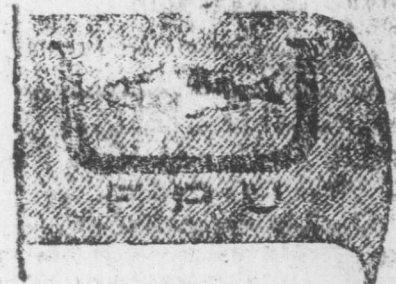


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The Mail and Advocate

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ST. JOHN'S, N.F.L.D., JULY 31, 1915

OUR POINT OF VIEW**The Economic Use of Coal**

SINCE penning that article of a few days ago respecting the employment of cotton in the making of high explosives we have come across an United States Commerce Report, which reads in part as follows:

"Since the beginning of the war the increased importance of the by-products of the coke oven and gas works in Germany has led to efforts to increase the use of coke by concerns that heretofore have used only coal. The government has begun by mixing certain portions of coke for use on its railways, and in its buildings, and the manufacturers are following this example. The coke ovens and gas works are now dependent on to furnish three vitally important products: explosive material, motor fuel, and nitrogenous fertilizer. It is deemed imperative that the production of these by-products be stimulated by the increased demand for coke."

This would go to show that Germany is indeed using coal products in the making of high explosives.

Note the splendid economical system of Germany. It is an inspiration to us all, as it shows us very clearly how it is that Germany is maintaining her position on the battlefronts to-day, opposed as she is by such odds. We would do well to take a lesson from the German book on internal economy, for it is marvelous.

We do not want to be accused of being visionaries, but we see in this the possibility for cheaper fuel for Newfoundland.

We burn a great amount of soft coal here, and it is quite possible that with the establishment of modern by-products coke ovens in this country a considerable cheapening of fuel for the people might be obtained.

As is well known our method of burning coal is very wasteful, a large amount of the thermal value being lost into the air in unconsumed gases and carbon.

Besides this there is the waste consequent on the destruction of very valuable elements contained within the coal, which might be saved, and the residue—which is coke—could serve as a cheap fuel for household purposes.

The extraction of the more valuable by-products, we believe, would give good returns for the labor.

Among the valuable by-products obtained from the distillation of coal are tar and ammonia, the former the source of an al-

NOTES ON THE HABITS AND LIFE HISTORY OF CANADIAN SALMON

By Professor E. E. Prince,
Dominion Commissioner
of Fisheries, Ottawa.

THE Atlantic salmon of Canada are identical with the salmon of the British Islands and northern European rivers, though minor local peculiarities are noticeable. The head is smaller and more acuminate and the body is more gracefully attenuated both in the shoulder and tail region in the British form.

The Ouananiche, a land-locked salmon of Lake St. John and certain lakes bordering on the international line in the basin of the St. John River and the St. Croix River, is regarded by most authorities as a salmon which, as a rule, remains permanently in fresh water. It has ceased to descend to the sea, though anglers on the Saguenay River report occasional capture of these fish. The tail portion of the trunk of the fish is much lengthened and narrowed and the tail far more expanded proportionately than in the salmon, and it is forked.

Some experts doubt the correctness of the common opinion that it is a land-locked variety at all, but the fact that smelt, sea-bass and the salmonoids readily become acclimatized to fresh water, and the example of the small speckled trout, which becomes so remarkably modified under changed conditions supports the common view regarding the ouananiche.

stances such as aniline dyes, and the latter the principal element is a valuable fertilizer—sulphate of ammonia, and various nitrogenous compounds. These latter furnishing Germany with important elements in the making of high explosives.

Then the coke itself which remains as a waste product after the extraction of the various more refined elements has great value as a fuel. And from an economical point of view this only of all the elements contained in coal should be used as ordinary fuel, any other procedure is pernicious wastefulness.

It is time that we take an active and intelligent interest in this matter, for the sake of ourselves, and for the broader reason, for the sake of posterity, whose fuel supply we are cutting into so wastefully.

This question of a future fuel supply is exercising the brains of all enlightened governments throughout the world to-day, but it is likely Newfoundland will wake up "the day after the fair" as she has persistently done for ages.

