

STATE OF WASHINGTON

(A Workshop and a Playground for All America)

SEA FOODS

One of its Natural Resources in Commerce and Sports.



SECRETARY OF STATE

Ernest N. Hutchinson.

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We may boast of constitution or heredity, but whether this body of ours keeps its natural state of health depends upon the machinery within our skin and the food upon which we operate it! It is perfectly natural for us to be in bodily health, quite unnatural for us to be otherwise. The things this body of ours will do within itself to keep up this nice balance of well being are vastly more important in the scheme of living than anything we can pour into it from without, *if we only keep it supplied with the right food.*



Abundance of fish in Washington waters makes trolling for salmon a sport for all and a living for many.



Opening Oysters in the Most Elaborate Oyster Cannery of the Nation at Everett, Wash.

There is more of that much sought after vitamin D in the 300,000,000 pounds of canned salmon produced in this country than in all the cod liver oil imported into the whole nation to bolster up the health of men, women, children and chickens.



Along the shores of Hood Canal and on San Juan Island beaches, as well as the bays between Seattle and Olympia, shrimps are in abundance. Some Dungeness crabs attain a size of seven pounds, and large and small are also gathered on the tidal beds of Willapa and Grays Harbor near the Pacific ocean.

Oysters, shrimps, crabs and other tideland feeders are superior in flavor and tenderness, fatter and more luscious on account of their more abundant food washed from valleys and glacial-topped mountain ranges by Washington's wonderfully distributed rainfall, through four navigable rivers and myriads of lesser streams to form the algae, the diatom and other plankton, little mineral sun-catchers, that make the feed rich with vitamins for all sea creatures.

PROTECTED BY THE CAN

Whenever opened, there is all the flavor, all the firm tenderness and all the nourishment of the fresh fish. Few families of the inland states realize the genuine value of meat from the sea, containing all the proteins, superior fats, plus mineral matters well known as necessary to build the body of youth and keep that of the aged in repair.

"It should be emphasized that marine products represent, potentially, a great food industry. They represent a specialized food for man and beast. They are diversified source of nutritional requirements in our national dietary. They represent man's principal opportunity to replenish and compensate for the increasing deficiency of foods obtained from land areas. These land areas are constantly being depleted of their mineral elements through countless centuries of soil erosion. It is obvious then that man and his civilization must depend in the future to an ever increasing extent upon foods from the sea to supplement the complicated and artificial requirements of a balanced diet."

FISHERIES REVIEW

In addition to the halibut and cods, Washington's deeper waters provide other bottom fish which are gaining annually in importance—flounders, soles and skates altogether they produced 5,500,000 pounds, valued at \$208,000 in 1930.

Among the miscellaneous fishes that swim Washington waters are the herring, pilchard, anchovy, shad, smelt, perch, sturgeon and carp. The silver smelt of Washington reach annually 1,824,087 pounds with a revenue to the fishermen of over \$26,481.

GAME FISH

The game fish off the shores and in the streams of Washington are the trouts, the steelhead, rainbow, Eastern brook, cutthroat and silver salmon, the charrs, the salmons and whitefishes, basses, crappies, sunfishes, perches and catfishes, giving the angler not only sport and recreation, but food. Here, too, are the octopus and squid now being caught on a considerable scale in Puget Sound waters. These two famous members of this furious fish family are keenly appreciated by many world citizens other than Europeans and Orientals with whom they have always been popular. In the past decade the average value of the octopus catch per year has been \$4,670, ranging from \$1,500 to \$8,335. It is quite evident that both octopus and squid fishing are capable of greater development for both fun and food.



Digging Clams Can Be an Exciting Sport.

FORAGE FISH

Then there are the forage fishes, those that are eaten by the greater food and game fishes such as the chubs, suckers, squawfish, chisel mouth, roach and bullhead. This group furnishes the basic food supply for the bass, perch, sunfish, trout and some fresh water salmon. In salt water, the blennies, eel pouts, sculpins, perch, sand lance and others form the main items on the menu of the commercial and sport fishes.

SEAWEED

Bordering the Washington coastline are fields of kelp and other seaweeds which are being used in a number of industrial ventures, including food for man and beast, and fertilizer for his leached-out lands.



In regions remote from the sea and without refrigeration, the family table can still carry steaks cut from the fish as it came dripping from the salt sea waters to be placed fresh in the can.

SHELL FISH

Although oysters, clams, crabs, shrimps and scallops are at home in abundance on Washington's Puget Sound and Pacific tidelands, it is the oysters that are famous country-wide for their flavor, quality, tender texture and unusual ability to stand up after canning.

