation, and in its waters no Salmon are found—

only sea trout (*hearnii* of Rich. Frank, Journ. 706, and *immaculatus* and *hudsonicus* of Storer and Günther). Sea trout range from Maine and the Maritime Provinces all the way up the East Atlantic coast northward into Ungava Bay, and through Hudson Strait to Bay of Hope's Advance and Baffin Land. But while they are so abundant in the Hudson Bay proper, they are not found in James Bay, which is an immense projection of the same. The rivers on the west side of the Bay are not suitable for spawning, as they flow out of a prairie country which is often swampy or marshy, besides freezing up solid from the middle of October to the first of May. For some reason salmon do not frequent the rivers on the east side of the bay, although they flow from the same watershed which throws water in the opposite direction into the notable tributaries of the St. Lawrence. Probably the vast accumulations of ice which obstruct the approaches to Hudson Bay for almost eight months of the year are a sufficient obstacle to the entrance of salmon there. So, also, a freezing of the Hudson Bay affluents may be a cause for their barrenness; to which may be added a pre-

sumable dearth in those waters of the fish food upon which salmon fatten previous to entering rivers to spawn, and which recent observation has discovered to consist largely of crustacea such as shrimps, prawns, and mysis, as well as of annelids or sand worms, of herring sile, cephalopoda and floating invertebrata. Low temperature of itself would present no interposition to the salmon, for the colder the water the larger their size and the better their quality. When fish get direct access to a river the moment the ice goes out in the spring, the larger they are and the finer in flavor. When the ice has gone out a month or two before the run begins, the fish are smaller and inferior because the water has had time to get warm. It is so on the Pacific as well as on the Atlantic. In the Port Medway River, in Nova Scotia, the run is in February; in the Yukon, Alaska, it occurs early in May; in the Godbout, on the Lower St. Lawrence, it takes place in June, and there the fish are notoriously small. In the Sacramento and other California rivers both the size and flavor are impaired by the low latitude. The salmon of the Columbia are by no means as fine or

as large as those of Alaska, although the species are the same.

West of the Hudson Bay the sea trout (*S. canadensis* or *immaculatus*) are replaced by *S. malma*—so stated by Dr. Bean.\* The Hudson Bay waters also seem to separate the habitats of the Atlantic and Pacific salmon. Thence, westward, the range of the *O. chouicha* continues indefinitely. As has been stated, it is abundant in the Great Fish River and its tributaries, but it is not found in the Mackenzie, some degrees to the westward. Diaries of resident agents of the Hudson Bay Company show that the ice is seldom out of that river, even in the hottest months. It covers the Great Slave Lake in June and is floating about the delta of the Mackenzie in July and August. Representatives of the Salmonidæ found in that river are sea trout and a species of *Coregonus*, or whitefish, known as "inconnu," which is very little esteemed for food. There are comparatively few rivers along the Arctic shore, and in many of these no salmon are found, for physical rea-

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\* I have caught and handled trout on the southeastern Alaska coast which seemed to me to be identical with the Atlantic sea trout.

sons, doubtless, as is true also of Atlantic coast rivers. There may be also physical reasons to account for the big break in the ranks of the salmon made by the interposition of the Hudson Bay, and when those are ascertained scientists may be able to discover why the fish to the eastward of the bay are of one species (*salar*) and those to the westward of another (*chouicha*).

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Life History of the Salmon.



## Life History of the Salmon.

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**D**R. GÜNTHER demonstrates not only how fishes can gradually accommodate themselves to either salt or fresh water, but that there are some species which seem quite indifferent to a rapid change from one to the other. Individuals of the same species may be found at some distance out at sea, while others live in rivers beyond the influence of the tide, or even in inland fresh waters that are practically land-locked. This postulate covers the case of the fresh-water variety of Atlantic salmon known as *S. salar*, var. *sebago*, which, in all respects save the habit of anadromy, it so nearly resembles. The analogy becomes especially noticeable when the fact is substantiated that the sea salmon subsist largely on caplin and the

land-locked variety on smelts. Land-locked salmon spawn in autumn, contemporaneously with the sea salmon. The smelt spawns in early spring, and ova hatch about the time the salmon fry begin to forage for themselves.

Under the increasing light which we now have, scientists believe that the natural habitat of the entire family of Salmonidæ is fresh water, and that it is the sea salmon which has become erratic, and not the land-locked salmon of the inland lakes. *Salmo salar* has put on sea habits, and so have others of his tribe on both sides of the Atlantic, notably the sea trout. Up to the present time the winninish (*wa-wa-nish* in the Indian vernacular) of the Saguenay River have been popularly supposed to keep exclusively to fresh water, and the salmon of Lake Ontario and its tributaries have been believed not to enter salt water, although both have direct access to it. Reckoning from analogy, it may be logically inferred that the habits of the winninish do not differ materially from those of other salmon having unobstructed access to the sea, only that the peculiar conformation of the Saguenay region and the extreme

depth of the river have hitherto prevented such practical observations as are necessary to establish essential physical facts. Therefore, it is reasonable to assume that, inasmuch as it is the habit of all sea salmon to revisit their native rivers, and that it is quite possible for experts to identify the fish belonging to each respective river, the winninish, so called, are but members of one of these several clans, and that they too visit the sea periodically, running up in June and July ; that they spawn in the autumn in the tributaries of Lake St. John—in nearly all of which they occur, and pass their winters in the lake itself, precisely after the custom of other sea salmon similarly situated. They are not seen until they reach the riffis of the Chute or Grande Discharge because that is the first shoal water they strike after coming out of the tide. In places the Saguenay is 1,000 feet deep, and up to Chicoutimi itself an extreme average depth is maintained. Other clans of salmon which enter the river deploy into the Marguerite, the Mars, the Chicoutimi, and the Little Saguenay, but the winninish, of a somewhat different pattern, and marked with the xx instead of the round

spots, continue to extreme headwaters beyond the lake until they are stopped by falls. In Lake St. John they subsist largely upon *watouche*, or whitefish, which are replaced by smelts in Lake Sebago, and other waters of Maine and Canada, and by caplin in the ocean. Observers cannot but be impressed by the coincidence that these several food fish all belong to sub-species of Salmonidæ, and that salmon are perhaps more partial to their own kind as an article of diet than to aliens, especially when they pose as ravenous kelts in the winter season and early spring. Farthermore, it must be added that the winninish exhibit the peculiarities of all salmon in spawning time. As the season progresses they lose their lustrous sheen of the early spring, and in fall become dark and cloudy, and thus have deceived some superficial observers who imagined them to be different species of the same fish.

Some twenty years ago I wrote in the *Fishing Tourist* to the effect that "in winter they are scattered through the deep water of Lake St. John, and in June they descend to the series of rapids below to spawn." I wrote under the impression that they

were a landlocked species. My only ground for the conclusion was that the fish were never seen in the lower river. [How could they be?] At present, in revision of that antique hypothesis, I would write: "In winter they are scattered through the deep water of Lake St. John, and in June *ascend* the rapids to spawn," having previously visited the sea, which they would do *ad libitum* at any season of the year, being at no time ice-locked.

The above characteristics are equally true of the salmon of the Schoodic Lakes and the St. Croix River in Maine and New Brunswick; and there are also the same fluvial conditions, the lakes with their tributaries or feeders, the riffs below the outlets, and the salt sea at the river's mouth, which the fish instinctively sought in old times until disbarred by artificial obstructions. Indeed, it is now known that the range of the landlocked salmon is not only conterminous with that of the sea salmon, but that its types correspond with the Atlantic and Pacific Ocean types. It is not only distributed throughout Quebec, Ontario, and the Maritime Provinces of Canada, as well as Maine, but it occurs in British Columbia and

Idaho, and in tributary lakes of Lake Superior, where "it is called red trout by the natives and grows to the size of 40 lbs., and is not to be confounded with the common lake trout (*S. namaycush*) whose flesh is white."—[L. H. Smith, of Strathroy, Canada, in London *Field*.] In fact, one well informed writer (Dr. Shufeldt), whose opinion reflects the modern scientific acceptation, remarks that the Family Salmonidæ is one which we now know dates back as far as the tertiary period. Analogy would indicate that they developed in the fresh waters of the Northern Hemisphere in obedience to the law of equal conditions, and some of them gradually acquired the habit of going to sea, and thus, as in the case of the salmon, became permanent. In obedience to the law of evolution which requires each individual to pass through, in his short cycle, the same changes which his various forms of ancestors have in the slow progress of ages, the young must be born and live for a time at least in fresh water; and hence we find our salmon coming into the rivers to deposit their spawn. It is probable that at the opening of the glacial epoch the fresh waters of

North America swarmed with various Salmonoid fishes." Accordingly, at the close of this epoch, all the streams and basins which had been subjected to its influence were gouged out and destroyed and their tenants summarily dispossessed. One direct result was to drive the salmon into the sea.

An English writer has very sagely remarked that "the wider the knowledge possessed of salmon and salmon rivers, the less inclined the possessor of that knowledge is to dogmatize on the applicability, *all round*, of any particular fact relating to the habits, the migrations, or the seasonableness of fish." It may well be doubted if any one writer is qualified to speak *ex cathedra* on the subject along its entire line ; but inability results from a limited sphere of observation rather than the inaccessibility of facts. Without comparative data, observers are all at sixes and sevens, for there is nothing constant in the life history of the salmon except his alternate visits to the sea and river ; and these are liable to be disturbed by a score of contributory causes, such as sudden changes of temperature, storms, erratic movements of small fish on which they feed, the raids of por-

poises or seals, etc., etc., which might drive off a run temporarily, or split it up into fragments. Books are correct in the main upon the cardinal points of a salmon's birth, growth and vicissitudes, and they need hardly be restated here. The practical naturalist has learned by investigation that its existence, like man's, is divided into four periods, namely, infancy, adolescence, maturity, and ripe old age, and he designates these several stages of development by the name of Parr, Smolt, Grilse, and Salmon. Observation has taught him that one portion of this existence is passed in salt water and the remainder in fresh ; and that these conditions are the necessary precedent and natural sequence of procreation ; that many of the species die in the attempt to reach their spawning grounds ; and that waste and mortality are in accordance with the ordinary phenomena of reproduction throughout the animal creation. The spawn of the salmon having been deposited in the gravel of the rapid upper stream, is hatched out in due course, and in due course the young fry reach their period of adolescence and make their first venture to the sea in the motley garb of smolts—



one-half of a brood preceding the other by a long interval, by a wise provision of nature, lest the lives of an entire hatching should be simultaneously jeopardized by some untoward casualty. In the nourishing waters of the ocean the smolt gains a pound in weight per month, and after a luxurious summer returns to his birthplace in the blue and silver livery of a grilse, and very like an adult in appearance, many of the males having, indeed, attained sexual maturity, affording no end of sport to the angler who happens to get one on his fly. The grilse tarries in the upper river until the following spring, and then returns to the sea a full grown salmon, recuperates and fattens in the brine, and again ascends at last on its eventful mission of procreation. After the gravid fish have spawned they stay in the river all winter and if there are lakes at their headwaters which are well stocked with food they soon recuperate and put on flesh; but if not, they play havoc with the salmon peel which they find in the main river, and are often picked up by the June angler, while working their way down to salt water, still pitifully lean and emaciated but

ravenous to extremity, and half dazed by their long abstinence. They are called "kelts" then, and more disgusting objects can hardly be imagined. Their stomachs are shrunk entirely away and they seem to be nothing but head, back and tail. They have lost fully half of their original weight, and whatever scales they show are very minute, being not more than one-eighth their natural size. In mid-winter their skin hung in loose, thick folds, and the scales all sloughed off. These small ones seen now are a new growth, and by next September they will have regained their normal size.

Very different is the fresh-run June salmon. What can be more beautiful than his plump and shapely form, broad shoulders, keen, bright eye and armature of silver resplendent with the sparkling drops of the limpid river! The females are the most comely, being readily distinguished by their shorter heads. No wonder they frolic and leap for joy when they find themselves in the clear, cool stream after escaping the assassins of the sea and the dangers of the passage.

