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DEPARTMENT OF THE INTERIOR

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OFFICE OF THE COORDINATOR OF FISHERIES

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The scarcity of seaweed products, essential in bacteriological research and useful in scores of food industries and industrial processes, has become so critical that two laboratories of the Fish and Wildlife Service and at least a dozen State and private institutions are attempting to develop new sources of supply, according to a report submitted to Secretary of the Interior Harold L. Ickes.

Chiefly affected are several species of red seaweeds from which commercial agar is derived, half a dozen brown seaweeds which yield the important chemical known as algin, and the more familiar Irish moss. With imports of most of these marine plants reduced or eliminated by war conditions, the relatively undeveloped seaweed industries of the United States have been called upon for greatly increased production.

Before the war, 92 percent of the agar used in the United States was imported from China and Japan. With this supply cut off, the War Production Board immediately acted to conserve existing stocks for their most essential use - as a culture medium in bacteriological laboratories - by reserving all agar for this purpose. Other prewar uses included the manufacture of dental impression materials, laxatives, emulsifiers, and confections.

The agar of commerce is derived from several related species of red seaweeds which occur in California and Mexico and possibly in other areas along the coast of North America. Technologists of the Fish and Wildlife Service are now investigating the possibility of extracting agar from other seaweeds which may be more abundant.

The Service's laboratories at College Park, Maryland and Seattle, Washington are both engaged in a study of the seaweed problem, the work of the Seattle staff being carried on in cooperation with the Scripps Institution of Oceanography at La Jolla, California.

The agar weed grows on rocks from the tide line to depths of fifty or sixty feet, always in rough waters, and is usually gathered by divers who crawl over the rocks and pull off the weed by hand. A good day's harvest is 1,000 wet pounds. Because of weather conditions, little can be gathered during the winter.

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With European imports of Irish moss or carrageen also affected by the war, the Atlantic coast beds are being worked harder than ever. Irish moss grows in comparatively shallow water from New York northward and is most abundant on the rocky shores of Maine and Massachusetts.

Principal uses of carrageenin, derived from Irish moss, are in the food industries (to stabilize chocolate milk, clarify beverages, and in making puddings) and in the manufacture of certain medicines, paints, calsomines, soaps, and cosmetics.

Fishermen gathering Irish moss in New England work in water as deep as 10 feet, collecting the moss with long-handled rakes. The moss is spread on the beach to dry, but must be piled up and covered if rain threatens, because fresh water dissolves the salts on which the ability to form a gelatinous substance depends.

Several kinds of brown seaweeds collectively known as kelp occur on both U. S. coasts and are harvested principally for the valuable alginic acid they contain. Algin is used to stabilize ice cream and in finishing leather, waterproofing concrete, fireproofing wood, and in the manufacture of camouflage materials.

The seaweeds of the Atlantic coast south of Rhode Island and of the Pacific coast north of California have not been exploited, but because of the quickened interest in unutilized species it is predicted that new industries will be developed on both coasts before the end of the war.

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