Several varieties of the succulent clams, the hard-shelled or butter clam soft-shelled or Cape Cod clam, the aristocratic razor clam and the long-necked geoduck are tidbits for the palate. This interesting family of bivalves includes the scallops, mussels and Pacific cockle. Just around the corner are the shrimps and crabs, popular crustaceans full of promise and performance.

Suffice it to say, Washington waters are actually teeming with food fish ranging all the way from the mighty halibut weighing hundreds of pounds to the tiny Olympia oyster, all of which are literally alive with valuable mineral salts leading to the good health of both man and beast.

Consideration must be given to the work of experimental farms connected with British Columbia universities and the experimental stations of our own state universities which have abundantly proven the value of fish meals in poultry foods and its usefulness as a mineral supplement to dairy cow rations.

The United States Bureau of Fisheries and the Bureau of Chemistry and Soils have shown that the addition of meal from sea weeds, particularly the kelp, augment in a high degree all usual grain foods given domestic animals and household pets.

A great new industry is growing up in Washington to answer this demand of foreign and interstate trade for these products, as sea foods for domestic animals.

The most perfectly nourished creature known to science or produced in nature is the fish, for it spends its whole life literally swimming in a physiological solution of all the elements for bodily growth and life itself. All the wasted radiations of the universe, all the products of the earth are carried in rivers down to the sea. There in Nature's great reservoir of all chemical food elements, is the lime and phosphorous for the growth of bone, the sodium, bromine and phosphates for nourishment of nerves, the manganese, the magnesium, the copper for the companionship of iron to kindle the fires of life, the iodine for the thyroid. In the salt water of the ocean are these elements plus all the others, in similar proportions as found in blood and body fluids.



Catching Smelt on the Ocean Beaches.

By the free consumption of fish, oysters, clams, crabs, any and all sea foods, not merely dripping with, but soaked in sea water, man opens up the foremost channel through which they, and all the normal tissue salts, may be introduced into his own hungry system.

In the sea there is and can be no deficiency! Sea foods are capable of supplying all the elements that are necessary in our food whether we know what they are or not! And Washington leads the Union in the production and marketing of sea foods! Through her ports pass 200 different edible and popular varieties.

The five species of Salmon, that royal table fish, the "King" of sport and romance the chinook, red, silver, pink and chum, together lead the canned fish commerce of the world. Even in the freshly frozen state these are shipped by hundreds of tons to nearly every part of the nation from the ports of Washington.

Washington's abundant and increasing supply of the famous halibut is of national importance to lovers of fish. With a yield in 1933 of 46,761,909 pounds from all sources, Seattle became for the second consecutive season the larg-

est halibut port in the world. Fruitful nature cannot keep pace with improvident man. With the Atlantic halibut almost exhausted, the Pacific International Halibut Commission called on science to protect halibut propagation on the Pacific, and by limiting the annual catch of this, the largest flat fish, our great fishing banks are gaining in halibut population every year.



Always a popular food fish because of its large savory slices of tender meat, the halibut makes another bid for commercial importance. In Washington a big new industry is developing in consequence of the higher medicinal values found in halibut liver oil.

More than three-fourths of the annual catch goes to Washington coast cities and these cities ship 12,000,000 pounds back to Boston and New York as well as 4,000,000 pounds to Chicago.

Of the entire season's catch of COD almost half is salted. The distribution of fresh cod does not spread far from home. The Black Cod, the Red Cod (local Red Snapper), and the larger Ling Cod are very popular fresh fish in all local markets. Gaining rapidly in a deserved popularity, the abundant Ling Cod in boneless filet form is reaching farther and farther along the eastward refrigeration routes.

The Black Cod, also known as Sablefish, travels to the consumer, fresh, frozen and salted. Even to the Hawaiian Islands, every ship from Washington ports carries thousands of pounds of this salted tidbit of the northern sea.

Down to the sea the rivers and brooks carry all the leached-out wealth in the wastes of the world, and over the tide flats and along the estuaries of these water courses, the oyster sets himself as a little organic smelter to transform the inorganic particles of the earth into the mineral-laden glycogen of his luscious body.

Long years ago, chemists then in the Bureau of Chemistry of the U. S. Department of Agriculture said, "The medicines of the future will be in the foods of the people." Nowadays, physicians are coming more and more to endorse this curative principle that is in foods, and to realize that a great mass of the ail-

ments of man, the medication of which has been their steady income, are no longer considered curable by drugs but only through food adjustments to meet the deficiency needs. The Food Research Laboratories of South Carolina place the oyster well in the lead as a food of predilection in the dieting of the anemic because of the abundant iron in its little body.