A good deal of bosh has been written in all the

books since Dame Berner's time, about salmon not eating when ascending to their spawning grounds, but that theory is now wholly exploded. Indeed, naturalists are able to declare that the *only* purpose for which they enter the rivers in the spring is to feed! This statement applies not only to salmon but to sea trout, shad, herring, striped bass, and all kinds of anadromous fishes as well. All these several kinds of fish have been taken on the fly at the season named, and the food which they are in pursuit of when they "strike in" has been indubitably ascertained by investigation. That of the salmon consists, as has been stated, in great part of herring sile and fry of all kinds, including young Salmonidæ and other salt and fresh-water varieties, shrimps, prawns, crustaceans, cephalopods, floating invertebrata and whatever else they can procure at the varying seasons of the year. In fact, salmon are almost omniverous, especially in the winter months. Quite recently, in indicating killing baits for salmon in some northern rivers of Great Britain, Mr. G. M. Mackay, a writer in the London *Fishing Gazette*, has furnished, perhaps unwittingly, the key to the long-

mooted question why salmon run up the rivers in the spring, and whether they eat while there. With this key before us the way to a satisfactory solution becomes easy.

The subjoined article, which is apparently written by Mr. Mackay from the standpoint of a professional angler rather than that of a scientist pure and simple, specifies no less than seven different baits which the salmon take eagerly at times while in the rivers, to wit: natural minnows, small "burn" or brook trout, prawns, worms, phantoms, Devons and spoons. The Devons and phantoms are artificial imitations of the natural minnow. This list of seven baits, to which, of course, the never failing artificial fly must be added, shows that salmon are at least promiscuous feeders. The next fact to determine is, how much they eat. We think we shall be able to show that they are as voracious as they are omniverous. Some of these baits, it will be observed, take best in spring, others in midsummer, and still others in autumn; some take best when the water is clear, and others when it is roiled and discolored; some when the water is thin and low, and others on the surge

of a mighty flood. There are no conditions or stages, it would seem, when the salmon will not accept one or more of the above named baits—"at some time or other in the course of twenty-four hours." Nothing interferes with their appetites. These observations of Mr. Mackay are, therefore, of the utmost importance in determining the hitherto mysterious biology of this remarkable and much investigated fish. All the books which have hitherto been written since the days of Walton have not approached so near the line of correct conclusions. But we proceed to quote:

"Fresh-run salmon take the natural minnow with avidity, but when it has been once or twice over the pool in a settled water, the game is not worth the candle. The natural minnow is of little use till the spring is well advanced and the temperature of the water well up. It does exceedingly well in the autumn months, but here again with fresh-run fish.

"As a substitute for natural minnow, small, distinctly marked burn trout, from a clear stream, often prove fetching, and the more so if they have a golden tinge along the sides and vent. Minnows of this

description—which are frequently found in favored localities—are most deadly with grilse.

“The Devon is a popular lure from season’s end to season’s end in heavy waters. Much depends on its spinning qualities, and the same observation with regard to the use of the various colored phantoms holds equally good. A clear Devon for a clear water, and a yellow or brown when the water is colored. A striped Devon, on the other hand, has the combined advantages of both. Spinning with the Devon follows on exactly the same lines as spinning with the natural minnow. The Devon is a good evening bait, and salmon will come at it when it is uselessly late for offering any other lure. It is a good grilse lure in streams and in a biggish water, but its most deadly records are made in the tidal waters in the heart of a run of sea trout. The prawn is a pure enigma, yet it is a fetching lure under somewhat the same conditions as the natural minnow. But in addition, when a potted fish cannot be approached with any other thing, it will succumb to the prawn, and this even in a small clear water.

“The salmon takes the worm best when the water

is slightly browned and on the rise. In the neck of a stream in midsummer is the next deadly opportunity, but under most other conditions the worm as a salmon lure may be classified in the category of eccentricities. There is no saying when it may or may not be successful, and fish have been killed under all conditions with it. Yet it is not a favorite lure. Its uncertainty may have much to do with its unpopularity. Still, it has been asserted that salmon will invariably be tempted to try a worm at some time or other in the course of the twenty-four hours. With grilse nothing beats the worm, and especially if they are fresh from the sea. Not even the worm will tempt grilse when running, but when they are resting in any bit of slack water, let the worm come rolling toward them and they will take it for a certainty. When they congregate in a deep pool they may be picked out, one after another, if they be at all on the feed. This, however, when the water is slightly browned, in preference to crystal clearness. In a black water the worm is refused alike by salmon, grilse and sea trout, and nothing seems to work like the spoon bait. In a mighty flood, when

every other lure proves useless, the phantom and the spoon divide the honors between them, but when the sweeping flood is of that inky black color, the phantom has to yield the palm to the spoon, which under such conditions reigns supreme. In early autumn the streams are often of this abominable color, the early floods being dyed with the hues of decaying vegetation, often attributed to the swillings of peat bogs. Then, if a salmon be brought to book at all, it will most likely be with the spoon. Although spoon baits may be successfully used under other conditions than the above, such as in searching streamy water, even when small and clear, they are *par excellence* the lure in heavy waters."

More than ever before is bait fishing becoming the vogue now in Scottish salmon rivers. "Not so very long ago," says one resident observer, "an angler detected in the act of using any other lure than the fly would, in most districts, have been looked upon as a pot-hunter and poacher, and shunned by true sportsmen accordingly. Now, however, with the march of progress *tempora mutantur*, and the minnow, prawn or worm is unblushingly mounted, and salmon



and trout killed by men who know as much about fly-fishing as does a jackass."

Bait fishing, it would seem, was the primitive method, just as it now is on the Pacific coast rivers. How, then, did our dilettanti anglers and all the book-makers get the idea that salmon could only be taken with the fly? The answer is sufficiently obvious: It is because the few who angled for salmon fifty years ago were distinctively "gentlemen sportsmen" trained to legitimate work. On this side of the Atlantic they were chiefly British army officers who affected only high art; or possibly they never heard of any other method of taking salmon than with fly, inheriting the idea from a goodly line of piscatorial ancestors who had generations before them been ridiculed into eschewing the vulgar bait because it was "not the correct thing." At all events nobody, up to date, had scarcely thought of testing rising fish with bait of any kind. If the fish did not rise within an hour after persistent whipping, they concluded that they were not in the humor and adjourned for another trial later on.

It has been mentioned that salmon are almost

omnivorous at some seasons. But in spring their chief article of diet and main subsistence are the annelids which swarm in from the ocean to breed in the beach-flats. The breeding season of these sandworms is in April, and later, according to temperature and latitude, and at that time the seashores literally swarm with them, either swimming free like eels in great masses, or housed in burrows. Wherever there is a flat of mixed mud and sand they are sure to be found in great quantities, but they are not common on beaches of clear sand. Some kinds are very numerous under rocks between tides, living in tough, durable tubes which they construct for themselves. Indeed, all the annelids constitute a most important element in the diet of fishes, not only of nomadic and littoral species, but of those which constantly root for them in their beds, like the tautog, scup, haddock, etc., wherefore, it will be readily understood that salmon hug the shore in early spring because they are after these sandworms, as well as small fry of all sorts, which they follow into the estuaries, and even into the rivers. They enter the rivers in spring because they follow their

food there. In the Arctic rivers there is no spring run of salmon, because the season does not open till the latter part of June, on account of the ice, and the advent and breeding of all marine forms is retarded. The only run is in midsummer. There is no autumn run, for the rivers are frozen tight by the end of September. Low temperature makes fishes sluggish. It benumbs them, just as it does other creatures. Fishes do not travel as fast, or play as well on a rod, at, say, thirty-five degrees of temperature as at fifty-five. While salmon are not so sensibly affected by temperature of water as many other fishes, it is a condition which operates materially against them in one way. The specific gravity of stream water being greater at low temperature than at high, salmon have a greater force to contend with then in ascending the rivers, and consequently sustained travel becomes laborious, and is impeded. Cold weather makes a season late. River fish cannot move into warmer quarters at will like salt water fish, which make for the Gulf Stream on the advent of hard frost, or when the ocean becomes chilled by icebergs drifting, nor can they warm their cold-

blooded bodies by vigorous gymnastic exercise. They can only wait patiently for warmer weather. Salmon, however, which have not passed above the estuaries, often drop back into the ocean and remain there until a more propitious time for another attempted ascent, thereby constituting a second or third run as the case may be.

Varying conditions govern all the rivers of Europe and America as well, so that it is inexpedient to attempt to predicate the movements and habits of the denizens of one river by those of another. In the Bay Chaleur, Canada, netters keep their snares out only for a short time in spring, because the run is soon over. The salmon drop back to the sea. In mid-summer, in most Canadian streams, there is a second run, because the rivers are kept full from the reservoirs of still unmelted snow at their sources. The water is cold, and marine forms are only just beginning to enter these channels. In many rivers the water gets low and too warm for the salmon to remain, and they stay empty all summer unless a "spate" comes. If all incomers remained they would be too crowded to move, as in some rivers on

the Pacific. Fish are continuously in large rivers the whole year round—that is, squads or individuals are found—but the great body of fish move together. This principal movement, or migration, takes place in the early autumn in most rivers, after the fall rains swell their volume, for two reasons: first, because it is near their true spawning season, and second, because it is easier for them to surmount falls, rapids and other obstacles when the river is full.

On rivers of extreme length, like the Columbia, Yukon, Kuskokvim, and others of the Pacific coast, the spring run of salmon does not go back to the sea, for obvious reasons. If the fish have 500 miles or more to ascend, they cannot afford to lose time by running in and out, for swift as their speed is in long reaches of clear water, they cannot overcome difficult obstructions without painful and repeated efforts, often lacerating themselves most shockingly. High falls especially retard their progress. To surmount these they are obliged to climb their rugged abutments, which are full of pockets and crevices and projections, over which the lateral overflow is constantly spilling in greater or less quantity; and

it is not altogether an impossible feat for a salmon to mount a very high fall by these gradual steps, stopping betimes to rest his muscles and moisten his gills in the little basins which present themselves conveniently at hand. But they will not essay this side passage until they have persistently attempted to leap the breast of the fall; hence, some careless observers have maintained against all reason, common sense, and mathematical demonstration, that salmon leap falls sixteen feet high and upwards! However, up the fish must go, impelled irresistibly by the instinct of procreation, which demands that they shall reach the upper waters. The time of spawning often varies in the same river, and is determined by the period at which impregnation has taken place. A portion of the run, therefore, being riper than the rest, spawn sooner, and having fulfilled their mission, return at once to the sea, while their less fortunate belated kindred must continue their pilgrimage, perchance to headwaters; for so long as their great work remains unaccomplished, they will pass on until stopped by unsurmountable obstacles. Ripe salmon are obliged to

halt and deposit their spawn in the gravel wherever the crisis overtakes them. Where the rivers are short, like those of the east Atlantic coast, the salmon return to the sea merely emaciated and greatly reduced in weight, but in the Columbia, and like rivers, which extend for hundreds of miles, they die by millions, worn out and exhausted by their incredible journey. Such as reach the upper spawning beds arrive in sorry plight, mutilated, crushed and almost shapeless. Fortunate are those which have vitality enough left to be able to return to the sea. Indeed, so great is the mortality, that it has been generally believed that they never return at all.

