

UTILIZING FISH WASTE

Expensive Processes Necessary to Save By-products of Salmon Fisheries

One of the problems that has long confronted the operators of fish canneries is how best to dispose of canner waste. This waste is usually very heavy. In the case of humpback salmon, it has been stated that "the waste is from 40 per cent. to 50 per cent. of the round weight." The waste from the "red" salmon is rather less, but it constitutes a serious loss.

According to a Government estimate the waste at the Pacific Coast canneries amounted to 140,210 tons in one year, which, at values fixed at commercial operations, would amount to over two million dollars.

The products obtained from the reduction of the waste are fish scrap for fertilizer and fish oil. An average of several analyses of the raw waste from humpback salmon showed that it contained 3.02 per cent. nitrogen, 3.46 per cent. bone phosphate and 10.43 per cent. of oil. At retail prices this would give a value of \$20 a ton. It would seem desirable, therefore, to establish fish reduction plants in the neighborhood of the larger canneries to utilize the waste.

One difficulty, however, has been that the canning industry is carried on for only a short time each year, and, as the fish reduction plants are expensive, considerable capital would be kept idle during most of the year. On the Atlantic coast of the United States this handicap has been overcome largely by gathering in enormous quantities of menhaden, a species of herring, and converting these into fertilizer and oil. Nearly 50 factories, having a total invested capital of over \$3,500,000, are engaged in this latter industry. In 1912, they produced 6,651,000 gallons of oil, valued at \$1,551,990, and 88,520 tons of scrap valued at \$2,138,165.

Again, the kelp resources of the Pacific coast, which are being investigated by Prof. Prince, are without doubt of great value, and may possibly be exploited to advantage by those operating the fish scrap industry. In any event, the utilization of fish waste will not be an entire success until the cost of the process of reduction is lowered, or means are found for keeping the plants in operation for longer periods each year. It is a field deserving close attention from those interested in Canada's fisheries.—A.D., in "Conservation."

ADVICE OF EMPLOYEES

Complex Railway System Needs and Invites Suggestions From All

A circular issued to employees of the C.P.R. asking for suggestions on the improvement of the service certainly "struck oil," for suggestions poured in until the committee which investigated these has at times been almost snowed under. However, each idea has received careful attention, being referred to the heads of the departments concerned, and adopted or otherwise according to its merits or practicability. Some ideas have been adopted and those who suggested them have so much to their credit. Indeed promotion has followed in several instances and in others promotion is coming whenever the opportunity offers.

In so complex an organization as a railway, there are many angles or points of view. Some mind untrammelled by routine sees an opening for improvement where the man on the actual job goes by precedent. An operating official whose work compels him to travel may have pointers on the treatment of passengers which he gains by personal experience. Ideas from other countries may be adapted to Canadian conditions, and may be suggested by a clerk who has immigrated from Europe or the United States. It is a good thing that there should be a melting pot for ideas of a big company's employees.

A Mountain of Salt

A mountain of rock salt 200 feet in height and nearly a mile in diameter is described by Prof. E. F. Gautier, as being situated near Jelfa, Algeria. Two other hills of this character are known in Algeria, both being near Biskra, and in all cases the salt is surrounded by Triassic marls and clays.

A curious feature of the Jelfa hill is the fact that, in spite of the very soluble character of the material composing it, it stands up in high relief from the surrounding clay, and contains no valleys or other signs of erosion. It does, however, contain a number of sinkholes, as in a limestone country.

When the brief torrential rains of winter occur the water sinks almost at once into these cavities and soaks through the permeable salt, emerging at the margin of the hill in salt springs. The same showers falling on impermeable clays and marls produce a maximum of mechanical erosion, so that these substances are worn away, leaving the salt in high relief.

Vacuum Cleaners Groom Horses
Vacuum cleaners, which have the usefulness of curry combs, with the additional advantage of suction to draw into a receptacle the dust, scale and dandruff removed from the animal's coat, have been adopted for grooming the horses of New York City's park department. The cleaner is driven by an electric motor and is so light as to be easily carried from place to place.

ence, however, they are mounted on hand trucks.

It has been found that besides doing the work in a much more thorough and sanitary manner than is possible with the ordinary curry comb, the cleaners are far more rapid. The men, using the vacuum cleaner, can care for several times the number of horses they formerly could curry in the old way.

Cleaning the Walls

For gathering dust from walls a woman has patented a bag to be placed over a broom and be held in place by suspender-like straps.

A GIANT AMONG DOGS



A peace loving dog is the Great Dane. He'd rather lick your hand than rend your head from your shoulders; he'd rather snuggle in a comfortable kennel than bivouac on the battlefield.

In far away days when Cyrus conquered Babylon the Persian leader sent his troupe of "war-dogs" into the thick of the battle, and his victory was much easier because of their brutal method of fighting, and at the historic battle of Marathon both Persians and Greeks used dogs as allies to their armies.

From these "soldier dogs" descended the German boarhound, which in time became known as the Great Dane. The "son of battle" is still big and powerful, the average weight of a Great Dane being 100 pounds and his height 32 inches.

