

### Oysters the Most Valuable Water Crop

(By Hugh M. Smith, United States Commissioner of Fisheries.)

With the coming of September the oyster season opens over a large section of the United States, and for a period of eight months the appetizing bivalve reigns supreme as the most extensively consumed product of the water; but millions of the people who eat the oyster know little or nothing of its life history or of the vast industry that the oyster supports.

Of all the products of the water, oysters are, with the single exception of the sea herring, the most important to the human race. They owe that economic preeminence to the fact that they have high food value and that they are palatable, cheap, widely distributed and easy to cultivate.

Oysters occur in greater or less abundance on the shores of all temperate and tropical seas, but the supply in the arms of the North Atlantic Ocean exceeds that in all other waters combined. There are at least a hundred different kinds or species of oysters, with a wide range in habits, flavor, shape and size. All the oysters on the eastern and southern coasts of the United States belong to one species, which has, however, many local varieties; the little, native oyster of the Pacific States is of a wholly different species.

In about thirty-five countries oyster farming is a special industry. The annual oyster crop of the world now amounts to more than forty million bushels, for which the fishermen and planters receive about twenty-five million dollars. The United States furnishes nearly ninety per cent. of the crop.

Few animals are so voracious as the oyster. It is not able to change their position. When the temperature, density, tides and currents are favorable, the floating young go to the bottom and become attached to the shells of old oysters or to any other hard surfaces that may be present; but all that fall on a muddy or soft sandy bottom or on slimy surfaces soon perish. Modern oyster culture aims primarily to save the free-swimming young, and oyster planters therefore provide clean shells, tiles, and other hard objects, to which the "spat," as the young oysters are called, can attach themselves.

Oysters have been under culture longer than any other shellfish. A simple type of cultivation flourished in China at a very remote period and probably antedated by some centuries the beginning of oyster culture in Italy, which was about the year 100 B. C. With the increasing demand for oysters, they came to be cultivated in all the important maritime countries of Europe. In other parts of the Old World and in the Western Hemisphere, the growing of oysters by artificial means has become an important industry, so that to-day oysters are the most extensively cultivated of all aquatic animals.

The human animal is not the only one that looks with favor upon the edible qualities of the oyster. At every stage in its career it is attacked by a horde of dangerous enemies, some of which are most destructive after the oyster has put on its stoutest armor. Before the young oyster attaches itself, it is extensively consumed by adult oysters and various other shellfish, as well as by fishes that strain their food from the water. When the oyster shells its shell, a new set of shellfish enemies, provided with drills, begin their attacks and extract the soft parts through minute holes that they make in the valves.

The oyster growers of Long Island Sound and adjacent waters suffer heavy losses from the inroads of starfishes, which, moving in waves over the bottom, devour every oyster in their path. In a single season they have been known to destroy in one state several hundred thousand bushels of marketable oysters. It seems strange at first that a weak creature like the starfish should be able to prey on an animal so strongly fortified as an oyster. The starfish attaches itself to the lips of the oyster shell and exerts a steady and long-sustained suction with each of its numerous small suckers. After a time the powerful adductor muscle of the oyster becomes fatigued, the valves open, and the starfish inserts its stomach, and devours the helpless oyster at leisure.

Other enemies of the grown oyster are fishes with powerful jaws armed with crushing teeth. On the Atlantic coast the most destructive fish is the black drum, a school of which may virtually clear out an oyster bed in one night; on the Pacific coast a species of the sting ray is the chief offender.

The United States is particularly fortunate in its oyster supply. The output here is larger and more valuable than elsewhere. Moreover on account of the relative low cost

of oysters to the consumer in the United States, the consumption in proportion to the total population is greater than in any of the other leading oyster-producing countries. Our annual oyster output is worth about seventy million dollars to the producers. The yield has increased severally per cent. in quantity since 1880 and under the favorable conditions that now prevail is becoming larger every year. In certain states the limit of production has perhaps been reached, but in most states the industry is capable of greatly expanding. In recent years the oyster crops of the South Atlantic and Gulf States have shown a noteworthy increase, chiefly because their oyster resources have come to be more fully appreciated and because oyster culture has been more liberally encouraged.