Observers declare that they seldom find any traces of food in the stomachs of ascending fish; and hence, probably, has arisen the fable that they do not eat. But such a supposition is contrary to all the demands of nature. As regards spring salmon, it would be impossible for them to sustain life for the five months intervening until autumn, unless they fed; while in respect to the late autumn run, they but follow the instincts of all pregnant creatures on the eve of parturition. The latter eat con-

tinually, but capriciously—here a little and there a little—pettish, fastidious, ravenous and indisposed by turns, while the soft and pulpy character of their food enables them to digest it almost as soon as swallowed. It would be inexplicable, indeed, if salmon alone of all creatures, were not required by nature to fortify and strengthen themselves for the supremest act of physical existence. Physiology will easily explain why the distended ovaries, pressing upon the stomach and intestines, will not permit the introduction of food except in very limited quantities, and the most delicate kinds at that. In this crisis the sandworm becomes a most important factor in the economy of the seashore and salmon river. His pulpy body dissolves in the stomach of the salmon like starch or glucose. Dr. P. Pancritius, of Germany, has described the chemistry of digestion in fishes in the most intelligent way, in Bulletin No. 10 of the U. S. Fish Commission.

Referring again to the important part which annelids or sandworms bear in ichthye economy, it may be stated that salmon are more apt to feed at night than in the daytime, because the annelids are in th



habit of leaving their burrows at that time, when they come to the surface in vast numbers, swimming about like eels, and becoming an easy prey to many kinds of fishes. Boring annelids have also the habit when making their perforations in the sand, of rotating rapidly in a spiral coil, whereby they penetrate with great rapidity, often disappearing almost instantly ; wher by it is possible to account for the attractions to the salmon of revolving spoons and spinning tackle, the color of the worms being red, purple, yellow and crimson as well.

Furthermore : some of these annelids are carnivorous and very rapacious, according to Prof. Verrill, from whom we learn much of their habits. *Nereis virens* and *Rhyncobolus americanus*, both common to the north Atlantic, have large retractile probosces, armed with strong, fang-like jaws at the ends, and many smaller teeth at the sides, whereby they seize and devour their prey. *Nereis* grows to the length of eighteen inches. They live largely upon other worms, and thus we are able to account for the presence of tape worms, thread worms, and round worms in sea trout and salmon. Naturalists aver that the

tape worm goes through a series of metamorphoses, and when found in any animal must have previously reached a certain development in some other animal, of which it has been the prey. Cysts of the tape worm may have been formed in the sandworm, and so passed into the salmon and there developed. Whether the theory be scientifically correct, or not, it sufficiently accounts for a phenomenon which has hitherto baffled investigation. The salmon either takes his tape worm *au naturel*, or at second hand.

NOTE (referring to Winninish on page 29).—Numbers of heavy Salmo Winninish have been caught in the Ashuapmouchouan, Metabachouan, Peribonka, and other tributaries of Lake St. John, in September. These upper rivers are their spawning grounds, and not the riffs of the Grande Discharge.

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## Technology of Salmon Fishing.

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**A**BOUT the 30th of May in the river Restigouche and kindred Bay Chaleur streams, and perhaps three weeks later for the Lower St. Lawrence, is the time when the wide-awake professional angler will get on to a stream. For thirty years past it was necessary for residents of the United States to go to Canada for their salmon fishing ; and indeed they go there now more than ever ; but thanks to the persistent efforts of the Fish Commission, the streams of Maine are once more available. Both branches of the Penobscot, the Wassatoonoch, the Mattewamkeag, and the tributaries of the Sebago and Weld's Pond, are especially mentioned as being quite restored and furnishing good sport to the angler,

while many other lakes in the Pine Tree State afford good fishing for the land-locked variety. Twenty years ago I would have thought an 18-foot rod too long for a man of ordinary strength to handle, but now that our American makers fashion rods so light, I am inclined to return to the old English standard of length. The advantage of length of rod in delivering a heavy line as well as in lifting it over mid-channel obstructions, is manifest. The fact is, that any rod of whatever length which is too cumbersome to be wielded with the two hands without the adjuncts of waist belt and thimble, should be discarded. Of course the general principles of casting with the two-handed rod are the same as with a light single-handed trout rod, but an expert trout angler will have to practice long before he can cast a salmon line skillfully. The upward and outward lift of the line, the checking of the rod movement at the correct angle behind the shoulder so as to give time and scope for play of back line, and the delivery of the straight forward downward cast, are very much the same ; but the motion in salmon casting is more deliberate because the implements are heavier and

the line longer. Besides, the trout rod is manipulated with the forearm only, whereas the salmon rod engages the wrist, arms, legs, and whole body. Like the rod itself, the body must be supple, elastic, and sympathetic with it. A rigid statuesque pose or action is fatal to excellence in delivery. As to material of rod, I make no choice between the best wooden rods of Wm. Mitchell and the split bamboo of Leonard, except that the life of the wooden rod is the longest. There are few wooden rods indeed which are equal to the best split bamboo, and for those greenheart or ash are preferred. Many old salmon anglers have a second rod of less weight and length, which is better adapted for switching when casting-room is restricted, and for use in calm days and quiet waters. Whenever one can use this lighter rod the climax of pleasure is reached. The heavier rod is for heroic work in heavy waters, with stiff wind blowing, perhaps, when the fishing may be called taxing.

For fittings I would have standing guides and a pivoted eyelet for the tip. For reel I use the combination rubber and nickel with flange enclosing

the crank. This I recommend for its lightness, though a reel should always be of a proper ascertained weight to balance the rod. When the new automatic salmon reel comes upon the market, the probabilities are that it will be adopted by veteran anglers, as the utility of the automatic trout and bass reels in present use has been demonstrated beyond a doubt. Mr. John Mowat recommends it.

As to the line, 100 yards of oiled silk or braided linen line are enough, unless your fish gets into a long rapid, and then you want a thousand if you cannot follow. A gaff and gaffer are indispensable. Some experienced anglers have justly declared that a first-class salmon line is one of the most difficult articles of an outfit to procure ; but no one save an experienced angler can appreciate its value. A thoroughly good line should be perfectly pliable and yet have the substance in it to make it feel quite solid. A line that is light for its bulk is of little use in casting against the wind, and one that is hard and stiff is too long in running out straight in the water. A line should be heavy and not thick. It should be thoroughly waterproofed, so as not to rot,

and it should taper for seven to eight yards at the end. A bulky line shows too much in the water. It is a good rule to fish with as thin a line as one can possibly make good casting with.

There is a good deal of nonsense afloat about the selection of flies—the least experienced anglers being apt to talk most empirically of patterns, sizes, and numbers of hooks; and a sort of international dispute is rife as to the size of flies used by English and American anglers respectively—it being charged that Americans use giant flies habitually, while his more intelligent British cousin fishes “fine and far off, you know.” The truth is, that national proclivities disappear when skilled anglers come to the scratch, and one is just as apt as the other to select those flies which are most suitable to the water and the season, both as regards size and pattern. An old Scotch angler in the *London Fishing Gazette* gives this good advice. He says:

“Many anglers get so conservative in their ideas that they think if the fish do not take a Jock Scott or some ther fancy one they have, all the same size, they will take nothing. I consider this a great mis-



take. Many days one fly will kill when another will not. If fish are not rising to one fly, too much time should not be lost in persevering with it, but another should be tried. If another angler on the same water is getting good sport and you are not, it is better to find out what fly he is killing with. Where the water runs heavy and deep, and where it is rough and rapid, a larger fly should be used than where it runs shallow and quiet. In the evening, when the light goes off the water, a fly a size or two larger and of brighter colors can be used with effect. A silver body does well. A Williamson with long jungle-cock in the wing shows up wonderfully well. In a rising water it is always advisable to use a larger fly."

Large flies are also required in early spring fishing. The most killing for mid-season are Turkey-wing, Jock Scott, the Silver Doctor, dun wing, and the black doe. Yellow mohair and golden pheasant are the best for early rivers, notably those of Nova Scotia. In latter years I have learned to use double hooks. They swim the water better, and are more likely to fasten to a fish. On the whole, I do not

find salmon to be as capricious as trout, bass, and some other kinds of fish. The truth is, if salmon are in a taking mood, they are not particular as to the kind of fly offered. Favorite flies are more apt to be the favorites of the anglers themselves than of the fish they are in quest of. The old angler just referred to observes farther (I always prefer to quote opinions of others when they corroborate my own):

“As a rule, the moment the river begins to come out, fish rise very freely and continue for a quarter of an hour to an hour, and then go off altogether. Seldom have I seen them rise for a whole hour. In some rivers fish will rise until the water is so dirty that they cannot see the fly. The moment the fish begin to stop running and take up their resting places, and the river is clear enough for them to see the fly, I consider the best time to fish. Many of the fish have never seen a fly, so that they rise much more readily the first time they have been fished over. When the river is colored, the shallowest part where fish lie should be fished, the fish of course having a better chance to see the fly than where it is

deep. Many young anglers rise a great many fish and fail to hook them. Even some long experienced anglers get into this habit and never get out of it. The reason of this is, they cast too straight across the stream and keep the point of the rod too high. The fly travels round too fast, and the fish make a dash at it and fail to catch it. The fly should go straight out, the cast should be made well down the river, and the point of the rod kept nearly touching the water, and the fly allowed to sink well down. The rod should be worked slowly when the fly has nearly come over the cast."

And this reminds me that ever since land-locked salmon came into the angler's category of game fish, a great deal of dissatisfaction has been expressed in all quarters, because they are so seldom tempted to rise to a fly. Selections from the best favorites have proved almost failures, and, indeed, excepting in May, when smelts are running, land-locked salmon have been wiped off the spring list of acceptable game fishes. Now, without intending to air any consummate knowledge of the habits and caprices of this most reputable denizen of some of our best inland

waters, I would suggest that the customary mode of handling the rod is incorrect. We dare say that anglers who have tried for land-locked salmon have habitually cast too long a line, seeming to think that the homely adage of the longest pole knocking the most persimmons applies to the longest line securing the most fish. Anglers who have been in the habit of fishing rapid streams and broken water would especially be liable to forget that dead water is altogether a different field for their practice, and so manipulate their rods in precisely the same manner as before; whereas just the opposite tactics are required. On the rivers the angler should not use too short a line. As the old man says: the fly should go straight out, and the point of the rod be kept nearly touching the water, the fly being allowed to sink well down—the current helping it to travel and circuit about; but on dead water a short line is requisite; the rod should be kept almost perpendicular, so that the fly can trail on the very top surface; and the cast should be made straight out in front of the face, as if trying to throw between two gate-posts. Not more than six feet of the gut-length should

touch the water at any time. Why? Because the water is so still, even when rippled by a flaw of wind, that the line laying its length along the water looks like a cable. The fish are so busy investigating the phenomenon that they don't mind the fly. Perhaps they don't see it at all. To attract his attention the point of the rod should be pumped up and down. This will move the fly a foot or more at each motion. Sometimes it is well to draw the line through the rings with the left hand while working the point of the rod, which answers the like purpose. The whole process is exceedingly delicate. Experienced anglers will appreciate the difficulty of fastening to a rise with an almost perpendicular rod, while the liability of breaking the tip in case of a strike is very great. The only way is not to strike when a salmon rises, but to let him pull the point of the rod down three or four feet, and then fix the hook in his jaw by a gentle lifting of the rod so as to bring the line taut. There is no method of fishing prettier than this when one gets used to it. It beats skittering with a spoon all hollow.

It is obvious that this mode applies to tidal waters

and still pools in rivers as well. It is much in vogue in Scottish lochs (lakes), and is just as suitable in our own. I do not see why land-locked salmon should not be as available to anglers in our Maine waters as they are in the waters of Scotland. In Sebago, Lake, at least, there seems to be good fishing from early April, or as soon as the ice goes out, until July 1, although the fish are suspicious and the angler is not always sure of his game. Sometimes half a dozen fine salmon will reward his efforts, and again he may fish for days without appreciable results. Land-locked salmon fishing has been good in April the past two years. A few salmon get in ahead of the smelts and afford good sport. After the smelts leave has usually been considered the best time to fish. Chances vary with the season.

