

About the House

DOMESTIC SCIENCE AT HOME

Tenth Lesson—Sugar.

Cane sugar is the crystallized product of the juice extracted from the sugar cane. The cultivation and manufacturing of sugar was introduced into Europe from the East early in the ninth century. Venetian historians state that sugar was imported by their countrymen from Sicily in the twelfth century.

The first European plantation of note was at Valencia in Spain. Since its cultivation at this time, it has been grown extensively in every semitropical country on the globe.

The Manufacture of Sugar

The canes are gathered, freed from all loose leaves, and then passed through heavy rollers, which crush them into a pulp, thereby extracting all the juice from the cane. This juice is of a sweetish taste and muddy brown in color. It is then collected in a reservoir, and there treated by special processes. After this it is run into large caldrons, where the process of obtaining the sugar commences.

While the temperature of the juice rises, as heat is applied, a thick scum comes to the top. This scum is removed by running out all the cane juice through a spigot. In this way the scum is left in the kettle. The juice is further processed until the sugar crystals begin to form, when it is run into prepared vessels and allowed to cool. The surplus syrup is drained off, the residue remaining is the raw sugar of commerce, which must be refined before it can be used.

From every hundred pounds of sugar cane, about sixty to seventy-five pounds of cane juice is extracted.

The Use of Sugar in the Body

Sugar is an important energy-giving or fuel food. It is soluble in cold

water, and readily dissolves in hot water. The digestion of sugar commences in the mouth, and is finally completed in the intestines. The process of the digestion of sugar is comparatively simple.

When used in moderation, sugar is beneficial, and a producer of heat and energy in the body. Because of this it should be used sparingly during the warm weather. This is one of the reasons why heavy rich desserts are injurious to the health during the heated season of the year. However, it is valuable in cold weather because it quickly furnishes the required energy and heat. Explorers in cold regions carry large quantities of sugar.

Sugar may be cooked by adding a certain percentage of water until it forms a hard, clear candy; this is called barley sugar. Heated beyond this stage, it becomes caramel or burnt sugar.

Mothers should pay particular attention to the source of supply of the candies that their small children buy. Cheap and dangerous substitutes used in candies may prove fatal to the little ones. It is very easy and pleasant to make at home the few simple candies that the children crave.

Beet Sugar

In the middle of the eighteenth century it was found that sugar could be obtained from beets. About 1769 the first factory was established in Austria for the purpose of manufacturing beet sugar. The beet from which the sugar is obtained flourishes in moderate climates and is not hard to raise. Other known sugars are fruit sugar, which is found in fruit; sugar of milk, found in milk; corn sugar, obtained from corn, and maple sugar from the sap of the maple tree.

Home Canning

September is the best month of the year for the forehanded housewife. This is the real canning season. Now is the time of preparedness for winter.

Green Tomato Preserve.—One-quarter peck of green tomatoes, three lemons. Scald the tomatoes and then remove the skins. Cut into quarters and put in a preserving kettle. Cut the lemons in half and then remove all the seeds. Chop fine and then add to the tomatoes and also the following: two cups of water, three pounds of sugar, one tablespoonful of ginger, one tablespoonful of cinnamon, one cup of raisins. Cook until very thick. Seal in sterilized jars. Cover with paraffin and then store in a cool dry place. Parboil lemon until tender before adding to the tomato mixture.

Spiced Plums.—Rinse the plums in plenty of cold water and then remove the stems. Prick several times with a fork to prevent bursting. Cook for twenty minutes in a syrup made of four pounds of sugar, one quart of water, one-half ounce of white ginger root, one-half ounce of stick cinnamon, one-quarter ounce of whole cloves, one-quarter ounce of allspice, one tablespoonful of blade mace. Tie the spices in a bag and cook the syrup for ten minutes before adding the plums. Bring to a boil and cook gently for twenty minutes. Seal in sterilized jars. Test for leaks and store in a cool, dry place.

Ginger Pears.—Use your favorite variety of pears. Peel and then cut them into quarters if large and into halves if small. Put the fruit while

peeling in a pan of water to keep it from discoloring, until the entire amount of pears is prepared. Cook the pears until soft in clear water. Drain and use one quart of this water, the water in which the pears were cooked, and also two pounds of sugar, thinly pared rind of two lemons, two ounces of white ginger. Cook for ten minutes and then add eight pounds of prepared pears and cook until the pears are transparent. Seal in sterilized jars and then store in a cool place. All ginger root used in pickling and preserving should be well washed and then sliced very thin.

