

# the **LODE** **STAR**

Charting the course of fisheries development today.

Alaska Fisheries

Development Foundation

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## News to Use

Information is a universal principle at work in the world, giving shape to the shapeless, specifying the peculiar character of living forms, and even helping to determine, by means of special codes, the patterns of human thought. wrote Jeremy Campbell. Information, he said, is the link between matter and energy. An effort to provide a link between the matter of streams and the energy of industry development. This issue of *Lode Star* is packed with news.

Commercial sales at AFDF are of top interest. At press time, 16,000 pounds in samples and sales had been shipped out. See story on page 2.

T. C. Swofford of Alfa-Laval contributes suggestions for improving existing surimi trawler technology. page 2. *World's Nestle of Taste* offers a timely piece about the potential of surimi beyond seafood analogies. page 2.

If you missed the *Formed Foods Symposium* April 1 and 2, you didn't take constant notes, read our review of its highlights. page 2.

The Japanese government through IBPFA has drafted surimi product regulations for foods exported to the U.S. and domestic producers and potential producers are nervous that these will be adopted as U.S. industry standards. page 2.

The first full American surimi crab production line is in full swing in Tacoma, Washington. page 2.

Our information about the world changes the way we lead our lives. If you've got information to share, please contact AFDF. Make a change on changing the world. Sincerely,



## Trident opens Alaska's premier pollock plant

Trident Seafoods at Akutan, on the Aleutian Chain in western Alaska, has announced its purchase of a Baader 182 pollock filleting machine that president Chuck Bundrant hopes will transform his salt cod processing plant into the first successful year-round pollock fillet producer in Alaska.

Trident expects to take delivery of the filleter in August. The \$180,000 West German machine uses robotics to size, head, gut, trim and fillet pollock at 120 fish/minute. It is the first machine introduced in America that promises to make pollock—which are smaller than cod and therefore less economical to fillet—a solid resource for the premium fillet market.

The machine will be only the fourth Baader 182 to be employed in the U.S.; the first was installed at the Alaska Pacific Seafoods surimi production plant, and two more are on Alaskan trawlers.

### A brief Trident history

Bundrant's purchase of the machine reflects a turn away from wet salted cod, Trident's primary product since the 1982 startup of the plant. With assistance from AFDF under its Model White Fish Demonstration Project, Trident built its Akutan plant and then in 1982-83 produced approximately 12 million lbs. of wet salted cod, hoping to sell to Portugal.

Though the production phase was successful, the marketing side was not. Portuguese buyers, knowing they were Trident's only customer for wet salted cod, stalled over the price. During that time the Portuguese economy weakened, the American dollar strengthened, balance of payments became an issue between the two countries, and Portuguese imports of U.S. products were curtailed. Trident's salt cod waited in storage for more than a year while Bundrant flew back and forth from

Please see page 8



# News

## Japan drafts export surimi standards

In the March 27 Lodestar Update, we looked at a recent proposal by the Japanese Frozen Foods Exporters Association to draft a list of product standards for surimi-based foods exported to the U.S. National Fisheries Institute and other U.S. entities have encouraged the idea.

Some in the industry, including AFDF, have objected, fearing these proposed standards may be enforced in this country as well. NFI members seem to believe these proposed regulations will not be adopted for American-made product. Nor is there complete satisfaction with the draft. Under additives, it mentions "one other chemical," a vague and incomplete reference. JFFEA also desires to eliminate water from the ingredients list, a suggestion not supported by U.S. officials.

Below is an update on the issue; The Lodestar encourages dialogue among our readers over these developments. Those interested may submit comments to NFI at 1101 Connecticut Ave. N.W., Washington, D.C., 20036. —Ed.

The Japanese Frozen Food Exporters Association (JFFEA) has drafted a proposed set of "Frozen Surimi Product Standards" which would establish quality standards for Japanese frozen surimi products exported to the U.S.

The proposal has now been written, and was submitted to NFI in April.

The guidelines are being offered by the Japanese government to the U.S. government to answer concerns that there was no way to test imported product to make sure it contained the amount of each ingredient that the label stated. The list of product standards will, if adopted, serve as an agreement between the two governments so that Japanese product will not be held up during importing for ingredients testing.

According to a recent translation by Bill Atkinson, editor of *Bill Atkinson's News Report*, the proposed standards include the following items:

**Scope:** the regulations will cover surimi-based products exported to another country, for consumption in that country.

**Raw product quality:** Processed products must use surimi made from fresh or frozen fish suitable for consumption.

**Additives:** Additives allowed in surimi itself include sugar, salt, sorbitol, compound phosphate salt, and one other chemical. Additives allowed in the end-product include fish or shellfish meat and extracts, flour, binders, coloring, seasonings, preservatives and flavorings.