Medium sized flies are the best, of course, and should never exceed one inch in length. Dingee Scribner's Sons, of St. John, New Brunswick, make the best land-locked salmon flies known, and we have patterns of yellow bodies with turkey wings, and claret body with mallard wings, which we have always used with success wherever tried. We notice

a Scottish pattern described as follows in the *Fishing Gazette*, which is said to be very killing. It is called the black and yellow wasp : Tag, silver tinsel and yellow floss ; tail, crest woodduck and scarlet ibis ; first half of body golden yellow pig's wool, over this oval gold tinsel pretty closely put on ; the upper half black pig's wool ; over this flat silver tinsel, a black hackle ; over the black, shoulder hackle guinea fowl wing black mottled turkey. We have heard of trolling with phantoms astern of a boat as a successful method for fishing for land-locked salmon in Scotland when flies failed. As a dernier resort in the last extremity, baiting a buoy with chopped fish will win. Set the buoy in thirty or forty feet of water, and on the third day after, try your luck. Bait the hook with the same kind of fish that you chummed with, or with live minnows, which are equally taking, and use sinker just heavy enough to carry the bait to the bottom. When a fish is felt let him have a pull at the hook, and then raise the rod gently and firmly as if you were trying to lift a dead weight. With a light fly-rod the subsequent proceedings are interesting.

Let it ever be borne in mind by the old trout fisherman who aspires to catch salmon, that the latter always come up from the bottom. You can often see them lying on the gravel, quite motionless, head up stream, and passive as a log in mid-channel. But they are quite on the alert. A sudden movement of the angler will send them up stream with a streak of light following their wake like the flash of a silvery arrow. So with the touch of the fly on the surface. The salmon detects it "as quick as a wink," and he rises up to it majestically; not with the frivolous dash of the trout, which is constantly skittering restlessly hither and yon about the pool, but with the mien of a courtier. He seizes the fly with a gulp—not daintily; and then settles down again, back to his lair, head foremost. By this process he can hardly help hooking himself. If he misses the hook the chances are much against his looking at it again. Hence, it is sufficiently plain that the angler who "strikes at the rise" will only jerk his fly away from the fish, whose movements are deliberate, and who displays no tactics at all, and no genius whatever, and no subtle strategy, until he feels himself hooked. Then his genius develops.



One word more about the outfit :

The salmon fisher needs a pair of wading trousers, or stockings, which come to the arm-pits, and a pair of low rawhide shoes with hobnails to prevent slipping, and small round holes punched in the sides near the soles, through which the water can play. Goodyear & Co., of New York, sell excellent goods, though perhaps hardly equal to the English mackintosh. I regard mosquito bars for the head and gloves for the hands as superfluous. The latter, with finger tips cut off, may be tolerated ; but the headgear never. A broad-brimmed felt hat is the best article always.

## Salmon Fishing in the Abstract.

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**T**HE art of angling for salmon is a true specialty. As acquired and practiced in this country it is of such comparatively recent date that we cannot reasonably, perhaps, look for superlative proficiency among its devotees. Nor can it be wondered at that the number of experts is so small as to comprise scarcely more than a single score, since the salmon rivers of the United States were essentially barren for forty years, while those of Canada were, most of them, so far off and difficult of access as to be practically beyond reach. Indeed, the few experienced anglers of the early part of the century actually went abroad to the rivers of Scotland for

their salmon fishing, as our sons and daughters now go to France and Germany for their high art accomplishments, it being then supposed that the Canadian salmon would not rise to a fly ; an error equally prevalent in late years regarding the salmon of the Pacific coast, as everybody is now aware of.

Going back no farther than twenty-five years, it is easy to remember that mine was almost the only salmon rod upon the noble Restigouche throughout its majestic length of sixty miles of superlative salmon-fishing ground—a very different state of things from to-day, when its broad swims below the Metapedia confluence are freckled with the canoes of amateurs receiving their expensive lessons and vexing the waters with ambidextrous flailings which would command big money on an old-time threshing-floor. For two successive years I had it entirely to myself, ranging chiefly from the Upsalquitch to old man Merrill's, and up to Chane's, at the mouth of Tom-Kedgewick. All was solitude between. Seldom did I fail to raise a salmon at the confluence of the Patapejaw (Patapedia). Opposite Merrill's was an expansive pool, to the edge of which the smooth gran-

ite ledge sloped gently, and at Chane's there was an inky depth in a rocky cliff—said to be fathomless to untold lengths of cedar-root line, and tenanted, the Indians said, by a big salmon, "more long as one canoe." Once, subsequently, I went in company with Captain Barnard, of H. M. S. "Barracouta," a practice ship then off the coast, whose guns had already battered the romance out of all the fantastic promontories from Escuminac to Tracadigash; and one delectable summer I made the acquaintance of "Johnny" Mowatt, the river guardian, whose now grown-up sons fill prominent official positions on the Canadian Fisheries Commission in British Columbia.

Occasionally, as the years passed, a stray rod would find its way to the river from some distant region, and Aleck Shewan, the pedagogue, got into the habit of coming down every season from Montreal, but there were no accommodations for kid glove tourists along those tangled banks above Dan Fraser's quiet hostelry, where he and "Black Aleck," of blessed memory, did the gustatory honors. The river for the most part ran through a wilderness, crossed only by the moose path or the Indian trail.

The local anglers of the day, of whom John W. Nicholson, Ed. Spurr, and Harry Venning, of St. John, were chief, often joined by Fred. Curtis, of Boston, used to prefer the Miramichi or the Nipissiguit as being easier of access. Molson, of Montreal, Allan Gilmour, of Ottawa, and half a dozen residents of Quebec, used to go to the Moisie, or the Godbout, and two or three other favorite tributaries of the St. Lawrence. Andrew Clerk, of New York, and his brother, the doctor, fished the Grand, and there was a rod or two on the Caspapediac, both of them Bay Chaleur streams. Quebec anglers also visited the Jacques Cartier, a river which has since passed into dissuetude, but is likely to become rehabilitated under judicious handling. These inimitable wielders of the two-handed wand were a rare lot ; but the commercial world regarded them all as cranks whose coming and going with their proclivities and pursuits, were as inexplicable and mysterious as a shaman's. My memory reverts to that halcyon period with a bound as elastic as a fawn's. It was before the day of hatching houses and leased streams. Then the interior waters were virgin. The forests were un-

scored by the swamper's axe, and no logging roads threaded the sequestered penetralia. To the birch canoe alone was there an *open sesame*. Now the wilderness is crossed in every part by railroads, and one can obtain guides at stated points, and those articles of the outfit which once had to be packed the entire distance, making these forest trips vastly more convenient, but to me less charming than when comparative solitude reigned throughout. Steam takes the romance out of the woods. I had rather get sap in my eye, lying face up under the pines, than pamper my indulgence in the snugest club house apartment extant.

It has been my very good privilege to navigate it in every part before the rivers were leased, and while the salmon fishing was free to rods; and as I consider New Brunswick superlatively beyond any other district or known region of Canada or the United States for this kind of diversion (canoeing and fishing,) I have prepared the following itinerary for those who wish to rough it, hoping it may prove valuable. I give the old time routes retraced. Sir Arthur Gordon, Governor of the Province, went over

a number of them in 1864, and wrote quite an interesting pamphlet, entitled, "Wilderness Journeys," which is still on the shelves of some libraries. If one could follow the Governor's earnest advice, he would take not only mosquito bars but the finest woven illusion to keep out the punkies, midges, sand-flies, and "bite-'em-no-see-'ems," all of which are the same bird under different synonyms. I will add that there has just been published a very capital map which will prove quite indispensable in making the tour of the watercourses. It has been prepared from the memoranda of Mr. J. Whitman Bailey, and is printed by Dannell & Upham, 283 Washington street, Boston. Rapids, portages, camping grounds, and fishing places are marked upon it. It will certainly prove a most acceptable aid to many who will visit that delectable country in the future.

#### ITINERARY OF CANOE ROUTES.

1. From the St. John River and the Grand via Waagan and Waagansis to the river Restigouche.
2. River Restigouche and Tom Kedgewick to Rimouski and the St. Lawrence.
3. River Nepissiguit via portage to the Northwest Miramichi.

4. From Bay Chaleur via Restigouche and its affluent Upsalquitch to the Nepissiguit.

5. St. John River via the Tobique and Nictor to the river Nepissiguit.

6. From St. John River via the Madawaska, Lake Temiscouta and Trois Pistoles to the St. Lawrence.

7. Via the Southwest Miramichi and portage to the Nashwaak and St. John rivers.

8. From the St. John via the Tobique River and Right Hand Brook to Long Lake, and portage to the Little Southwest Miramichi and the main river.

9. From St. Stephen on Bay of Fundy via St. Croix River, Cheputnacook Lake and Monument Brook, to portage, and via Meduxnakik to Woodstock on the St. John.

10. From city of St. John on river St. John to Grand Lake, Salmon River, and portage to Richibucto River and Gulf of St. Lawrence.

11. From St. John up the Kennebecasis bay and river, with portage to the Pedicodiac and Chignecto Bay.

12. From St. John River via the Washdemoak and New Canaan River to portage and the Cocagne River to Northumberland Strait on the Gulf of St. Lawrence.

The nine first named are the most interesting by long odds. Of course the tourist must know that



he is not at liberty to catch salmon anywhere except by favor, but trout fishing can be indulged in *ad libitum*, and no doubt the privilege of trying for a salmon or two would not be denied on occasion by the lessee or river guardian. I don't think salmon can now be found on the three last named routes, but there are other nice fish, and the scenery is charming, being for the most part pastoral, and long since civilized out of its wilderness characteristics.

The northern part of Maine has somewhat similar advantages for protracted and continuous canoe routes. There being a watershed about midway of the Aroostook which throws the streams northward to the upper St. John and southward into the larger rivers which run to tidewater on the Atlantic, one can choose among several. The tributaries of the Penobscot spread out like fingers to touch the feeders of the opposite slope. From the headwaters of the Mattawamkeag you can portage to the Aroostook River and the St. John; from headwaters of the west branch of the Penobscot to the Walloostook; from the Seboois into the Aroostook, from Wasataquoik into the Allegash, from the little Machias

Brook, which is a feeder of the Aroostook, into the well-known Fish River chain of lakes emptying into the upper St. John. Then there is the old-time circumbendibus route up the Kennebec, through Moosehead Lake to the upper waters of the west branch of the Penobscot, and down that stream south to the main river.

Oh! a wonderful land is the interior of New Brunswick, rising like an emerald boss out of the encircling sea, with its central entrance culminating in bald mountain knobs, studded with sparkling lakes and crowned by enormous pines whose measured height has reached 138 feet; lakes which form the catch-basins or reservoirs of the many delectable salmon streams which radiate therefrom to every point of the compass and are easily traversed from source to source by the short portages indicated above, whereby, having ascended one difficult stream, you may reach and descend another in an opposite direction. Many are the mid-summer weeks which I have passed alone on these traverses, or carries, and these changeful rivers, in company of my faithful Indians, with no other shelter from the dew or

drenching showers than the birch canoe turned over on the river bank and propped by the paddles against the gunwale. Sometimes it was Larry and Gabe, and sometimes Peter and John—prototypes of the ancient fishermen of Galilee—and I can almost imagine as I write that I hear the measured click of their iron-shod setting-poles as they steadily prod their arduous way up the rapids and over the shoals. Envious am I of the “noonings” we had beside the mouths of the ice cold brooks which flowed into the main river, where a mug of cooled Alsop never tasted so good, or a homely lunch so appetizing.

It is of the varying moods and tenses of these changeful rivers that I love to think and speak, because it is their intensely specific characteristics which make salmon fishing superlative, and of all the piscatory accomplishments the most difficult to learn—the most difficult to diagnose and master. I have great respect for the expert who can handle and boat a mighty tarpum in open sea with rod and reel, or beach and gaff a striped bass from the surf-worn rocks ; nevertheless, no fish that swims is the peer of the salmon, and no angling experience or

pastime carries with it the exciting episodes, aspects and vicissitudes of salmon fishing. These coastwise outings are barren of strange happenings and exigencies. They lack the captivating mystery of the woods, the hourly recurrence of ever-changing views, and, metaphysically speaking, the *sentiment* of the occasion. The tarpum is a John L. Sullivan among fishes, a slugger and a smasher of lines and hooks, filled with ponderosity, brute force and violence; he is a runaway horse with the bits in his mouth; a tearing *toros* of the bull-ring. As for striped bass fishing, it is a glowing theme of the sounding sea and surf—a symphony of “what the wild waves are saying.” The physical enjoyment is exquisite, and there is a mental exhilaration besides; but compared with salmon fishing it is monotonous—monotonous, but not tame. There is nothing vapid about the wind-swept shores and salt breezes of Pasque Island and Cuttyhunk. But, bless me! there are more sides to salmon fishing than there are facets to a cut gem, or patterns to a kaleidoscope.