Peach Jam.—Use soft ripe peaches of the yellow variety. Peel, slice thin and then put in a preserving kettle. Add two cupfuls of water and ten pounds of prepared peaches. Cook until very soft. Mash with a potato masher and then rub through a fine sieve. Measure and return to the kettle and add one cupful of sugar to every two cupfuls of prepared pulp. Cook very slowly, stirring constantly to prevent scorching, for one hour. Try a little of it in a saucer. It holds, that is if it does not spread and run, then fill it into sterilized glasses and cover with paraffin. Store in the usual manner for jellies. Use an asbestos mat under the kettle to prevent burning. This jam should be a beautiful golden color. It is a delicious accompaniment to hot or cold roast fowl or game and is equally delicious with chicken salad. It is most important to use a porcelain kettle that is in good condition for all pickling and an aluminum or agate kettle for preserving jams.

ers who pass half their time in the war zone, in and out, back and forth, not knowing what moment a submarine is going to come along and send them to the bottom or a floating mine will blow them into bits. It is their business, and they seem to have no fear.

The awful toll of lives at sea since the Prussian submarine campaign started seems to have made little impression on the men who keep ocean commerce open and carry supplies to the Allies—foodstuffs and war materials. They sign up for voyage after voyage without hesitation; their devotion to duty is one of the most remarkable instances of bravery of the war.

They watch land out of sight without a quiver, and then, at sea, they set about with their work just as they did in the days before the war, when icebergs were the greatest dangers to navigation. Now icebergs are friends. The presence of one gives to the seaman a feeling of reasonable safety. Submarines, travelling submerged, try to stay clear of the ice fields.

At night the seamen, when not on watch, take off their clothes and go to bed as usual. They sleep soundly, too, confident that if anything happens they will be saved some way or another. They think it best to conserve their physical energy for a crisis. It is foolishness, they say, to sit up waiting for submarines.

Death in Many Forms.

Those in the greatest danger aboard ship now are the engineers and firemen, who work below the water line in the engine room and stoke holes. They do four and six hour shifts in the dirt and heat, directly in the path of a torpedo if one is fired, or within striking distance of a mine explosion.

Hardly a steamship is hit that there is not loss of life in the engine room or one of the stoke holes. There is always a chance for the passengers, deck crews and officers to get away in lifeboats, to be picked up by naval patrol vessels or to find their way back to land. But it is different with those below the decks.

Aside from the danger of being killed or wounded by the explosion of a torpedo or mine there is the peril of being shelled in a lifeboat, as has been done many times by the Prussians; of dying from exposure after days and nights at sea in rough weather, and of intense suffering from lack of food and water and the possibility of being taken prisoner.

Survivors fortunate enough to be picked up by patrol vessels or passing steamships or to make their own way back to port tell constantly of comrades killed by being shelled in open boats and of innumerable other inhumanities of the Huns. There are scores of instances in which lifeboats have been sunk and their occupants drowned.

Left at the Mercy of the Waves.

Apparently the Prussians want to terrorize merchant crews who dare to brave the kaiser's edict that vessels must not enter or leave British, French or Italian ports. The Prussians hope that the news of torture will spread about the docks and that seamen will stay ashore, where they are safe.

A submarine recently approached a British barque, whose master thought he saw a chance to run away. After a half hour's chase it became apparent that the submarine soon would over-