The seven leading oyster states are Rhode Island, Connecticut, New York, New Jersey, Maryland, Virginia, and Louisiana, in each of which more than a million bushels of oysters are annually marketed. Virginia leads in production, with more than six million bushels a year; Maryland and Connecticut follow. As regards the value of oysters taken, Connecticut and New York lead, with crops worth two and one half million dollars each; Virginia and Maryland come next.

The body of water that produces the greatest number of oysters in the United States, or, in fact, in the whole world, is Chesapeake Bay. The latest statistics of the oyster industry show that it has an output of more than eleven million bushels, valued at about four and a quarter million dollars, which is twenty-five per cent. of the value of the entire oyster crop of the United States. In recent years the oyster yield of Chesapeake Bay and tributaries has been considerably less than it was formerly; yet the industry there is to-day in a healthier condition than ever before. The reason is that, whereas in earlier years, a very large portion of the product was obtained from public beds, which were becoming rapidly depleted, now a steadily increasing proportion of the oyster output is taken from grounds under private control.

In Virginia about one half the value of the state's oyster industry is contributed by grounds under cultivation—a condition that 25 years ago would have been regarded as almost impossible. For at that time Virginia and some other states, believing that the oyster industry should depend on natural beds and restrictive laws, discouraged oyster planting on public grounds.

That policy was in strong contrast with that of New York and Connecticut. Those states had cut loose from the old fetish of the sanctity of public oyster grounds; they leased or sold those grounds for planting purposes and assumed the front rank in oyster growing, although the natural advantages of Long Island Sound for the industry were much inferior to those of Chesapeake Bay.

The great area of her oyster beds gave the United States an early lead in the oyster industry; but to maintain that lead she has had to adopt oyster culture as the only certain means of insuring a crop that will increase every year.

Of the oysters now marketed, 50 per cent. come from private or cultivated grounds. Owing, however, to the better quality of cultivated oysters, the product of the private beds represents 70 per cent. of the total value of the yield of market oysters.

Wherever the oyster-growing industry is active and the demand for oysters great, it becomes necessary sooner or later to resort to artificial measures in order to maintain the supply. Fortunately, oysters thrive under artificial cultivation. But the industry has suffered in important regions where the states have failed to adapt themselves to new conditions. Nowhere in this country is there any excuse for continuing to rely on public oyster grounds as sources of market supply; to perpetuate them only delays progress and impairs prosperity. To discourage or prohibit individual control of land for farming purposes would not be less absurd than to prevent a person from acquiring submerged lands for oyster growing. It is chiefly because most states have accepted more rational standards of oyster culture that our oyster industry is so prosperous to-day.

When reduced to its simplest terms, oyster culture consists in (1) acquiring suitable submerged bottom, (2) cleaning and preparing that bottom for the growth of oysters, (3) sowing on it shells or other material ("culch") to which the young oysters can attach themselves, (4) insuring the production of larval oysters by the proximity of beds of adult oysters, (5) protecting the oyster beds from enemies, (6) transplanting as occasion requires to prevent overcrowding, and (7) culling and sorting for market.

A prevalent practice among oyster growers in some regions is to transfer oysters from salt to brackish water for a short time before shipping them to market. The oysters rapidly absorb the fresher water, and the more saline fluids in their tissues rapidly pass out. That process, known as "plumping," "floating" or "fattening" makes the oysters swell to the full capacity of the shell, but adds nothing to their food value or flavor. On the contrary, it extracts certain nutritious ingredients and replaces them with water. Chemical tests show that that sadly misnamed process of "fattening" although it increases the weight of the oysters from ten to twenty per cent., deprives them of from ten to fifteen per cent. of their food value.

More serious, however, than the

loss of nutritive properties is the danger from contamination when the floats are situated near sewers or other sources of pollution. It is well known that oysters can take in disease germs with their food, and these germs, when they pass into the human body, may cause disease. Epidemics of typhoid fever have been definitely traced to "floating" oysters that were undoubtedly innocuous when taken from the saltier water.

The United States Government has done much to promote the oyster industry of the country. It has made studies of the oyster's life history, on the same accurate knowledge of which protection and cultivation must depend; it has investigated conditions and methods of oyster growing in other countries, and it has surveyed bottoms in the various states on which oyster planting might be conducted, and has thus increased and improved the output and at the same time has afforded a revenue to the states from the sale or lease of the grounds.