As I have said, the play of the salmon depends upon the temper of the river. Wherever there is

foam and sparkle there is oxygen and energy. In dead water fish are sluggish. Rivers are as different as horses. Some are wild, impetuous and untamable ; others restive as an Arabian courser. Some plod like a plow-horse, and others buck like a broncho or kick like a mule. Some dash to the sea in a straight-away course with scarcely a break, and others wind with a sinuous and solemn monotony like blind cobs in a treadmill. Some are like circus horses, cavorting in many an eddy and flying leap, and others tumble and plunge like colts at the hurdles. Some have breadth and depth and sweep, while others are pent-up, curbed and narrow ; churned into constant lather and foam. In some rivers the pools are frequent and spacious, open to the sunlight, and glinting with bright pebbly bottoms ; in others they are short, angry and broken, filled with debris and boulders. Some are overhung by protruding branches and thickets, while others flow under the gloomy shadows of jutting cliffs. There is no end to the composition and phases of rivers, and consequently no end to the artifices and methods of the angler.

It is this complexity which makes the study and practice of salmon angling a high art. In human nature you cannot interpret one face, or type, or character, by another ; no more can the salmon angler predicate the disposition of one river by the idiosyncracies of another. The ambitious aspirant can become an adept only by the widest practical experience. Much less can he instruct others by the card. It is impossible for book or tutor to prescribe and apply stereotyped tactics in handling a salmon or wooing a stream. Just here is where those martinets who devise manuals signally fail to satisfy the neophyte. If all streams were alike, with plenty of breadth and depth and scope, it would be different. Given plenty of sea-room, with a wide-awake boatman to follow, what tyro would fail to secure a salmon that was well fastened? Its behavior is always pretty nearly the same sort of a circus, much as the lamented Francis Francis describes it in his inimitable "Sporting Sketches," published in London in 1878 : "A twenty or thirty yards' run when first hooked ; then round, head to stream, boring against it hither and thither ; a swim around more like a

barbel than a salmon ; then another short run ; then round head to stream again ; till, getting tired of the rather sluggish business, you put on a long, strong pull, and your man, knee-deep in water, just manages to clip the fish as he wallops past, good for another ten minutes' boring, perhaps"—and meanwhile, we may infer, showing great breadth of tail, but no mettle. Fishes like these do not seem to wake up to the crisis until the final prick of the gaff strikes into their very nerve-cores. Of course the experienced angler knows just what to do at each step, when to give and take, and when to check, follow, or persuade.

To the self-constituted preceptor such opportunity is golden. Under the circumstances he is fully competent to coach. It is like directing a pupil at the riding school to pull this rein to go to the right and that to go to the left. If the preceptor be a "contemplative angler," he will have abundant time to formulate tactics never dreamed of by practitioners of the old school, and thus win plaudits for his superior genius from admiring parvenus who are inclined to fatuitously follow the flash of a brilliant

lead. I do not know of so likely a place for kindergarten practice as the lower Restigouche from its confluence with the Metapedia, past the club house and railroad bridge to tidewater. It affords unlimited flailing room, and there are no obtruding trees to pick up flying gut-lengths, no rough water, no snags, and no ugly pitches ; yet of the scores of fishermen who congregate there daily during the fishing season, calling themselves anglers, how few are successful ! How many fish are hooked and lost !

On what the Scotchmen call "a wicked river," the work is more exacting. There are occasions and situations where the capture of a salmon is truly a test of strategic ability, and not of mere mechanical manipulation, and I may much doubt if any preceptor, by book or example, can impart the genius necessary to bring a fish to gaff. The Godbout, and the like Laurentian rivers, whose whole length is a foaming torrent, would make a smooth-water angler turn pale to contemplate as a place to fish. I imagine that the Scotch river Erne, of which Mr. Francis writes so glowingly, is of much the same character—"where you must wade, and often deeply, in places



where a false step or a stumble might cost you your life, where every cast is widely different in character, where on some casts hidden dangers of every kind abound, and where the most ordinary stream is deep, strong, rapid and rocky ; where several of the pools lie just above the wildest and most dangerous rapids, down which your fish is just as likely to plunge as not, and you never can count on killing your fish until you have him on the bank."

Such rivers as these try the angler's mettle as well as his science. Tactics of the drill-master fail here. Instinct becomes a better prompter than a "rule of three." Expedients are suggested by emergencies, both to the salmon and his captor, in marvellously rapid succession. The hooked fish, after his first momentary fright on getting fast, collects his senses, and, like the chased deer and fox, devises stratagems on the jump. You have no time to dally. Playing your fish becomes a desperate struggle, like a Spartan tilt. The contest taxes all the energies of brain and muscle. You must kill your fish on short line with rod bent double, or have him break away. You must drop your tip when he vaults clear of the

water, and "slue" him off from dangerous places when he gathers headway. You summon the forces of the current to your aid in accelerating a favorable momentum, and you counteract them when the influence is adverse. If the salmon once gets out of the pool into the race-way of the impetuous lower stream, there is nothing to do but follow him down the bank and over the slippery rocks, into the water and out of the water, shoe-deep or waist-deep, lifting your line over obstructing boulders in the channel, watching out for projecting ledges or branches, keeping your weather eye always on the fish and looking ahead for the best footing, holding your rod up and never permitting slack even though you stumble full length over the rocks; not minding thumps or bruises, but keeping your wind and saving your fish, no matter if you break your neck. And you keep this up one hour perhaps, giving as little line as possible, until finally you are so limp and blown that you couldn't puff out a candle with your breath, and in bodily condition much like the salmon, your opponent, which by this time has haply turned up his silvery side at the foot of the rapid,

convenient for the clip of your exultant and admiring gaffer. Pray tell me, good indulgent reader, how the self-sufficient author of the Vade Mecum is to instruct you to do all this? And this masterly rough work is not accomplished single-handed, by a good deal. Your attendant is an almost indispensable factor. He must be mentor as well as assistant. In fact, he ought to be as intelligent and experienced as his master. He is not there merely to basket the fish and tote them. He should have sense when to advise his companion, and when to refrain, and above all things he should be cool and self-possessed. He is able to perceive from lateral points of observation what the man with the rod cannot see, and thus often to anticipate the intentions of the fish and head them off. He is to clear away bushes which interpose, and rocks which impede the passage along the bank; he is to take the rod betimes into his own hands while the angler gains a better foothold or more advantageous position, to steady him by the shoulders in difficult places, to help him by the hand and *steer* him, as a policeman guides a lady or a cripple through the in-

tricacies of a thronging thoroughfare; and worse than an idiot would be the bumptious dolt who would spurn his timely counsel.

And this inclines me here to say, by way of peroration, which may as well come now as later, that a wise man, no matter how well informed and capable he may be, will lend an attentive ear to the views of others, however humble they may be, if peradventure he may add some iota to his attainments to make them perfect; but it is a bad sign when a business man or angler feels that he has nothing more to learn. The smart man, whose surname is "Aleck," despises the traditions of the elders. He discards all precedents, and sets up innovations and devices which may command the evanescent approval and endorsement of untutored neophytes who confide in him; nevertheless, he smashes more rods than they, and catches less fish. The like of him are not teachers, but iconoclasts, and poor ones at that, for they are unable to distinguish between the golden idols and those which are of clay. The mischief which they do among the craft is great. They are like sturgeons in a purse-net, with much threshing about

and very little profit to their impounded fellow-captives or the fisherman.

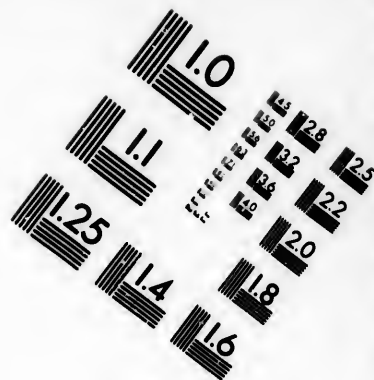
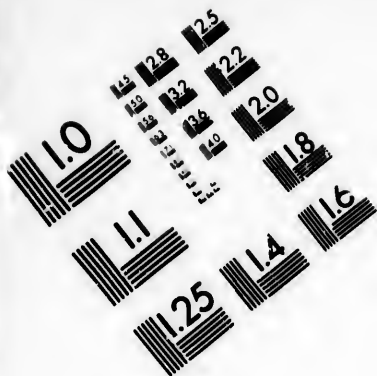
Singular as it may seem, the best trout fishermen make but a poor fist at salmon fishing at their first venture. They have much to *unlearn*. They need coaching; for they invariably waste precious time in prolonged and indiscriminate threshing of unlikely places, and skitter their flies over the broad surface of the pools with artistic play but fruitless reward. Now, a trout seldom takes a submerged or still fly. He seems to perceive the deception and leaves it. Salmon, on the contrary, almost always take the fly a little submerged. As a general rule the proficient angler casts straight for the tail of a pool without making any graduated approximate essays, for the rising fish seldom lie anywhere else, and casting at random is sheer waste of time. The distance to be cast should be calculated nicely, and no longer line be thrown than is necessary. The cast being made the angler at once imparts to his fly some such motions as a shrimp makes in the water (which it is supposed to resemble), though not so jerky, moving the top of the rod laterally three or four feet every

two seconds or so. As a rule salmon roll up sluggishly to the surface with a bulge, and take the fly so quietly that a novice will fail to notice it, but the ever watchful eye of the expert detects the slightest "boil." In trout fishing we are accustomed to strike at a rise. In salmon fishing he who strikes will most certainly lose his fish. Time must be given. We do not exactly let the salmon hook himself, but we instinctively tauten the line at the proper instant, and presto! the fish is fast. The movement is as difficult to describe as the traditional "wrist knack" which fastens a trout. If a salmon rises once to a fly and misses, immediately cast elsewhere, and let a full minute elapse before trying him a second time. The instant you find your fish fast, raise your rod to a perpendicular and *keep it up*, unless the salmon leaps from the water, in which event you dip the tip deferentially at once. The politeness will cost nothing and will save your tackle. Subsequent manœuvres will depend on the movements of the fish. Sometimes it will take him several seconds to comprehend that there is trouble—then he scoots! Fish when first hooked usually make for the upper stream.