**Labeling:** All surimi products will use wording similar to "Surimi-based product," placed in a clear and obvious location on the label.

**Contents:** Main ingredients will be listed in order of percent by volume; base fish used in the surimi will be listed; fish/shellfish meat or extracts will be listed using their common names; other additives listed by their most common names.

Amounts of ingredients will be shown in metric terms.

**And also:** Production date will be clearly printed on the container, and all product will be inspected in Japan before shipping.

Before submitting the proposed standards to the U.S. government, the JFFEA now seeks comments on the treatment of water in ingredients percentage labeling. Writes JFFEA secretary general Mr. Inagaki in an April letter: "Among Japanese industries there are strong opinions that water could be exempt from the ingredient list based on the fact that moisture content of the finished products is less than that of pollock or shellfish meat, and about the same as with surimi itself." This suggestion has met much opposition in the U.S.

The Japanese group has also suggested that all product meeting the above standards be stamped with a "Certificate of Quality" before export. While some see this as an attempt by the Japanese industry to control of the U.S. surimi market, surimi product importers see it as a boon in dealing with FDA and Customs regulations which are as yet only temporary in relation to surimi-based imports.

## All-American line in production at Sea/Lite

TACOMA, WA—Sea/Lite Products, Inc. began full-scale production of surimi-based crab products in a new American-made secondary processing plant that produces 4,000 pounds of product a day.

Sea/Lite owner Ken Ostebo announced the first commercial-scale production of Sea/Lite Imitation Crab Sticks and Imitation Crab Salad Meat on April 19. The plant, designed and installed by Ryan Engineering, is the first secondary surimi processing plant in the U.S. to use all domestic machinery.

Ostebo said his products use "no sugar, no MSG, no salt, and 1.28 percent sorbitol." He said he uses only natural ingredients, and 75 to 85 percent real crab.

Ostebo is marketing the crab analogues in both the foodservice and retail areas.

Ostebo said he's also researching other surimi-based products, but was reluctant to reveal any more information just yet, though he did hint he's leaning toward the breakfast area, one of the fastest growing areas of the food industry.

Sea/Lite provided some surimi-based bacon bits for an AFDF sponsored "Summer Alaskan White gold" banquet in Kodiak in March, but he won't say if he will continue making that product.

"My purpose in starting this is to unify the industry in this country," Ostebo said. "I've been working with fresh fish protein for the past three years, and found a lot of the capabilities and characteristics are the same with frozen fish protein. The Norwegians have been working with reconstructed fish protein, like fish cakes, and fish puddings, for generations. All I've done is take Norwegian product, some Japanese technology, and domesticated the process," he said.

"I see this as an opportunity to do what many Japanese industries have been doing for years—taking a good idea and improving it. I don't intend to play Star Wars with the Japanese. I just want to develop a good product."

Ostebo believes now is the time for the domestic industry to get involved, before foreign interests have a chance to buy up enough companies to gain control of the industry. "Right now the Japanese are buying up smaller companies and calling them joint ventures, and trying to put enough dollars into the U.S. to control the industry," he said. "I'm not in a position to compete financially with that. But I can't help but see a tremendous opportunity for a domestic company with financial backing to start to develop and manufacture surimi at sea, and start gaining control of this industry ourselves."

Ostebo emphasized that the issue is economic—not racist, as some have suggested. "Sea/Lite's intentions are not to be in any type of battle with the Japanese," he said. "Our intentions are to develop an industry."

Ken Ostebo can be contacted at Sea/Lite Products, Inc., 4801 Taylor Way, Tacoma, WA 98421. (206) 272-9592.

## Surimi buyers cautious, optimistic

The American food industry seems cautiously enthusiastic about surimi produced by AFDF. At press time, AFDF had shipped approximately 16,000 pounds of surimi in samples and sales to about 30 different clients, 25 of whom are potentially large customers for American-made surimi. Sales price for standard quality (equivalent to Japanese shore-grade #1) is about \$0.65/lb.; for second-grade surimi, prices range from \$0.57–\$0.61/lb.

The surimi produced by AFDF and APS ranges in quality from standard to some top-grade product. Water content is fairly consistent between 75 and 79 percent; gel

strength (stress X strain) varies between 144.73 and 452, as measured on the Voland Stevens texture analyzer. The product exceeds all standards for any Japanese shore-grade product, and compares favorably with most mothership-grade surimi.