It is our policy to drift like clouds, asleep to all that is transpiring about us till we are aroused by the kick of present necessity, and then before we have had time to collect our wits about us, we fall into some big blunder, as was so painfully evidenced in the late Reid-Wilson scandal.

Germany is encouraging the universal use of coke as a fuel, because she recognizes the wastefulness of burning coal, and the value of the distillation products of the coke ovens.

Coke has another recommendation as a household fuel, in that it is clean in the handling and also in the products of combustion being free entirely from objectionable soot and smoke.

We recommend these considerations to the Government, also to the gentlemen who are at present furnishing the town with illuminating gas, and in a small measure local farmers with sulphate of ammonia.

It is time we do something, and any suggestion towards the cheapening of fuel should receive the earnest consideration of all con-

The brook trout, or speckled trout which migrate up the Nepigon River to and from Lake Superior, are notable for their large size and massive build, and still more the searun brook trout which become utterly transformed in shape, size and coloration show how vastly surroundings change the form and external features of familiar fish. The well known instance of the introduction of English river-trout into New Zealand is even more striking.

Prior to 1867 there were no salmon or trout in New Zealand. There was but one insignificant salmonoid, an inferior kind of smelt. In 1864 the first batch of eggs reached New Zealand, but in October, 1868, a series of trout eggs sent from England in 1867 were hatched out at Otago and planted.

In 1869 another shipment was taken to New Zealand, and many other shipments from the British Isles took place. Now, the trout of British streams rarely averages more than 1½ pounds to 2½ pounds—a 3-pound, or 4-pound trout would be a rarity, though specimens have been reported of 15 pounds weight. As a rule 1-pound or 2-pound trout are considered by British anglers as mature well-grown fish.

In New Zealand, however, most of the trout have gone down to the sea and have become sea-trout ranging from 10 pounds up to 25 pounds weight. In the small streams the trout still keep their normal coloration and show the usual deep-red spots, but as they grow larger the spots become fewer and finally disappear altogether. In snow rivers this takes place when the trout are one-half pound weight. The vast changes in size, shape and coloration seen in the English trout introduced into the waters of the Antipodes demonstrates the potency of environment.

Passing to the Pacific waters of the Dominion we find a wholly new group of salmonoids abounding there. With such exceptions as the steelhead and the cut-throat trout (*Salmo clarkii*) which are close allies of the true salmon and the English river-trout, the so-called salmon of British Columbia are distinguished by many important features some of which especially the length of the anal fin, and the comparatively small scales are apparent at once to the ordinary observer, while the more abundant species (Sockeye) are notable for their small size, though chiefly canned, one spring salmon being counted an equivalent for three sockeye salmon.

The dog-salmon (*O. keta*) 10 or 12 pounds, is a less abundant fish, but its range is extensive as it occurs in all the rivers of the Pacific from the Sacramento to the waters of Alaska. It is the last to come in and appears at the end of September and runs to the middle of November. It is often marked by dark though indistinct transverse bars, and shows pale green patches about the gill covers and shoulders. Its flesh is stated by Dr. Bean to be of a beautiful red colour when it comes in, but it deteriorates rapidly.

All the specimens which I examined in British Columbia were large, 15 pounds to 20 pounds, and the flesh was of a dirty white colour. The teeth were enormous curved instruments, white as ivory and very formidable. It is of inferior market value though much used by certain tribes of Pacific Indians.

The species worthy of reference in this brief sketch are the blue-back or sockeye salmon (*Oncorhynchus nerka*) which like all of the genus to which it belongs has 14 or 15 rays instead of the 9 or 10 rays of the true Salmones. Its weight ranges from 4 pounds to 10 pounds, though the latter weight is somewhat unusual. Its flesh is dry but firm and of a rich red colour, hence its value for canning purposes. A deep coloured salmon is more in demand in the canned-goods market than

indeed there is little or no demand.

The sockeyes ascend the British Columbia rivers in countless myriads during July and August or even later and they are followed by another small species the Humpback salmon. The two kinds often overlap so that nets fished for sockeyes take numbers of humpbacks towards the close of the season.