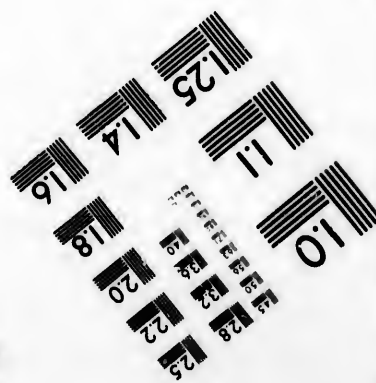
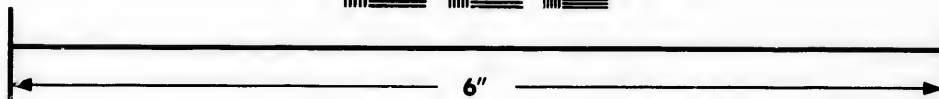
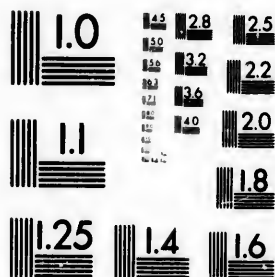
Their instinct is upward. A fresh-run fish goes down stream only when he is bewildered, or when he cannot help it. I do not think a headlong pitch down a rapid is ever a part of his recognized tactics. It takes his breath away. When a fish gets into a rapid he becomes passive at once and is swept down the current like a dead fish. He makes no effort to bore his way up, but tugs at the line in a dogged endeavor to get loose somehow, and is swept down until he fetches up in an eddy, or perhaps in still water behind a boulder. As a rule, the methods of a salmon on a hook comprise a series of short runs alternating with circular sweeps, as Francis Francis has mentioned. Indeed, what can he do otherwise, with a vertical lifting power at his nose which never relaxes except when he temporarily ceases his own exertions? Then of course the angler at once reels him in, passive, toward the ever ready gaff, and there is nothing for him to do but to make another desperate break for liberty, and pull away with all his might. When he does this he makes the reel sing again, which is the music the angler likes so much to hear. It must be a prodigious exertion for him

to dive and hold on to the bottom for so long a time as he often does, say twenty minutes or more. People call this manoeuvre "sulking." Save the mark! Only spoiled children sulk. Rather call it brave determination and sublime effort. I am quite prepared to believe that the salmon knows instinctively that if he yields the game is up, and that if he continues to run he will only exhaust himself. In such a dilemma where is the alternative? Simply the leap! This he cogitates out for himself down there on the bottom. It is desperate, but the only resource. And now he girds his loins and fixes his broad tail obliquely. Ha! did you notice that tremulous movement? Did you feel him shake his head? Ware now! he is getting ready for a spurt. Experience has taught the proficient angler what to expect; and surely enough, there he goes clean through the surface and straight up out into the open air. What a glorious leap! Now is the time to drop your tip. Let your pliant rod make its most obsequious bow. Such masterly strategy deserves appreciative recognition. Well done, Piscator! You have saved your tackle and your fish. Look out for





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a second leap. Had the line been kept taut he would have thrown his whole weight upon it and snapped it in a twinkling. Now he is quiet again after that futile effort. He seems submissive—so let us shove the but at him and try and tow him to the land. Reel in firmly and watch carefully, for he may attempt another jump. Lead him up to the beach toward the gaffer, for there is a better chance to land him there.

Now, mark, good pupil! a critical juncture is at hand. Although apparently a certain capture, do not be too sure. Much depends upon your steadiness and the dexterity and judgment of the gaffer, and much upon the temper of the fish, which is not always the dead cock he seems. Many a goodly salmon has been lost after a hard-fought battle when he seemed fairly won. I have sometimes stood breathless, watching a comrade heaving steadily on his fish and gradually leading him to the shore, with his rod almost bent double and the full length of the beautiful white belly exposed to view, when the clumsy gaffer floundered in knee-deep, and lunging wildly, barely managed to scratch the struggling fish

as he walloped past him, once more in full career for the centre pool, ready to renew the battle and prolong it for another twenty minutes or an hour. A good gaffer keeps quiet and out of the water and out of sight as much as possible, makes no abrupt starts, watches every movement of the fish, and never makes a false coup. Clip! splash! there, he has him securely on the iron! Let your line run out now *ad libitum* and give the strained rod a rest. You see, the fly has actually dropped out of his mouth, so that only skillful handling saved him: a good twenty-pounder and a trophy to be proud of. Whack him sharply on the head with a billet and give him his quietus; then you may contemplate him at your leisure.

I do not take kindly to gaffs with the point recurved or turned outward. The point should be parallel with the shank, that is to say, the line of draft at the point should be parallel with the line of draft on the shank and gaff handle. Its efficacy can easily be tested by drawing the point of the hook against the palm of the hand. The hook need not exceed two and a half inches in the width of the

bend between shank and point. A four-foot handle is the correct length. Jointed handles are convenient to carry, but they are objectionable on account of a possibility of their sliding or telescoping at critical moments. When a fish is gaffed coolness and dexterity are indispensable. Never be in a hurry. Put the gaff into the water as quietly as possible and unobserved of the fish, to the depth of fourteen inches or so, and make the clip upward and inward, sharply but without jerking, endeavoring to fix the point just abaft the shoulders, which is the center of gravity. If hooked elsewhere the fish gets a big leverage with head or tail and will make a ghastly rent in his body, if indeed he don't flop off the hook altogether. Never strike a fish in the belly. There is nothing more unsightly than a great gaping wound, especially if the entrails protrude. Some people prefer to gaff over the back of a fish, with the point of the gaff turned down, claiming that the refraction of the handle in the water is apt to make the aim uncertain when the clip is made from underneath with the point up, but we think the weight of argument is in favor of the other method. The position is

awkward, to say the least. In gaffing a fish "position is everything," the same as in catching a baseball or handling a billiard cue. Indeed, a catcher on the diamond field takes much the same position as the experienced gaffer does, only his eyes are turned upward and forward instead of downward and obliquely. The body must be as flexible as an acrobat's. It must have perfect poise. The footing must be selected and assured in advance. A slip on the river bottom may cost an hour's hard work with the rod. The gaffer ought to choose the landing place in advance if the fish is to be gaffed from the shore, as is usually done, and wade well out, say to the depth of his knees, so that by any chance the fish may not flounder loose by striking the bottom in too shallow water. Then the man with the rod must lead his captive, as best he may, up to the gaffer, so that he can strike it. However, the fact is, no fixed tactics can be prescribed. A gaffer has to use his judgement, and use it promptly, too. If he gets "razzle-dazzled," as the phrase is, he will most likely miss his fish altogether, and quite likely miss his foot, too, and pitch headlong into the water—

which would serve him right. There are as few men who know how to use a gaff as there are men who know how to throw a lasso. As a rule the cautious angler will not attempt to gaff his own fish. Indeed, in many situations the feat would be impossible. The gaffer ought to be as expert as his comrade or master, and all his movements and methods should be in consonance with his manœuvres and the play of the fish. This requirement is more exacting on a wild river than anywhere else.

## Luxury of Salmon Fishing.

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**I** HAVE fished a good many salmon rivers since thirty years ago, including many of Nova Scotia and most of those on the Baie de Chaleurs. I have also wet some flies in the Labrador streams along the south shore, and also on the east shore as far up as the Narrows at Rigolet, at the head of the Great Esquimaux Bay in latitude 55°. But the best sport of all I ever had was on the Godbott in 1879, with that prince of anglers, Allan Gilmour, Esq., of Ottawa, Canada. He owns the river and 5,000 acres of adjacent lands, and for thirty years at least, up to 1880, he annually fished his unequalled pre-



serves on the Lower St. Lawrence, going and coming each year in his private steam yacht, whose luxurious appointments royalty might envy, and accompanied always by invited guests of approved status as anglers and high social position, sometimes by noblemen and bishops, and once by Earl Dufferin, the Governor General of the Dominion, whom he has entertained for weeks together with luxuries brought to his distant fishing camp, 300 miles below Quebec, on his steam tender. The lavish expenditure laid out upon his extensive domain in bridging ravines, protecting dangerous cliffs, providing easy approaches to the salmon pools, and placing batteaux and boats at every eligible point ; in erecting buildings for all conceivable requirements, providing refreshment places along the tumbling stream, and leading the fountains gently from their ice-cold cliffs to the wayside ; all these, and more, have excited the admiration and astonishment of men who have seen him. His tackle is of the most approved and expensive kind, and his skill as a salmon angler perhaps unsurpassed on either continent. A considerable hamlet of *habitans* and half-breed Indians has

been dependent upon his patronage for a livelihood until their babies have grown to men and women. And yet, notwithstanding that possession of wealth, position, associations and attainments which conspire to make a man conspicuous, I dare say the name of Allan Gilmour, of Ottawa, Canada, is little known to the fraternity of gentlemen fishermen at large. There are perhaps few others in the United States and Canada who are his peers, and yet their names are seldom seen in print. Unobtrusively, on each recurring summer, they reap the fulsome reward of their skill and life-long experience, and are content ; while others acquire an almost world-wide reputation whose maiden casts are scarcely dry. Alas! how easily do ephemera win fame and glowing tributes while adepts receive no honors and are overlooked!

I am moved to these reflections by accidentally discovering among some old-time memoranda a record of the Godbout River scores for several years—from 1859 to 1879, inclusive. Full data are given only for ten years—1865-1875. They are appalling enough to paralyze the most pretentious amateurs.

During the period named the following persons were fishing.

Capt. Noble, England.  
 Alex. Cross, Montreal.  
 Allan Gilmour, Ottawa.  
 James Law, Montreal.  
 David Law, Montreal.  
 Mr. Dyke, Scotland.  
 A. Gilmour, Jr., Quebec.  
 Rev. Dr. Adamson, Ottawa.  
 W. M. Ramsay, Montreal.  
 John Gilmour, Glasgow.  
 John Gilmour, Jr., Quebec.  
 Dr. Campbell, Montreal.  
 A. Urquhart, Montreal.

A. T. Patterson, Montreal.  
 T. B. Meigs, Jersey City, N. J.  
 Captain Dick, Toronto.  
 R. Muir, Montreal.  
 G. Denholm, Montreal.  
 Earl and Countess Dufferin and party.  
 Rev. D. M. Gordon, Scotland.  
 R. W. Shepherd, Montreal.  
 Napoleon A. Comeau (river guardian).  
 Mark Molson and son, Montreal.  
 P. Macnaughton, Quebec.  
 Charles Hallock, New York.

Of these Mr. Allan Gilmour made the best score, with one exception, hereafter mentioned; John Gilmour, of Scotland, and James Law, of Montreal, taking second and third honors respectively. The other scores were by no means insignificant. Among some of the more frequent visitors to the river, there used to be an emulation of the most enthusiastic character; but many who were guests of their generous host were quite content with a few fish, the extraordinary beauty and novelty of the landscape demanding a large share of attention. One might occupy his time with matters more interesting than

enlarging his score of fish. The following is Allan Gilmour's record for the seasons named, to wit:

YEAR.	DAYS.	FISH.	LBS.	BEST DAYS.
1865.....	22	165	1,567	30—46 fish.
1866.....	24	195	1,965	13—24 "
1867.....	27	165	1,788	21—26 "
1868.....	17	113	1,297	13—23 "
1869.....	28	139	1,467	14—16 "
1870.....	17	91	986	13—16 "
1871.....	21	102	1,165	10—10 "
1872.....	15	68	743	10—12 "
1873.....	10	50	560	6—25 "
1874.....	6	54	625	12—13 "
Grand total.....		1,142	12,163	

Is it possible that the amateur salmon angler can estimate or conceive the amount of *endurance*, to say nothing of skill, required to kill forty-six salmon, averaging ten or eleven pounds,\* in a single day; or even the smaller number of twenty five or thirty? Given twelve hours of continuous fishing, which would tire a horse, if a horse could fish, a salmon must be brought to gaff every fifteen minutes! No time for "playing" under these circumstances. An angler would make a poor showing on the record if

\* Occasionally a Godbout salmon will scale twenty-eight to thirty pounds, but the average weight is light.



he let his fish run for one hour or more, which the book teaches is the quintessence of fine work. But the king score of all the rest has yet to be recorded, namely, that of Napoleon A. Comeau, the river guardian, who happened to strike a late and lively run of fish one season after the visitors had left. Mr. Gilmour declares it is the best salmon fishing ever done in the world! The score is therefore worth printing in full, and you will find it herewith. The year was 1874:

DATE.	FISH.	LBS.	DATE.	FISH.	LBS.
July 8.....	7	80	July 20.....	27	273
" 9.....	57	634	" 21.....	13	124
" 10.....	25	282	" 22.....	20	198
" 11.....	34	361	" 23.....	6	63
" 13.....	40	438	" 24.....	3	30
" 14.....	25	253	" 27.....	3	33
" 15.....	16	172	" 28.....	2	19
" 16.....	37	394	" 31.....	1	28
" 17.....	16	186			
" 18.....	28	286			
			Total.....	360	3,873

And five grilse.