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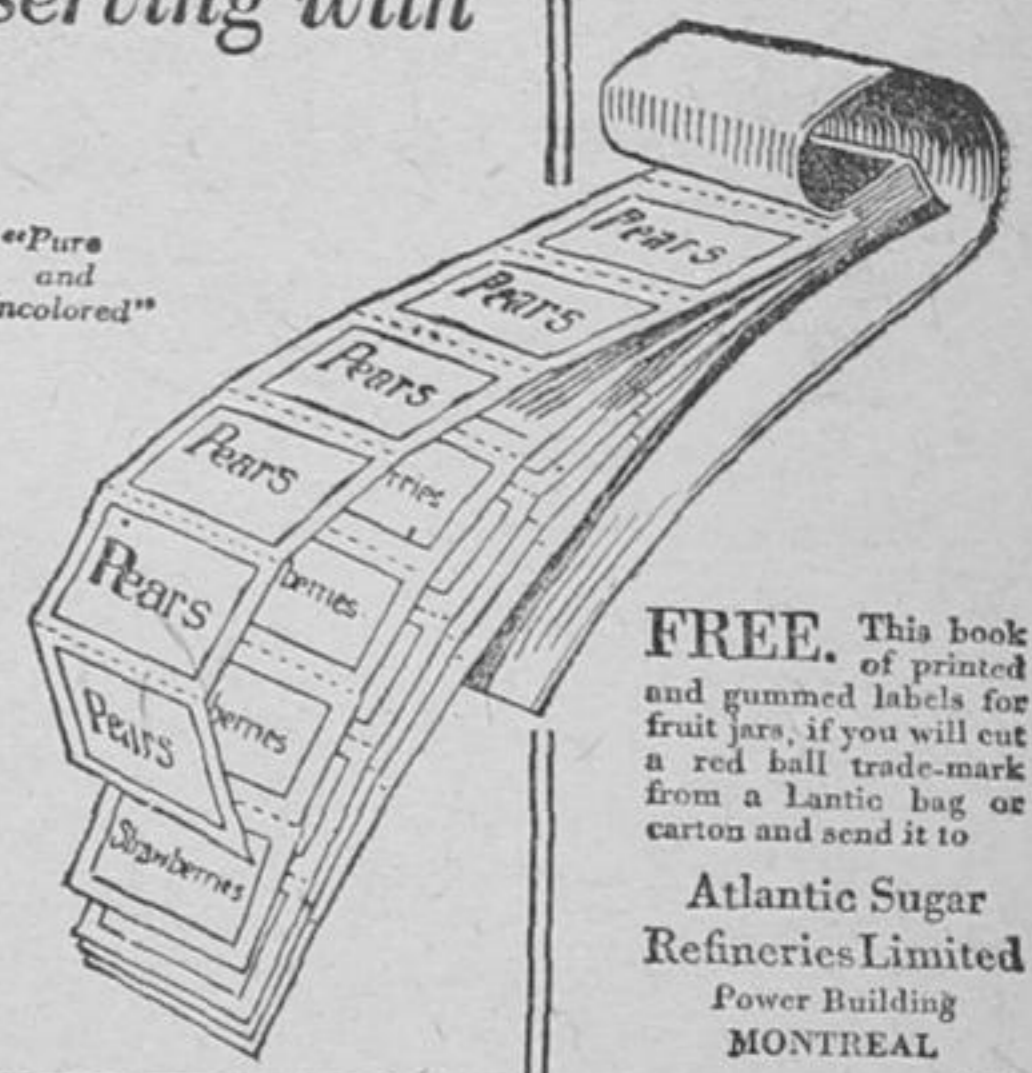
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take the sailing vessel. Two boats were lowered, one by the master, with nineteen of the crew, and the other by the first mate and the remainder, twenty perhaps.

The submarine overhauled the master's boat and seized him as a prisoner, taking him below. Lining the nineteen of the crew on the deck of the submarine, a party of Prussians took the boat and went to the barque, sinking her with a bomb. On the way back to the submarine they threw out of the lifeboat all the fresh drinking water, all the tinned beef and all the biscuits it contained, together with the sail—the hope of the sailors who might be compelled to drift for days in the open sea. Then the Prussians crawled into the submarine and submerged, leaving the sailors who had been standing on the deck to flounder around in the water and get to their lifeboat as best they could. Luckily, they succeeded, and after a few hours, by mere chance—for they had no wireless to summon help—a mine sweeper came along and took them aboard.

GARDEN NOTES.

Madonna lily bulbs may be planted this month, but most other bulbs should not be set until October.

Protect cauliflower heads from the hot sun, thus: Gather some of the outer leaves over them and tie in place.

Don't take long to throw old blankets, cloths or papers over the tomatoes in the garden when it looks like frost, and may save them for a number of days.

We have had good luck ripening late tomatoes by pulling the vines and letting them lie with the fruit on in an old cool shed. A great many of the tomatoes turned out fine.

