and they deserve no respect from their colleagues, and they have influence all out of proportion to what they deserve because they are or have been members of a respectable profession. Dr. Beeuwkes urged the professional scientists to assume more public responsibility and shed their fear of publicity and use all media as avenues for the widespread dissemination of the truth. "As long as the publication of nutrition information remains only within the covers of professional magazines, we are simply converting the converted," she declared.

As examples of matters to which the professional scientist should give closer attention, Dr. Beeuwkes called attention to the use of the magic words "doctors approve" in advertising or promotional material. She also pointed to the fear fostered by those who claim that the soil is no longer able to support us. This, she said, cannot easily be allayed by the nutritionists without the help of those who are specialists in the field of agriculture.

Elmer Nelson of the U. S. Food and Drug Administration contributed to the plea for better education in nutrition and more effective steps to stop the food quacks and faddists. He cited examples of what appeared to be sincere and well intended pleas directed to the Department of Health, Education and Welfare to stop what were described as abuses of the public. Included were demands for laws to prevent the selling of white bread and to stop giving children soft drinks in polio clinics. These and many other ideas often were stated specifically to come from newspaper, radio, or TV promotion by individuals who claimed to be authorities on food and nutrition and who impressed the public through their clever presentations but whose background and records do not support their contentions of authoritative knowledge of nutrition.

Food from Sea Products Continue Expansion

Technologists also hear of new algin casing and high-protein fish flour . . . Uses gaining in frozen food field

NEW YORK.—There is much talk today of "food from the sea" and "bread from the sea," and when three authorities are asked to address New York section of the Institute of Food Technologists on the subject, it must be concluded that industry is according it some attention.

The food technologists heard addresses on the vast supply of food contained in the world's hydrosphere, a supply barely touched, on the striking growth of alginates from seaweed, and on jobs found in food manufacture for Irish moss extractive.

But before that, the technologists ate "tuna frankfurters," made by a Boston seafood company from tuna, fats, nitrate derivatives, and seasoned like Chicago's best meat "franks." As far as taste and appearance went, the tuna product was well received.

Irish moss extractive, also known as carrageenin, can be a very handy tool for food technologists, said Earl C. Jertson, president, Seaplant Chemical Corp., New Bedford, Mass. It first came upon the scene in the mid-thirties through what was then a new industry—chocolate milk. As an agent of suspension, it is extracted from the red seaweed known as Irish moss.

While the exact structure of its carrageenin molecule is unknown, it is believed to be a multiple salt of carrageenic acid. The latter is a sulfate ester of a polygalactan which in the acid form is unstable. Predominant cations found in natural carrageenates are sodium, magnesium, calcium, and potassium. Ammonium and potassium cations have the greatest effect in reducing hydration and form the stiffest gels.

The speaker said the extractive is used in preparing jellies and jams and the gelling system can be used for stabilizing suspensions such as cocoa in sweetened water, or pulp in tomato juice.

Other foods in which this milk reaction is used are ice cream; quick-thick fountain drinks; sausage, cake icing, pie fillings, and milk puddings.

Even more promising, Mr. Jertson thinks, is the frozen food field, owing to its effectiveness in controlling ice crystal growth and probably the growth of sugar hydrates. Fundamental problems, he said, are being studied by the Scottish seaweed research institute and the Canadian National Research Council.

Sausage Casing from Seaweed. Francis J. Weiss, food and nutrition consultant, also discussed seaweed utilization and pointed to a recent development of interest, the manufacture of a new type sausage casing. It is made from Norwegian seaweed, he said, probably *Laminaria digitata*.

In contrast to cellophane skin now used in sausage manufacture, alginate skin is 20 times lighter in weight. It is edible and combines much better with the sausage content. Raw materials will be collected on shores of Norway, dehydrated in processing plants near Kristiansand and Bergen, then shipped to Germany where a factory will produce 22 million yards per month.

Norwegian fishery technologists, Dr. Weiss stated, have developed a free flowing flour from cod and halibut. It contains 90% protein of high biological value which keeps indefinitely, and may be used in foods for protein deficient persons. The World Health Organization sent considerable quantities of it to most deficient areas of central Africa and obtained dramatic results. The Viobin Corp., Monticello, Ill., has used azeotropic distillation to process fish material into fish flour.

The tuna frankfurter, or "Friday franks," are made like regular frankfurters, the speaker said. Tuna meat is ground and fed into equipment which blends it with spices, vegetable oil, and sodium nitrate. The mixture is forced into cellophane casings at rate of about 200 feet per minute.

Production of Alginates. Alginates obtained from west coast kelp, differ from other seaweed products in that they can be manufactured to desired specifications for gelling or viscosity properties, and are cold water soluble. The algin industry which has grown considerably in recent years was described at the meeting by Lloyd B. Rothe, Kelco Corp. The product is obtained from kelp beds, a plant which grows best in water with temperature range of 50° to 70° F. The first product obtained is alginic acid which is treated with metallic compounds, resulting in salts and esters of high polymer structure.

Mr. Rothe said sodium alginate is used principally for stabilizing ice cream, and for its ability to form gels, in puddings, desserts, candy, and water dessert gels, and in milk puddings. Sodium alginates may be converted into nonreversible-type gel products. They are good film formers, especially for coating food cartons, which provides a large outlet. They also have important uses in thickening and stabilizing emulsions used in foods and manufacture of other industrial products.

Francis J. Weiss, food consultant, illustrated his discussion of the food potentials of the sea