Grilse, or "jumpers," are not as abundant in the Godbout and St. Lawrence rivers as they are in those of Nova Scotia, though they afford the best sort of sport and are by no means despised.

The following table shows the total scores made on the river for the years named:

YEAR.	DAYS.	NO. OF RODS.	FISH.	LBS.
1865.....	22	4	478	4,665
1866.....	30	4	493	5,017
1867.....	35	4	427	6,660
1868.....	17	3	273	3,066
1869.....	28	5	515	5,493
1870.....	26	5	390	4,348
1871.....	27	5	509	5,721
1872.....	17	4	217	2,349
1873.....	21	7*	132	1,495
1874.....	32	5	633	6,931
1875.....	11	6	186	2,126
Grand total.....	266		4,262	47,880

Here we have the results of an average of five rods per day for 266 days' fishing—nearly twenty-five tons of salmon! Besides the salmon there were 62 grilse and 250 sea trout caught, which took the fly when they were not wanted, being regarded as a nuisance in the river.

The whole length of the Godbout is much broken by tumultuous water, and the pools are short, so that heroic methods have to be employed in angling. There are in all fifteen pools, beginning with the

\* Including Earl and Countess Dufferin and party.

“Upper Pool.” Then follow in their order, down river, the Eagle, the Kennup, the Indian, the Doctor’s Stone, the Haworth, the Shea, the Chartres, Glassy, Belle, and Kate, all above highest tidewater—and what glorious pools they are! wild with rocks; cool with ever glancing spray; spangled with vivid evergreens; sombre in shadow and sparkling in sunshine; entrancing in solitude; rippled only by the winds and the swirl of the leaping salmon! Just below the double rapid, which is formed by the outflow of the Belle and the Kate, where a pretty wooded islet divides the twin pools, we reach the Camp Pool, an excellent cast, even at a medium stage of water. Then follows the long reach which flows past the cottages for a stretch of three hundred yards or so, with the Kaley Stone at its foot; then Kelt Point, the Heights, the Bear and the Cross pools, successively. All of these latter are more or less affected by the tides. If the run of fish is early and the river is full, they afford good sport, and the Bear and the Kaley Stone are favorites. At high tide, when the water becomes salt, or at low water, they are useless, and the scope of the river for fish-

ing is contracted in proportion. Often the river falls before the first run of fish occurs. All of these lower pools are fished from Castle-Connell punts, of the patterns used in Scotland, the angler standing in the bow and the gaffer keeping the craft in favorable position with his setting pole and drag. When a fish is hung, it is customary to push for the shore at once, and handle and gaff him from the land.

Glassy Pool is one of the most quiet and beautiful of all the pools. It is perhaps sixty yards in diameter. At its very head is a charming little islet, capped with evergreens, which divides a most turbulent and angry rapid which comes surging into the pool, and must be quite a formidable obstacle to the ascent of the salmon. For this reason the salmon are sometimes found here in large numbers. The outflow of the pool is more peaceful, but still a respectable dash of broken water, down which it is exhilarating to run a boat. One side of the pool is flanked by a wooded islet (twin to the one just above), and the other by a precipitous ledge of rock fringed with evergreens, and an abrupt hill rising above the ledge, and clothed with a primitive forest. At the foot of



the island an immense mass of huge boulders fills one-half of the channel. Looking up the river from below this pool, the vista is one of the wildest and most charming imaginable—the vivid green of the mantling forest inclosing the sweeping rapids of churning foam, and the blue sky and fleecy clouds overarching from hill to hill. The two islets gem the middle foreground, while the boulders and the ragged ledges add most striking features to the picture. Nothing can be more characteristic of this northern latitude than these lofty, fir-clad, towering hills, which are almost mountains, and the white seething foam of the ice-cold river leaping down its ragged channel-way.

Most of the pools above the Glassy are of quite a different character, being bits of eddying water, where, if a fish is hooked, it is a rattling combat from start to finish. If the angler yields an inch, the captive gets into the rapid and is captive no more.

We take things easy at camp. There is no stealing a march on your comrades by sneaking away to the river at earliest dawn. Indeed, it is against rules to fish before breakfast. Breakfast comes on at 8

o'clock. As a rule, an early start is no object, for each daily run of fish takes place with the tide, and the tides only serve on occasion. One after another each boat gets away, and the camp is left alone in charge of the cook, who remains sole representative of the red flag which flutters and floats from the tall staff on the tower. One boat drifts slowly down stream with the current, a drag at its stern checking its progress. It has been assigned to the lower pools. A second poles up along shore to the foot of the first left-hand rapid, which is the outflow of the Belle, and the angler disembarks and walks up along the pebbly shore of an island to his proper casting ground. On the opposite side of the island is the companion pool of the Belle, called the Kate. These pools are always assigned to one rod when there are four rods to the river; and beautiful and well-named they are. Sprightly, sparkling, and vocal with the dash and roar which please the angler. The camp is always visible from these pools, only a quarter of a mile distant. The two other boats cross the river and push for the foot of the Kate, where they are beached, the occupants taking the path through the

woods to the centre and upper pools. This path is no blind trail tangled with roots, obstructed with stones, and soft with miry spots, but a hard and well-beaten track, whose inequalities of surface have carefully been removed. Chasms and swampy places have been bridged with hewn logs. Hand rails have been stretched along the precipitous ledges which infringe on the rapids; huge rocks which obstructed the passage have been blown away; sides of the hill have been dug down; steps have been cut in the granite; hollows have been filled up with earth. Here and there along the route sparkling springs, cooled by the ice of the previous winter which had not yet melted altogether away from the rifts and crevices, gush from the moss-padded clefts and empty into convenient artificial basins, at which tin cups have been placed for grateful service to the thirsty. As the banks are steep, the path for the most part is many feet above the river bed and within sight of the stream. Sometimes it buries itself in the thick spruces and balsams, and betimes winds down to the very edge of the water. The view is constantly changing as one passes along, not

only from placid pool to impetuous rapid, and from impinging crag to sloping shore, but each rapid has its constantly varying moods and features, and each separate landscape some striking point of view. In a dark, retreating cleft of a great cliff on the opposite side is a large mass of clinging ice, which it will still take weeks of the July sun to melt; and oh! how refreshing it is, when we are hot and moist with our long tramp, to turn and gaze thereon. With a yearning look, we hasten on to the next way-side basin to refresh our parched palates.

Another princely salmon preserve of entirely different characteristics is that of Dr. J. H. Baxter, U. S. A., which is located on the Restigouche River, in New Brunswick, a half mile or so below the waters of the Restigouche Club.

Let me compare the two :

Mr. Gilmour's establishment is an oasis of luxury in a desert of wilderness, far beyond the reach of ordinary intercourse of men, and is isolated by climatic rigors for eight months of the year. Its chief charm consists in its unkempt and savage grandeur. Here are rocks projecting, precipices overhanging,

fir trees clinging to perpendicular heights, huge boulders piled in mid-stream, walls contracting into gorges and ravines; while through the rugged channel the river chafes and roars, tossing its crested waves in a turbulence of foam, leaping cascades and shivering itself in showers of spray. And in the midst of it all is that supervening sense of triumph and comfortable enjoyment which the master feels who has been able to surmount all the savage inhospitability of the place, and make himself snug and independent by the abundant provision which he has gathered for creature wants and mental diversion. From the crown of the hill which overlooks the camp is a sweeping view of the River St. Lawrence, which is forty-five miles wide at this point, spread out like an ocean to the limit of vision; while the river Godbout expands at our feet into a broad estuary of circular form, inclosed by high bluffs covered with pine and divided in the centre by two large picturesque islands whose foliage grows vigorously under the shelter of the hills. A flat, narrow island two miles long extends across the full width of the estuary, protecting it securely, and

forming a breakwater which affords effectual shelter from the booming seas which break on the promontories when storms drive in from the eastward. On this strip of land, not altogether destitute of foliage in summer, is the home of Napoleon Comeau, the river guardian, and a small community of *habitans* and Montaignais half-breeds, who live in a comfortable way in small cottages somewhat neat, catching fish and birds and eggs in summer, trapping pelts in winter, and clubbing seals in spring, besides fortifying their subsistence by the additional largess of their river patron, Mr. Gilmour. And the camp itself, two miles up the river, where so many distinguished people have been domiciled, is not the canvas makeshift or riven hemlock *cabane* of the chance angler on the coast. It is a goodly mansion with a tempting verandah, and a tower three stories high surmounted by a staff from which red bunting flies when the quarters are occupied. Then there is the ice-house and kitchen, the smoke house, boat house, woodhouse, men's quarters, and other adjoining buildings, so that there is quite a hamlet. The tower, by the way, is no emulous rival of Babel, but

was built in large part to circumvent the mosquitoes and flies which are so tormenting in July, for when the pests become intolerable it is quite possible to climb beyond their reach, and sitting in the brisk breeze which comes in with the tide, watch with complacent mood the vain attempts of the little brutes to beat up to windward and fasten to the flesh under the lee of one's hat-brim, or the lobe of an expanding ear.

Very different is the "bungalow" of the æsthetic Dr. Baxter on the broad water of the Restigouche. A mansion which cost \$11,000 to build, with spacious verandahs and all modern appointments, overlooks the pool or swim which rounds out his private stretch of water; and there he can lie in the still summer nights and hear the splash of the sportive salmon which he knows will be his trophies to-morrow, and smile grimly over the fate which awaits them. Right under the ridge on which the house stands, and between it and the river, is the railroad; and when the mood to leave comes on, the Doctor has only to get aboard a Pullman coach at his door and ride continuously to his home in Washington.

He has no expense of chartering a steamer to carry his plunder some hundreds of miles to camp, for hard by is the thrifty village of Campbellton, which can amply provide for all his creature comforts. There is at his rancherie abundant and suitable accommodation for lady guests, and no end of civilization within easy reach, when desired ; and if *ennui* comes, or hard luck with the rod overtakes him, he can readily seek consolation at the club house, up stream, where congenial company may be found.

The Godbout is the home of the bachelor! the Restigouche of the Benedict, happy in connubial possession, who never leaves his wife behind.

On this same river, in years ago, was visible another phase of what may be termed the "luxury of salmon fishing," in the shape of a huge scow belonging to the Hon. C. J. Brydges, formerly of the Grand Trunk Railway, but now connected with the Hudson Bay Company's office at Winnipeg, Manitoba. The cognomen of this wondrous craft was "Great Cæsar's Ghost," and it used to flit merrily up and down the river, drawn by horses, which plashed and floundered through the long reaches, or alternately be-



took themselves to the river-bed or bank, as the straits of the route required. It was fitted up sumptuously, with amplitude of cabin, kitchen, and promenade deck, and many a royal load has it taken up to the salmon pools—the Princess Louise and the Marquis of Lorne, Earl Dufferin, Lord Stanley, and many other notables of Great Britain and the New Dominion, not to mention newly crested knights and honorables of less account.

Col. Wm. H. Rhodes, of Quebec, has had a snug cottage at Tadousac, near the mouth of the Saguenay, for thirty years, and so had Robert Hare Powell, of Philadelphia, for a long time. Willis Russell, Esq., of the Hotel St. Louis, at Quebec, built six fishing cottages on the Marguerite tributary of the Saguenay some fifteen years ago, which are annually occupied and rented, and there one can perhaps get more fish and more sport, with more comfort, than on any other leased water in Canada. One of these cottages has been occupied by Walter M. Brockett, the Boston artist, superlative in fish painting, ever since it was built. Lately, at the mouth of Lake St. John, Messrs. A. B. Scott, of Roberval, and Wm. A. Grif-

fith, of Quebec, have erected private cottages for summer salmon fishing, and Harry Poole occupies an old Hudson Bay post on Alma Island near at hand, where he dispenses hospitality and fishing privileges to all anglers of good repute who wish to try their luck and skill with the salmo-wininnish.