The University of Wisconsin has shown that all the iron that may be concentrated in any food will not relieve anemia unless it has companionate relations with copper,

The University of Kentucky proved long ago, that even to deprive plants, like spinach and lettuce, of manganese would produce anemia in them. And it is a matter of common knowledge that to deprive humans and other animals of iodine in their food is certain to induce goiter. As a carrier of iron, copper and iodine the oyster is at the top in sea foods, and the Carolina Food Research concludes its report by saying, "The effectiveness of the oyster in curing nutritional anemia may be accounted for on the basis of its iron, copper and manganese content."

OYSTERS RICH SOURCE OF THE IRON-COPPER BALANCE.

It is known that after the nursing period of young mammals is past, some supplement to milk is necessary to supply that peculiar complex of iron, copper and manganese necessary to ward off anemia.

Research laboratories demonstrate that the oyster is more nearly a complete food than anything except milk. Certainly, science shows that the oyster is a peculiarly valuable supplement to milk. The oyster is a regular little



Low tide showing a vast field of oysters at Willapa Harbor, where oyster fields yield one of the largest cash crops.

living smelter when it comes to turning out such chemical food elements and normal tissue soluble as the salts of iodine, iron, copper, manganese, etc. Oysters add abundantly to the phosphorus and calcium of milk. Between the two of them, milk and oysters have an abundance of vitamin D with a helping hand from A and C, to insure a proper placing of these mineral solubles.

CALCIUM BALANCE

Science has been showing that a proper calcium balance, to keep the blood stream sweet is the factor maintaining a sweet disposition.

Popular opinion still clings to the idea that foods rich in phosphorus like milk and oysters are great food for the brain.

Perhaps that is why Russell Smith, writing in the American a few years ago, said that American culture would reach its peak on the North Pacific Coast, for we raise different and bigger oysters here than on the Atlantic, and as for milk, every Dairy country in the world sends money into the STATE of WASHINGTON to buy sons and daughters of our famous cows.

The Pacific oyster, being noted for its firmer and more stable cellular structure, Washington is bound to lead the world in the canned oyster commerce. The cellular membranes are definitely more clearly outlined and this structural strength holds up form and bulk when canned in a shape nearly like the fresh oyster.

Dr. A. E. Hopkins, in explaining why they are nicer for canning purposes, superior in texture and flavor, says that in the eastern oyster the cell walls break down and the gelatinous matter exudes, hence they are inclined to shrivel when canned. In the transplanted Pacific or Japanese oyster the cell structures apparently remain intact to a greater degree and hold the gelatinous matter within the cell walls.

From Puget Sound to Willapa Harbor, is the ideal climate for the Pacific oyster; the saltiness for feeding is better; they have more food and being warmer there, the oyster feeds longer periods. That explains their quick growth and extreme fatness.

Oysters were native to the bays and sheltered tidelands on the Washington coast north and south of Grays Har-



Harvesting oysters on Puget Sound. During high tide oyster "spat" is sown broadcast like wheat. At harvest time, during low tide, the mature oysters are picked like potatoes.

bor; but like the threat to the halibut industry, fruitful nature fell before the avarice of improvident man and an old time industry was exhausted. On the southern arms of Puget Sound a small oyster still persists in profuse production. No more delicate marine tidbit was ever handed forth to titilate the carnal appetite of epicurean man than the little Olympia oyster. Depletion of these beds is being zealously guarded against the wastes of an advancing industry and encroachment of avarice.

The profusion of sea foods along the beaches of Washington has been spoken of by an internationally known biologist in these words: "Why, this beach is lousy with them and they are still more numerous down on all the beaches of the whole Grays Harbor country, to which they were first brought from Cape Cod." He was speaking then of the soft-shelled clam which is the same as the Cape Cod clam, preferred to many others because not so tough.

The evergreen shores of Washington bordering Puget Sound and the Pacific are literally haunted by the hard-shelled, soft-shelled and razor clams in generous quantities. In the clam family the razor is the aristocrat, possessing a tantalizing appeal to the palate of the epicure.

Another is the giant geoduck with elusive neck a foot or longer, and a shell half a foot in diameter, weighing often three to six pounds each. The geoduck burrows three to four feet, but his appetizing meat makes him a prize package worth digging deeply for.

Literally under foot in this interesting family of bivalve mollusks are scallops, mussels and Pacific cockles, at home in Washington waters, luscious morsels for man.