The humpback (*O. gorbuscha*) is a shapely fish on entering the estuaries. Its weight is 2 pounds to 5 pounds, and like other species the male becomes curiously malformed. The ridge along the back rises to a remarkable height, while the jaws lengthen enormously. It ascends a comparatively short distance as a rule, and the change is more rapid and observable than it is in the case of the sockeye, the male of which becomes grotesquely humpbacked. The flesh is white and the species has hitherto been little valued.

The coho or silver salmon (*O. kisutch*) is an elegantly formed and from an economic point of view a superior fish, though the pink tint of its flesh is somewhat pale. Ten pounds to 15 pounds is the usual weight, though they grow to be 20 pounds or 30 pounds. They run very late, the early schools following close upon the last sockeye run, but the main run does not come in until October.

The largest of all the Pacific salmon in the Quinnet, or spring salmon, ranging from 20 pounds up to 70 pounds or 80 pounds. They are also called Chinook salmon, and are characterized by a comparatively small head, deep body and large expanse of tail. Its flesh is pale pink, though white and red and white-fleshed specimens are common, and its edible qualities as well as the uncertainty of the colour of the flesh, the quinnat is not especially prized by British Columbia canners, though it is nevertheless used. They haunt the inshore waters all through the winter and enter the rivers in March and April, continuing to come in in small schools all through the summer. The spring salmon is stated to ascend a tributary of the Fraser river, also resorts to spawning grounds much nearer the mouths of the rivers, as I have seen it spawning on a tributary of the Fraser river more than 120 or 130 miles from the sea.

It has long been known that ordinary sea water has a very injurious effect upon the yolk which is so abundant in the eggs of all the salmon tribe.

Professor McIntosh showed 30 years ago that in the young fry of Tay Salmon, the yolk becomes dense, and of the consistency of cartilage or Indian rubber when placed in sea water, hence the deposition of the salmon's eggs in the sea would involve their total loss.

A recent Norse observer, Mr. O. Sagaad, has found by experiment that salmon can be hatched successfully if the salinity is 9 per cent strength; but if stronger, or if weaker, say 2 per cent or 3 per cent, the results are as fatal as ordinary sea water. It is possible that some of the so-called salmon of the Pacific coast may spawn in brackish waters or so short a distance up river channels or in coves and inlets where abundant fresh water pours down from the precipitous mountains adjacent, as to ensure a suitable admixture.

In this connection the published observations of Messrs. A. B. Alexander and Scofield are of extreme interest. They show that the dispersive and the schooling habits of the young salmon fry vary with the conditions surrounding them. The observations further demonstrated that some ran into salt water and that they probably go out at intervals in many schools. The movements of the fish in the streams are regulated primarily by the food supply, which in its turn may be affected by temperature or rains.

short, the young fish instinctively move down stream. In the fresh water they show no tendency to congregate in schools. Their numbers in any given locality are determined by how many the place will accommodate and give each an equal chance to secure its food. They prefer to scatter and shift for themselves. Young salmon in tide water, especially those in brackish water, seem to move in schools.

Certainly schools of small salmon fry 2 inches to 3 inches in length have been noticed in the Straits of Georgia in the month of June which had evidently just passed through the "parr" stage and had assumed a bright uniform silvery appearance and showed no indication of the transverse bars or "parr" marks.

Now the true Atlantic salmon attains the size mentioned in about two months after hatching, say in June, but the "parr" marks may be retained for a year at least when the silvery exterior of the smolt is assumed. Hence the British Columbia species must much more rapidly pass through the various changes characteristic of the fry, and probably reach the mature stages in half the time of the Atlantic species.

If the widely published statement be reliable that a marked salmon, 24 pounds weight and 36 inches in length, had been taken in the fall of 1898, which there was evidence to show was one of a batch of small fry planted in the spring of 1897, then our ideas as to the growth of these fish must be entirely changed. It is *prima facie* improbable that larval fish a fraction of an ounce in weight (the newly hatched salmon weighs the one-hundredth of an ounce) should reach in sixteen or eighteen months a weight of 24 pounds.

Indeed I have a number of sockeye salmon fry in my possession which show twelve or thirteen "parr" stripes, though less distinctly than at an earlier stage and they are seven months old. They are from 2 inches to 3½ inches long and weigh barely 50 grains each (about 1-5 oz.) At the same rate of growth they would reach 5 or 6 oz. a year later, and that is the weight of a smolt 7 inches long at the time it descends to the sea.