The Quebec and Lake St. John Railway Company controls the fishing rights of the Outlet and ten miles of the Saguenay River, which are free to the guests of Hotel Roberval and the Island House. The latter is located directly at the Discharge, and steamers ply constantly between the two hotels from the lake-side to the Outlet. The Railway Company also furnish superb trout fishing, free, at Lake Edward and Lake Kiskisink.

It would be easy to string out reminiscences of personal observations on many salmon rivers which I have visited ; and sometimes the fancy possesses me that, were these memoirs engrossed, I could at a time of life when memory loves to dwell on bygones and strength to wield the two-handed rod is lacking, almost live my forest life over again in their perusal. But such reviews, if soddened with senile sentiment,

can hardly enlist the sympathies of young and vigorous readers, who prefer the records of present active happenings. Only a few kindred hearts, already seared and yellow, would perhaps respond spontaneously ; only a few be persuaded to "take a cup of kindness [now] for days of auld lang syne." Wherefore, I forbear! Sometimes it is almost sad to be solitary, even upon a vivacious salmon stream where fish are jumping.

## Itinerary of Salmon Waters.

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**M**Y BOOK of the Salmon would not be complete without some sort of an index of the waters by reference to which the intending tourist may perhaps more intelligently utilize his charts. What signifies the pursuit of happiness if the way be not made plain?

In Part IV. I have indicated the principal canoe routes of the New Brunswick district, though I have not named all the rivers. It is the most attractive of all the salmon regions excepting those of Nova Scotia, to which little attention has been paid. The rivers of New Brunswick have been well advertised and well occupied. The best of them are the noble Restigouche and its four great tributaries, the Up-

salquitch, the Patapedia, the Metapedia and Tom Kedgwick, where the most extensive artificial propagating works of the Dominion are located; the Miramichi and its several great branches, the Nepissiguit, Tabusintac, Charlo, and Jaquet; the Kouchibouquac, the St. John and its great tributary, the Tobique. Other New Brunswick rivers lying on the south shore of the St. Lawrence River are included in the list which appears farther on. No doubt New Brunswick has its advantages and attractions. There is galore of salmon there, and it is withal a good school for students who wish to learn woodcraft and cultivate the virtues of self-denial and endurance of discomforts and hard commons. But for solid comfort, pure and simple, with a modicum of fun, recommend me to the rivers and hospitality of Nova Scotia. In the first place, the fishing is not bad, while there is the omnipresent compensation of civilization always within reach. Here one can travel by wagon over graded turnpike roads, and have his choice of a half dozen salmon rivers within the distance of a single day's journey, and there is no end of sea food, lobsters, fresh vegetables, strawberries

and cream, eggs and poultry; and whatever one cannot find at the towns and hamlets he can procure between two days by sending an order to Halifax. Here on the watershed which traverses the whole peninsula lengthwise, are scores of delectable lakes filled with trout, out of whose cradle the limpid rivers leap to the pulsating bosom of the estuaries by the seaside. Driving along the shore we cross these rivers at frequent intervals, keeping the ocean constantly in view on the one side, and the alternate forests and hamlets on the other. Far out on the horizon clusters of islands loom up in the haze or sparkle like gems in the sunshine. When the weather is fine the coast scenery is entrancing; but intermittent fogs are apt to shut off the landscape betimes. Whenever they lift and dissolve the beauties of Nature are enhanced ten-fold by contrast.

The rivers of Nova Scotia are short, never exceeding fifteen miles in length, so that the salmon have only a holiday journey from the sea to their spawning beds; hence they are able to perform their exacting duties of procreation with that comfort and immunity from distress which is so graciously vouch-

safed to the well-to-do and high-born. They are always comely to look upon, because ill-conditioned fish drop readily back to the sea. Kelts are seldom seen. There are comparatively few flies or gnats to torment one, and the variety of food and landscape gives spice to life. The fishing, too, is practically free, and in going to the Province the course is short and direct. The angler avoids the taxing tedium of long canoe voyages, or the protracted journey by sea, *en route*, as on the lower St. Lawrence rivers. There are direct steamers now from New York and Boston to St. John, Halifax, Digby and Yarmouth, and when once the destination is reached the angler can readily choose some farmhouse or hostelry for his headquarters, and then tramp leisurely from brook to river, fishing as he goes, possessing his soul in patience, and succeeding in one stream where he fails in another; or he may send on his luggage in advance, and fish up to it, day by day. This is the economical method. Or he can hire a vehicle by the week, or by the trip, or job. There is only one serious drawback. He cannot dispose of his trout. Perhaps he can bribe his landlady to cook what he

wants for his breakfast or supper, but he cannot sell or give them away; and if he be much of a salmon angler, he will care little for trout, anyhow. The principal rivers of Nova Scotia lie in the southwestern counties, and are the Jordan, Liverpool, Port Medway, Le Have, Gold, East and Middle rivers. July is late for these rivers, as the season opens usually in February. In the middle part of the Province are Indian River, Tangier, and Middle River, in Halifax County. The St. Mary's is in Guysboro, east of Halifax. All of these have been, or are, fair salmon rivers. On the Basin of Minas, Bay of Fundy side, are several fair streams. This is the Cobequid District, famous for its moose as well as its fishing. The season for salmon begins here in June. On the north shore is River Phillip, famous since the settlement of the Province for its great trout, and now used by the Government for propagating salmon. Farther east, nearly at the land's end in Cape Breton, is that famous salmon stream, the Margarie. There are no salmon on Prince Edward's Island. In Newfoundland are the River of Exploits, the Humber, Gander, Castor, and half a



dozen more good salmon rivers, accessible by regular steamer from Halifax to St. Johns, and thence by steam tug or chaloupe. Anticosti Island furnishes the Jupiter and Dauphine rivers, which may be reached by chaloupes from Quebec in the fishing season; and then come the salmon rivers of the St. Lawrence system, which are annually becoming of increasing importance as rivers for rod fishing. Two years ago many of these would hardly have been looked at by sportsmen; yet at the auction of leases held at Quebec in January (1890), they brought fair prices, while one favorite stream on the Bay Chaleur realized as high as \$1,250. As it will be interesting to obtain some idea of the revenue which the Dominion derives from its leases of salmon rivers for purely angling purposes, I append the list of those which were officially advertised at the January sale, and have added several which were disposed of at private sale, as well as some which were withdrawn on account of disputed fishing rights claimed by the proprietors of the Mingan Seignory, besides a few which are of small account. As it stands, it is very nearly a complete list of all the salmon rivers of the

east Atlantic coast lying between Belle Isle and the southern point of the Bay Chaleur. The names of present lessees are also given so far as I have been able to ascertain them:

NORTH SHORE.

NAMES OF RIVERS.	OWNERS OR LESSEES.
The Bergeronnes—132 miles from Quebec.....	Tadoussac Hotel
Escoumain.....	.....
Portneuf—146 miles from Quebec.....	.....
Bersamis.....	.....
Murray.....	D. C. Thompson, Quebec
Laval.....	C. W. Phillips
Blanche, } Plover, } indifferent streams..... Columbia, }	.....
Betsiamite.....	.....
Manicouagan—220 miles from Quebec.....	.....
Mistassini.....	.....
Godbout.....	.....
Trinity.....	.....
Little Trinity.....	J. D. Gilmour
Calumet—364 miles from Quebec.....	.....
Moisie.....	.....
Little Saguenay.....	N. P. Rogers, New York
St. John (Chicoutimi).....	Senator Price
A Mars.....	“
Sainte Marguerite (west branch).....	Wm. Russell, Quebec
“ (north branch).....	W. M. Brackett, Boston
“ (from head of tidal water to the confluence of the two branches).....	Wm. Russell
Saguenay (part).....	.....

Mastigonche (and tributary waters).....	
Little Castor Noir.....	
Dickey.....	
Islands of the Grand Décharge (Saguenay).....	
Aux Rats.....	
Jeannotte.....	
Grand Décharge (Saguenay).....	
Little Bergeronnes.....	
Margaret and tributaries.....	
Manitou.....	Judge Dugan, Montreal
Sheldrake.....	J. G. A. Creighton
Thunder.....	
Saint John and tributaries (north shore).....	H. W. DeForest, New York
Mingan.....	Dr. Campbell, Montreal
Romaine.....	E. C. Fitley, Boston
Magpie.....	H. Abbott, Montreal
Corneille.....	T. Bacon
Nabissippi.....	Judge Dugan, Montreal
Washeeshoo (Grand).....	
"    (Little).....	
Pashasheboo.....	
Nabesipi.....	
Agwanus .....	
Grand Natashquan—571 miles from Quebec.....	
St. Francis or Alexis River—east coast of Labrador.....	
Goynish.....	
Kegashka.....	
Musquarro (Grand).....	
"    (Little).....	
Washeecootai.....	J. G. A. Creighton
Olomonasheebou.....	Capt. Joneas
Etamamiou.....	J. G. A. Creighton
Netagamiou.....	

Coacoahoo.....	
Little Mecatina.....	
Saint Augustin and tributaries.....	S. Campbell
Saint Paul.....	
Little Esquimau.....	

SOUTH SHORE.

Rimouski.....	
Grand Metis.....	
St. Anne des Monts.....	
Mont Louis.....	
Madeleine.....	
Restigouche, 1st part.....	Restigouche Club
"    2d    ".....	"    "
"    3d    ".....	"    "
"    4th   ".....	"    "
"    5th   ".....	"    "
Upsalquitch.....	
Casoupscal.....	Sir George Stephens
Metapédia.....	"    "
Patapédia.....	
Escuménac.....	
Nouvelle.....	Mr. Ware, New York
Grand Cascapédia.....	Governor-General of Canada
Little Cascapédia.....	Mr. Ramsay, Montreal
Bonaventure.....	Wm. Thorne, St. John
Grand Pabos.....	
Little Pabos.....	Louis Cabot, Boston
Grand River.....	
Saint John (Gaspé).....	R. Turner, Quebec
Dartmouth.....	H. P. Wells, New York
York.....	Mr. Murdoch, Chicago
Cap-Chat.....	
Matane.....	H. W. De Forest, New York

There are perhaps 120 salmon rivers within the Dominion of Canada, not including those of the Pacific side, which might yield fair sport to the rod. Most of these have been designated by name in my list, but there are rivers on the east Atlantic lying north of Belle Isle Strait, on the coast of Labrador, which have never been fished with a fly. Once, as long ago as 1860, I wet a few hackles in some of them in the course of the season, but the results were not satisfactory—chiefly from lack of experience—for the waters teemed with fish. Some of these rivers are attracting the attention of anglers, and they will soon be in demand, no doubt. There must be a dozen in all. There are three or four on Byron's Bay, and an equal number in Sandwich Bay, between latitude  $54^{\circ}$  and  $56^{\circ}$ . Midway between the two is the great Esquimaux Bay, known also as Gross Water and Ivucktok Inlet, into which empty the Nor'west River, the Hamilton and Tom Liscom, all salmon rivers. There are two Hudson Bay posts on this bay, namely, Rigolet and Nor'west rivers, and the Esquimaux who reside there cure a good many salmon for their own use and for the consumption of

the employees at the two stations. These rivers take their rise in the great Laurentian watershed which bisects the peninsula and separates the northern and southern districts, and which continues to the shores of Lake St. John. Altogether there are five Hudson Bay Company posts in Labrador, and trails lead from one to the other, the most northern post being Fort Chimo, on Ungava Bay, now presided over by Robert Crawford, formerly of Red Rock, on the Nepigon. Upon the plateau of this great watershed, which drains a territory of 450,000 square miles, are innumerable lakes, some of which are of vast extent and others small. These lakes are the sources of all the Laurentian salmon streams, as well as of hundreds of other streams barren of salmon, which, like Montmorenci, find their way to the sea or river over precipitous falls from 150 to 400 feet in height. To the visitor who navigates this rock-bound coast in summer, these falls greatly relieve the sombre effect of a usually monotonous landscape, though there are bits of scenery as picturesque and rugged as the coasts of Norway and the North Cape.

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