THE ORIGINAL RUBBERNECK

Giant Heron a Great Fisherman and Vermin Exterminator

The giant heron has so much neck that to get it out of his way he coils it in and out until it looks like a great glistening blue question mark.

But as a matter of fact the solemn old "giant" asks no questions of any one, when he sees what he wants in the way of a fat frog or a plump little



fish he untwists his neck, darts his long sharp bill into the water and without ever saying "by your leave" he picks up a fish or a frog or a water spider and swallows it.

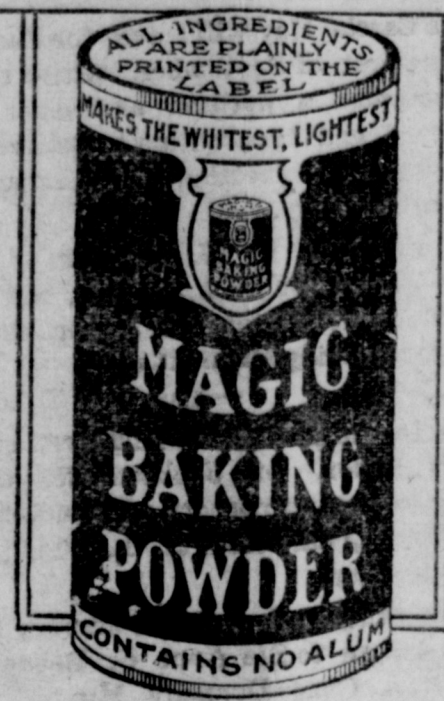
In South America and other tropical countries where the giant heron is known the natives look upon him very kindly because he eats so many fish, but some of the wise ones among them know that if it were not for the heron their country would be over-run with snakes and rats. These troublesome creatures make food for the heron family and they don't last long in places where the giant birds are common.

FORESTRY IN CANADA

Much of Dominion's Future Prosperity at Stake

The proper interpretation of forestry and what it actually means to Canada, cannot be stated too frequently. The future of this country depends upon our making every acre productive. Broadly speaking, the earth's surface can be made productive in two ways only, by producing agricultural or timber crops. South of the 60th parallel, about 69 per cent. of the area of Canada is unsuited for agricultural crops. A very large proportion of this non-agricultural land is suitable for the production of merchantable timber. The production of forest products has been and will always be one of our chief industries. At the present time forest industries supply 12 per cent. of our foreign trade, 16 per cent. of our railroad traffic, and equal in value our annual wheat crop. We have a choice to make. Shall we let these valuable industries perish for want of raw material or shall we perpetuate them by protection of our present mature timber from fire, by protection of the young forests of our non-agricultural lands, and by logging of our forests in such a manner as to encourage the reproduction of valuable forests? The perpetuation of these industries and their source of raw material by the investment of such expenditure as the anticipated crop will warrant is forestry—H. R. MacM. in Conservation.

NO ALUM



Steel Company Fights Rum Habit With Food

Chicago, July 30.—Officials of the Illinois Steel Company in South Chicago have started a campaign against drinking among their employees. Signs and posters telling the evils of strong drink were displayed in all parts of the plant. The campaign had a good effect and the officials were just beginning to congratulate themselves when the saloon keepers hit upon an idea to offset the boycott against them.

They established elaborate free lunches and advertised the fact. They posted signs which told of the bad effects cold lunches had on digestive organs. One sign read:

"Don't come in to drink. Come in and eat."

The company came back with the establishment of a restaurant in the plant. To-day the men ate their first meal with the following menu: Bowl of soup, 2 cents; roast beef and potatoes, 5 cents; tomato, 1 cent; pie, 1 cent; coffee, 2 cents; ham sandwich, 2 cents; beans, 2 cents; ice cream, 2 cents.

Cutting The Cables.

Cutting submarine cables in wartime is by no means so easy a job as it sounds.

Briefly the method is as follows: The cruiser detailed for the work steams slowly at right angles to the cable route, dragging after her a special kind of grapnel, like a five pronged anchor with shears attached, which she cuts the cable at the same time. This grapnel is connected to the cable cutting ship by a long rope formed of strands of steel and hemp interwoven, and to which is an instrument called a dynamometer, that shows when the cable is broken.

Rumania's Capital.

Describing Bukharest, the capital of Roumania, a statement issued by the National Geographic society says:

"The Roumanians have spared no effort or thought toward making Bukharest, their capital city, a real capital and not just one of the larger Balkan towns, cut to the severe design of the modern commercial city that is found throughout the west. The whole history of the Roumanians since the casting off of the Turkish yoke has been one of conservative progress leavened

with enterprise, of thrift lightened by keen appreciation of the embellishments and pleasure of life. And in Bukharest one finds more artistic, literary and scientific life than in any other part of the peninsula.

"Bukharest is an attractive city of 300,000. It is laid out with many broad boulevards and avenues, as becomes a capital, and has, as Paris, Berlin, and Washington, famous drives and parks within its area, an 'avenue of parades' and zoological and botanical gardens. The city is built in a hollow between the hills upon both sides of the Dambovita river, which is crossed by twelve ornate bridges. There are some truly magnificent buildings upon its broad thoroughfares, among the most prominent of which are the royal palace, the university, the national theater and the palace of justice. Bukharest has some unattractive sections, with narrow, crooked streets, but these are reminiscences of the Turkish regime and are fast disappearing. While Bukharest does a considerable commercial business, it is of no importance industrially.