Until the evidence is clearer and more convincing it is advisable therefore to adhere to the usual scientific opinion that most Pacific salmon as a rule do not reach a weight of 8 to 15 pounds in less than three years, but as it is in every sense full grown at that weight in the sockeye and other species, its development is far more rapid than that of the eastern species.

All the Salmonidae of whatever genus or species pass through recognized stages. All commence with the egg, which is deposited in clear rippling portions of rivers and streams where gravel and small stones abound and where the water is sufficiently shallow to ensure abundant aeration. The second stage is the "alevin," or newly hatched larva, a delicate worm-like condition, in which the large elongated bag of yolk on the under side, the prominent tinted eyes, the slender tail, and the continuous fin-membrane along the bag, are seen in all the species. Whatever differences there may be in minor details the life history of the eastern or Atlantic salmon is typical of the allied species in our eastern and western waters and it may be divided into seven separate stages.

(To be continued)

JOHNNIE'S DEMAND

A young boy of four was unable with mother on Sunday morning, the father being from home for the week-end. "Now, Johnnie," said his mother, "you'll sit in father's chair this morning and say grace." "Weel, mother, if I'm to be father I maun hae two eggs," returned Johnnie imperiously.

And some people make us tired—because we can't run fast enough to

**On the Battlefield
Comicalities at the Seal Fishery---A
Trip With Capt. Arthur.**

Owing to the illness of our old friend who is supplying the material for these series of articles we were unable to continue them during the past few days, but now that he is at right we have much pleasure in presenting the public with another account of his experience. The old sear says, I remember well an amusing scene which happened the last day we were on the ice that spring. The crew were returning to the ship in the evening having panned about 500 seals, when we came to a lake of water. Jack Shaugro who was our master-watch, mounted a "growler," which is a small berg, for the purpose of locating the best lead on route to the steamer which was seven miles distant. He was followed by a number of the watch. When about 80 men had got upon it, the big growler

Commenced to Roll

and when it threatened to turn over, man after man jumped into the water.

On that growler was a deaf and dumb mute from Petty Harbor. When he realized the dangerous predicament he was heard to give one unmerciful yell and jumped for the ice floes. It was the first time I learned that he was ever in the water and being unable to swim created an awful noise by his pitiful cries. He, however, succeeded in getting on the ice-floes. Shaugro's was the only man to hold his position on the berg. In the meantime all managed to swim to a place of safety and all stood to watch the lone man on the growler. It was an

Interesting and Exciting

time, I can tell you. We all expected to see our "master-watch" drowned by the suction caused when the berg went over. Shaugro, however, held on, and as the growler turned he slid down the side and when it had turned bottom up he was still standing on it, and waited until his ice raft had drifted near enough to jump to safety.

This growler incident delayed us much and it was dark when we set out for the steamer, which was jammed and could not steam to pick us up. A number of the "green-horns," who were with the other watches gave up from

Cold and Exposure.

Shaugro's watch which was the one I was in, succeeded in reaching the steamer, and after getting a hot cup of tea we were sent out to pick up the exhausted men. We were fitted out with lanterns and stretchers, and after a hard tramp came upon them.

The over-come men numbered about 20, some were ice blind and more were crippled. Those that were weak were placed on the stretchers, whilst the blind men were led by the hand to the ship. By 2 a.m. all were safe on board, though badly broken up. Two days later the steamer got clear and we were able to pick up her pans of seals. We hoist aboard and stowed down the amount of 23,000 which

Was Our Total Catch

for that spring. The first steamer which arrived in St. John's that year reported the Eagle lost with all hands. How the rumor got about is attributed to the fact that two days after leaving St. John's a fierce gale prevailed. A quantity of our deck gear was washed overboard and was picked up by some steamer. Those on board concluded that we had been lost or blown up.

We struck the seals about 22nd March, off the Horse Islands, where during the spring, we were repeatedly jammed. The seals were seven miles distant from us and for this load we had to travel the entire distance, seven miles to pan them. The fact of being

Alone all the Spring

and not being reported by any steamer, gave color to the rumor of our being lost.