Especially noteworthy has been the outcome of certain experimental plantings in Louisiana. In Barataria Bay, where there had previously been no oyster industry, experimental beds laid out by experts of the Bureau of Fisheries yielded marketable oysters at the extra-ordinary rate of fifteen hundred to two thousand bushels an acre in two years from the time that the "culch" was deposited on barren bottom. The oysters were of high quality and sold in New Orleans for four times the price of oysters taken from natural beds. The result has been that the state has leased to oyster growers all land available for the purpose.

#### THE TORONTO ELECTION.

But the big joke of the contest in South-west Toronto is the fact that Prohibition is not an issue, and, indeed, it never was an issue in any political contest in this province. It was not an issue two years ago last spring, because "Banish the Bars" was not Prohibition such as this province will have on and after the 16th of next month. Last spring the question was definitely settled by the Government of Ontario until after the war, when a vote will be taken and a final decision reached. To suppose that the Government would change their attitude, deference to the views expressed in the South-west Toronto bye-election, is to give them credit for a species of asinine stupidity they certainly do not possess. Whatever the result in South-west Toronto, those favoring prohibition do not need to lose any sleep.—Burks Falls Arrow.

#### BRITISH BATTLE PICTURES

Picture postcards from official photographs of battle scenes in the great British offensive, will in a few weeks be within reach of all throughout the Empire. The British official bureau announces that for "the exclusive right of making and selling, in the United Kingdom postcards from photographs taken by official photographers on the Western Front and issued by the Press Bureau, the tender of the Associated Newspapers, Limited (the London Daily Mail) has been accepted. The terms offered by the successful tenderer are half the net profits of the undertaking with the minimum payment of five thousand pounds." The money will be devoted to military charities. The Daily Mail and the Overseas Daily Mail are taking steps to place the postcards on sale throughout the whole Empire. The War Office has given unlimited facilities to the photographers in the fighting since the first of July, and their pictures, taken amid the smoke and roar of battle, are a unique record of the Great Advance.

The pictures will be reproduced in silver-print style (reproduction photograph), in photogravure and in colors. They are to be made up in packets of eight postcards, for sale at 6d. a packet.

Announcements may be looked for as to the arrangements for sale in the Dominions, but inquiries may be addressed to the War Picture Department, "Daily Mail," Office, Carmelite House, London, England.

#### THE WESTERN FAIR LONDON, ONT.

Queen's Park is a very busy place these days where many men are engaged preparing the buildings for the big Exhibition, which takes place September 8th to 16th. The management of the exhibition have been considerably handicapped with the work, but it is hoped that after this week nothing will be allowed to interfere with the preparations for the exhibition.

There will be several new features this year. The Dominion Government is putting on a demonstration in the new Process Building of the care of Eggs, with a view to increasing interest among the farmers in the care and production of eggs. There will also be an exhibit of Wool put on by the Government with the same object in view.

There has been a good demand for space, and judging from present indications every available place will be filled. If any space is required for an exhibit, or concession, application should be made to the Secretary at once. If entries are to be made, it should be attended to at once, and not left until the last day. All information at the General Offices, Dominion at the Savings Buildings, London.

#### SPEED UP THE MUNITIONS

"The deliveries of munitions from Ontario are running far behind the quantities promised, and we are seriously apprehensive if the existing conditions cannot be bettered."

Such is the statement of the Imperial Munitions Board to the Provincial Organization of Resources Committee, which has been conducting a preliminary investigation into labor conditions in munitions plants in Toronto, Hamilton and other Ontario cities.

This shortage in production has been largely due to the fact that there has been a very inadequate supply of labor sufficiently skilled to make deliveries effective. This has hampered factories turning out steel forgings and component parts, which, in turn, have adversely affected operations at the machining and assembling plants. But these, also, have been unable to make deliveries as scheduled, even when they are fully supplied with forgings and component parts, largely owing to the shortage of labor.

The Provincial Committee, therefore, in bringing these facts to the attention of the public, desires:

1. To call the attention of all those engaged in the munitions and allied industries to the importance of their service and the great responsibility resting upon them as individuals to co-operate and do all in their power to secure a steady and increased supply of munitions, for our forces at the front.