"Bukharest, like our own capital, has been developed primarily as a capital. The Roumanians have chosen Paris and Vienna as their models and have produced a judicious blending of the two upon the much smaller Balkan scale. Bukharest has plenty of good music, and its people, who gather in the concert halls or enjoy the free military concerts in the evening along some promenade, are appreciative and critical listeners. The national theater brings varied offerings, and that the best. The entertainments of the little capital are discreet imitations of social Paris, with a touch of mild Viennese friendliness. Furthermore, Bukharest, as also becomes a European capital, is a great educational center. Its schools, academies, colleges and university are models for Balkan countries."

Dr. Seitz Explains to Emperor William

Berlin, via London, Aug. 4.—The Emperor, it is officially announced, has received a despatch from Dr. Seitz, governor general of German Southwest Africa, explaining his surrender to General Louis Botha early in July. He says further successful resistance was impossible as the German colonial force was surrounded by enemies greatly superior in numbers and cut off from the base of supplies. The condition of the horses, for which no oats were available for several months, he adds, rendered it hopeless to attempt to break through the enemy lines.

"Kasier Will Die Mad"

A good deal of attention has been paid in some quarters to an extraordinary Latin prophecy said to have been made by a "Brother" Johannes in the year 1600 as quoted in a recent issue of the "Figaro," published in Paris, France.

In deciphering the allegory, it is taken for granted that France is represented by a cock; England by a leopard; Russia by a white eagle; Germany by a black eagle; and Austria by the "other eagle," while the lamb stands for justice, Mercy and Truth.

"Towards the year 2000 the Antichrist will manifest himself. His army will surpass in numbers all that can be imagined. There will be Christians among his legions, and there will be Mohammedans and savage soldiers among the defenders of the Lamb.

"For the first time the Lamb will be all red. There will not be a single spot in the Christian World that will not be red, and red will be the Heavens, the Earth, the Waters, and even the Air for blood will flow in the domains of the four elements at once.

"The Black Eagle will throw himself on the Cock, who will lose many feathers, but will strike back heroically with his spurs. He soon would be crushed were it not for the help of the Leopard and his claws.

"The Black Eagle will come from the country of Luther, will surprise the Cock from another side, and will invade the country of the Cock up to the middle of it.

"The White Eagle, coming from the north, will surprise the Black and the 'Other Eagle' and will invade the country of the Antichrist from one end to another.

"The Black Eagle will see himself forced to liberate the Cock in order to fight the White Eagle, and the Cock will pursue the Black Eagle into the country of the Antichrist to help the White Eagle.

"The battles fought up to them will be as nothing compared to those which



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will take place in the country of Luther, for the Seven Angels will together pour in the fire of their censors on the impious Earth, which signifies that the Lamb will order the extermination of the race of Antichrist.

"When the Beast sees that he is lost he will become furious, and for many months the beak of the White Eagle, the claws of the Leopard, and the spurs of the Cock will furiously strike at him.

"They will cross rivers over the bodies of the slain, and these, in places, will change the course of the waters. They will bury only the men of noble families, the leading commandants, and the princes, because to the carnage made by the armies will be joined the wholesale death of those who will die of hunger or the pest.

"The Antichrist will ask many times for peace, but the Seven Angels who walk in front of the three animals defending the Lamb have declared that victory will only be granted on the condition that the Antichrist be crushed like straw on the barn floor.

"The executors of the Justice of the Lamb cannot stop fighting as long as the Antichrist possesses soldiers to fight against them.

"That which makes the decree of the Lamb so implacable is that the Antichrist has pretended to be a follower of Christ, and to act in His name, and if he does not perish, the fruit of the Redeemer would be lost and the doors of Hades would prevail against the Saviour.

The fight which will take place where the Antichrist forges his army will not be in way a human fight. (This may have reference, it is suggested, to Essen, where the Krupp works are, and many authorities believe that the decisive battle may take place in Westphalia.)

"The three animals defending the Lamb will exterminate the last army of the Antichrist, but they will be forced to erect on the battlefield a pyre at large as a city for the bodies of the dead will change the aspect of the countryside, as there will be mounds of the slain.

"The Antichrist will lose his crown and will die in solitude and madness. His empire will be divided into twenty-two states, but none of them will any longer possess fortresses, armies or vessels (Curiously enough, this number coincides with the number of German states.)

"The White Eagle, by the order of St. Michael, will drive the Crescent from Europe, and will install himself at Constantinople.

"Then will begin an era of peace and prosperity for the earth, and there will be no more wars, each nation being governed according to the rules of justice.

"There will no longer be Lutherans or Schismatics. The Lamb will reign, and the supreme happiness of humanity will begin.

"Happy will be those who, escaping the perils of that period, will be able to enjoy the fruit of the reign of the Spirit, and of the purging of humanity, which can only come after the defeat of the Antichrist."