The S.S. Aurora, Capt. Jas. Fairweather, was dispatched from St. John's to search for us. On the 8th of April she sighted us and recognizing us passed on to Twillingate to report to St. John's that we were safe. We were then jammed about three miles from clear water with all our seals on board. Nearly all the men ran to the edge of the ice to speak the Aurora but she did not stop. After reporting at Twillingate she returned, but in the meantime our steamer got clear and where the ship lay up for the night at the edge of the ice we

Spoke a Schooner

belonging to Twillingate. The captain of this schooner brought on board a Twillingate "Sun" which contained a full account of the loss of the Eagle. On the 9th the Aurora returned and state at the railway station. "I saw Capt. Fairweather came on board," he panted, "why do they put his greeting to Captain Arthur was the station so far away from the vit." "A touch of your flesh mon is as good lage?" The porter replied, "Weel, as a load of fat." The two steamers

wind prevailing, Captain Fairweather remained on board the Eagle for five hours, when he boarded his ship and sailed north. The Eagle also got up steam and started for home. About half an hour after leaving, a fierce

Northeast Gale Set In.

Capt. Arthur put every pound of steam on her and set every sail, which were kept on till we arrived off the narrows of St. John's. Captain Jackman intended prosecuting the voyage for about a week longer but on learning from Capt. Fairweather the anxiety which prevailed in St. John's, decided to bear up for home. Capt. Jackman was heard to remark that he had experienced many difficulties in getting through the frozen pans but the trouble he met in trying to avoid collision with the boats in the harbor, which were as thick as flies around a molasses punchon, was much greater. All were anxious to welcome him home.

(The above article is from a paper, the name of which we are uncertain of, published in St. John's about 25 years ago, so Mr. John Shaugro—the hero of the tales—explained to us, Mr. Shaugro is hale and hearty though well past the allotted span, and tell many interesting stories of adventure among the ice floes and at whale hunting in the Arctic regions.)

**A Soldier's Story
of Gallipoli Fight**

1st. Naval Brigade,
B. M. Expeditionary Force,
June 23, 1915

Dear Father.—Just a few lines to let you know I am alive and still carrying on. I trust you and everyone at home are well and making good. Just finished eight days in the trenches and we are now down to the rest camp, which is about three miles from the firing line. Well, we are still on the winning side, cutting into the Turkish position little by little, slow but sure; things the going favourable for us but the end is not yet. War is now business and things are going pretty quite for the last couple of days.

I don't know how soon they are going to start the ball rolling again but I expect soon. I am in the best of health. The enemy managed to put six shells near the part of the trench I was in last Sunday. I was hurt but the last one fairly lifted me, with the force of the explosion, against the back of the trench. I was dazed for ten minutes. Time passes quickly, a fellow can't keep track of all. I lost my pal last week by shrapnell. Heaven knows how I escaped, but as you said when I missed going down in the Elitros May, it's better to be born lucky than rich. There were five of us left unhurt out of nineteen, and four of them have died since.

It's a long time since I received a letter from you. I suppose you are all busy with the fishing and you are all up to your eyes with work. I pray the fishery will be successful in Newfoundland this year. News is very scarce with me. We accounted for three hundred of enemy this day for about half an hour's work. Well, good bye father, give my love to all home and tell them to drop me a line. Take care of yourself and I trust I'll meet you soon.

Good Bye

CHARLIE.

The writer of the above letter is a son of friend Miles Bailey of New Chelsea, T.B. He has been absent from home for over four years, having been living in England. On the outbreak of the war last August he volunteered his services, which were accepted. His first field of action was in Egypt against the Turks. Now he is in Asia Minor. He has been in quite a few engagements and so far has come through safely. We have no doubt but lots of his friends at home will read with interest his letter which we publish herewith.—Ed.

CAUSE AND EFFECT

My dear friend, who to the country has been in keeping chickens. This year in keeping chickens, since then his wifes new flower had is looking like the chickens.

—JUDGE.

HIS REPLY

The humor of Scotland (according to an English writer)—An old gentleman arrived in hot and breathless from the railway station. "I saw Capt. Fairweather came on board," he panted, "why do they put his greeting to Captain Arthur was the station so far away from the vit." "A touch of your flesh mon is as good lage?" The porter replied, "Weel, as a load of fat." The two steamers