2. To urge upon all those who are ineligible for overseas service and who are anxious to voluntarily do their best in this great struggle, especially those now engaged in non-productive work or in the production of commodities which are luxuries more or less, to consider employment on munitions as their next best service to going overseas.

3. To urge Women's Emergency Corps to register women for munition work or for work which will release men for the munitions industry.

There is no need to emphasize the importance of the highest possible production of munitions. The lives of our boys and the success of their endeavors depend upon it. Statements from the highest authorities in Great Britain and from the front bear no small tribute to the part that munition workers are playing in bringing the war to a successful conclusion.

The officer commanding a brigade of Canadian artillery, who returned from the front last week said: "The Germans will never break through now. Before they had munitions, guns, equipment—everything but the 'nerve.' All we had was 'nerve.' But now we have good guns and plenty of good ammunition. Whereas formerly we were limited to 10 to 15 rounds a gun a day, now we use 500 to 1,000 a gun, and one week lately we kept going all week night and day. It's all important that the supply of munitions be kept up and increased."

Efforts to use women in munition plants are meeting with good success. In a number of places women have registered, and are waiting to be called to work as soon as necessary arrangements can be made. In Welland, for instance, 95 women responded last week to the call of a factory there which needs 150 to 200 women. Fifty per cent. of those who answered the call had never been in regular employment before.

Wages in munitions plants should be such as to attract a large number of workers. Four to seven, and even ten dollars a day is not uncommon for men employed on the piece-work basis.

"If you can't be the man behind the gun, be the man behind the man behind the gun."

#### THE QUACK BUSINESS

Patent medicine men haven't got a monopoly in the "quack" business. There are quacks right in the centre of the "holy of holies" of

Clean, smokeless and odorless oven means perfect cooking and baking. This is assured by ventilation and the nickel-coated non-rust steel lining in

## McClary's Pandora Range

It won't be hard to decide what you want in your kitchen after I show you the Pandora's special features.

Sold by Lenahan & McKechnie

medicine, some of them with a string of initials after their names like the tail of a kite. These chaps stand on their dignity and get mightily huffed if you call them plain "Mr." instead of "Dr." although they are no more entitled to have their calling dinned into people's ears every time some one addresses them than have those of other professions. This in itself is a sort of quackery, although it doesn't cost as much as the kind that is advertised at so much per inch or line in the newspapers. This particular kind of a quack is a parasite who seeks his prey chiefly in the large centres of population, although occasionally found in out of the way places. But wherever found, he is always fishing for suckers, and, sad to relate, the latter are always plentiful. It is this type of parasite whom the promoters of race suicide find so accommodating and useful.—Race suicide? Does that shock you? Why, my dear sir, if you knew half of what any reputable doctor could tell you, you would know that race suicide is almost universal—that there is more or less of it in almost every community.—Burks Falls Arrow.