Late celery should be cultivated throughout the month or as long as it is possible to get through without damaging the plants. But, remember, the roots are near the surface, and deep tillage will do more harm than good.

Spinach for the early spring market can be sown now, either broadcast, or in drills twelve to fifteen inches apart and one inch deep on well-manured ground. It is hardly possible to get the land too rich for spinach. The hardy prickly variety will winter better than other kinds. On the approach of freezing weather cover with leaves or straw.

Like celery, late cabbage should be cultivated as long as possible. A leaf broken off now and then will not mat-

ter. Fewer will be broken if the cultivating is done during the middle of the day.

Early celery will be wanted the latter part of this month, or the first of next. It should now be "handled"—that is, straightened up and the soil drawn to it with the hoe. If boards, paper or other devices are to be used for blanching, handling is not necessary. A week or ten days after handling more earth should be plowed up to the plants, leaving only the tops above the ridge. If banked too long in warm weather celery is likely to spoil, and it is safer to blanch only as needed to fill orders.

After the first slight frost bulbs of the dahlia, canna, tuberose, elephant ear and Madeira vine should be taken up and stored. When the foliage of the dahlia or canna is frost-bitten, cut off the upper part and leave about six or eight inches of the stem attached to the roots. Aim to remove the roots as a clump and with dirt attached. This is the time the root should be tagged if color or varieties are to be remembered. The best time to dig is in the morning. Then the roots can be spread out in the sun and exposed to the wind so that they will dry well and cure. Be sure that the dirt attached to the bulbs is thoroughly dried before storing in a cool dry cellar. They are best spread out on the floor in one corner, or placed on shelves where it is cool and the ventilation good.

A Unique Service

One of the most remarkable burial services ever held on a European battlefield is described by the chaplain of a Western Ontario battalion. It was that of an Indian killed by a bomb. Sixty Indians, commanded by an Indian lieutenant, attended the funeral. They represented the Mohawks, Oneidas, Onondagas, Cayugas, Missis-saugas, Delawares, Iroquois and Black-feet.

Ancestor of All Pigeons.

Our domestic pigeons are of many varieties, remarkably different in shape and plumage—even, it might be said, in character and habits.

Yet all of them are descended from a single kind of pigeon—the "blue rock."

We have the "pouter," the "fantail," the "tumbler," the "homer"—these and many others. But all of them are derived from the same original ancestor. It just shows what marvels can be accomplished by breeding through artificial selection.

THE MEN WHO MAN THE SHIPS

SAILORS WHO TAKE CARGOES ACROSS THE SEAS.

Show High Type of Bravery and Are Doing Their Part in the Winning of the War.

"When the Germans torpedoed us the first time we got away—smashed up some, but able to make port again under our own steam. Then on this last trip they got us, and the ship went to the bottom with 5,000 tons of sugar aboard and two men killed in the engine room. We had twenty-seven hours in the open boats, but the British patrol picked us up finally.

"I'm going over to the States for another ship. I hope to have better luck next time."

Then he laughed—one of those whole-hearted fat man's laughs—and shook all over. He was a British skipper without a vessel. His ship, of

7,000 tons registry, had been sunk a few days before by a Prussian submarine about two hundred miles off the English coast.