### Ford Car Prices

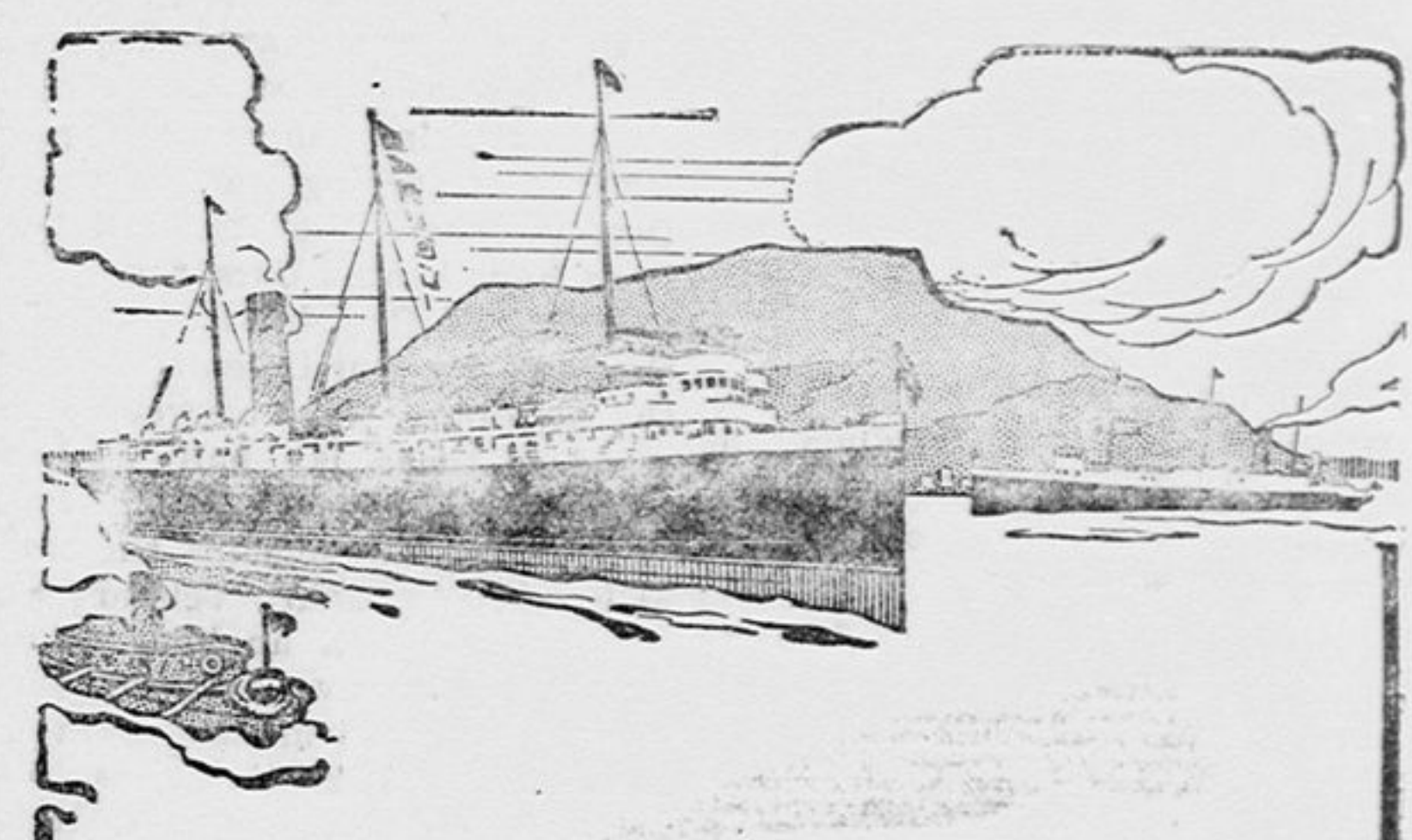
Effective August 1st, 1916 the prices of Ford Cars will be as follows:

Touring Car	\$495.00
Roadster	475.00
Chassis	450.00
Couplet	695.00
Town	780.00
Sedan	890.00

These prices are all F.O.B. Ford, Ontario.

These prices are guaranteed against reduction before August 1, 1917, but not against advance.

C. Smith & Sons Dealers, Durham



### A FIVE DAY HOLIDAY on the GREAT LAKES

And you will feel good, because among the islands of Georgian Bay, the green banks of the St. Mary's River and the expanse of Lake Superior, fresh, cool breezes will blow new life into you. The

#### CANADIAN PACIFIC

Clyde-built Greyhounds, with their Verandah Cafe, perfect appointments and cuisine, are as good as Atlantic Liners. Express Steamships "Assiniboia" and "Keewatin" leave Port McNicoll every Tuesday, Thursday and Saturday for Port Arthur and Fort William. Round trip 5 days.

Tickets, information and reservations from Local Agent, or W. B. Howard, District Passenger Agent, Toronto, Ont.

### Nyal's Massage Cream

gives that youthful glow to the complexion.

35c a Jar

### Nyal's Tooth Paste

cleans and beautifies the teeth. You'll like the taste of Nyal's Tooth Paste.

25c the Tube

You will find our stock of

### School Books and School Supplies

right up to the minute

Often the cheapest, Always the best.

### No Failure with Your Pickles

If you use our spices.

Parowax 5c and 15c  
Bottle Wax 10c  
Rubber Jar Rings, the good kind.

### Water Glass

for preserving eggs, one 15c can will preserve 12 doz. eggs. No trouble. Perfect satisfaction.

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