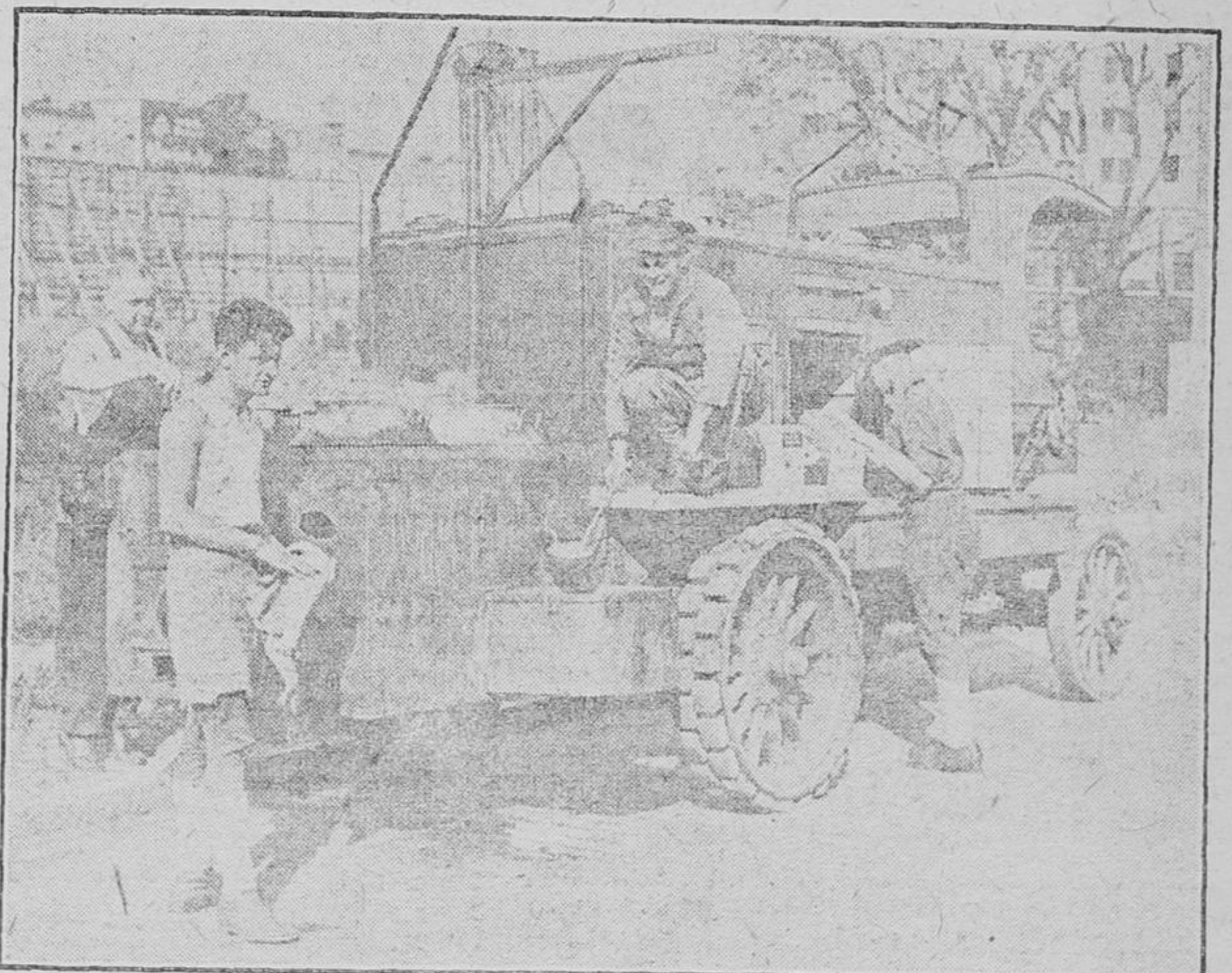
He was in the North Western Hotel, in Liverpool, calmly waiting a passenger steamship that was to carry him to the United States—through the submarine zone again. He was a pudgy, rolly-polly British sea captain of the type always being described in fiction. His face was weather beaten; he was at least fifty-five, and maybe sixty.

"I've been going to sea for forty years," he continued, "and I never had any trouble at all, except once, when I was a second mate aboard a sailing ship, we piled up on the rocks around a lighthouse. Then this submarine warfare came along, and now it's trouble all the time.

"But I'm not downhearted. I'm going to keep on going to sea till the Germans get me or till I die in my bunk or in bed down at my home in Southampton. It's my job to go to sea, submarines or no submarines."

Devotion to Duty.

This skipper's attitude is typical of that of the thousands of ships' officers, seamen, sailors, engineers, and stok-



Motor Kitchen, Latest "Chow Wagon" for Engineers.

The motor kitchen is the latest mode of "chow wagon" for the army. The 22nd Engineers' "cook-house" will follow them wherever they go and always will turn out well cooked grub for them. The motor kitchen has several different departments. There is a refrigerator, a little store house for absolute necessities in cooking, and a small oven besides the range. The "chow" turned out by this model kitchenette has more than satisfied the men. The kitchen costs \$7,000 and was presented to the Engineers by Louis Sherry.