AFDF has developed a pricing structure for its surimi which is based on protein levels and the quality of protein in each lot. The price is calculated by multiplying protein percentage (per pound) by the gelling strength of the protein. Actual price is based on the lowest possible protein content in the lot, which implies an 8–10

chance that actual protein will be higher than the price indicates. This means the price reflects guaranteed minimum protein values—not average protein values.

A complete specifications sheet outlining water content, breaking strain, stress factors, and whiteness is provided with every lot of surimi sold. This crucial information is not provided with any competitive surimi now on the market.

This pricing structure is a departure from the imprecise Japanese grading system, which is based on the location of surimi production, rather than the actual properties of the surimi. The AFDF

formula reflects confidence in the product, guarantees minimum protein content, and lets customers know exactly what they're getting with each lot. This system, along with the specifications sheet, ensure that no customer will pay for qualities that may be unimportant to their formulations (e.g., whiteness, low moisture, etc.) in order to get qualities they do need.

AFDF will send surimi samples to any American food company interested in working with the material to develop new products. Samples can be ordered through the AFDF office, and are shipped out of Seattle.

**JAPAN TAKES FIRST DELIVERY OF ALASKAN SURIMI**

**Special Delivery:** A gift from Alaska's Governor Sheffield to Japan's Prime Minister Nakasone, as he passed through Anchorage on his way home from economic summit talks in Bonn, Germany—a case of surimi made by Alaska Pacific Seafoods in Kodiak, and emblazoned "Made in U.S.A." on the package. The gift was given as a tribute to "the success of cooperative projects between Japan and Alaska," according to Sheffield's office.

**Processor tax credits stalled in Juneau**

JUNEAU, AK—Two bills calling for tax credit for capital expenditures by shore-based seafood processors were introduced in April in the Alaska Legislature. Almost identical, the two bills (SBI by Zharoff, HB58 by Cato, Grassendorf and Thompson) would provide credit for up to 50 percent of any business tax liability for capital expenditures made to "increase product diversity, promote production efficiency and capacity, or improve product quality at a shore-based fisheries business facility in the state."

According to Zharoff aide Karl Ohls, "Both bills are now before their respective finance committees, which, given the state's current revenue situation, are the most difficult committees of referral."

Look for an article about the emerging U.S. surimi industry in *Food Engineering* magazine's May 1985 issue.

**MURKOWSKI NAMES NEW AIDE**

Doug Humes, marketing specialist for Bering Sea Fishermen's Association, has traded in his hip boots for a Rolodex. He will join Sen. Frank Murkowski's staff in Washington, D.C., as his aide in fisheries issues, replacing Joe Plesha.

**Alaska does its share**

In 1984 Alaska exported \$1 billion worth of products to foreign countries. 71.5 percent of that was purchased by Japan. Seafood products accounted for \$287.2 million of exports, natural gas for \$262.3 million, and forestry products for \$216.6 million. The peak year was 1982, when Alaska exported \$1.3 billion worth of products to foreign countries, including \$350.2 million in fish products.

*(Reprinted with permission from the Kodiak Daily Mirror)*

**JAPANESE/KOREAN SURIMI COMPETITION**

The Japanese surimi industry is greatly concerned about increased competition from South Korean surimi processors in the Japanese market. Although Japan imported only 3,000 tons of Korean-produced surimi in 1984, the Korean surimi was priced at \$1,220/ton, as compared to \$1,625 to \$1,720/ton for surimi produced in Japan. The Hokkaido-based surimi industry is, therefore, requesting that the Japan Fisheries Agency establish import regulations for the Korea-origin surimi, since there is no such category currently included in the annual Japanese import quota of \$40 million worth of Korean fishery products.

Korean processors are presently capable of producing about 16,000 tons of Alaska pollock surimi annually, while Japan is capable of annually producing nearly 430,000 tons. —from "Weekly Highlights," by NMPS, used with permission.

**NFPA supports label law change**

"In addition to lower cost, new substitute foods may have other advantages when compared to the foods they copy." So is the FDA quoted in a recent report on labeling strategies for surimi-based foods, released by the National Food Processors Association (NFPA.)

The report compares the nutrient content of shrimp, king crab legs, and scallops to that of surimi-based formed shrimp, crab and scallops. It also compares nutritive values of pollock to raw surimi.

Analysis shows that surimi and surimi-based seafood analogues "are all far below" the required levels of thiamine, riboflavin, niacin and iron. The report suggests that surimi-based seafood analogues "will have to be extensively fortified with vitamin and mineral nutrients" in order to be nutritionally equivalent to the "real thing," and thereby escape the FDA's mandatory "imitation" label.

Regulations covering other analogue products—such as imitation sausage, bacon and eggs—have never been finalized by the FDA, so future requirements are still a little uncertain, according to the report.

The NFPA also suggests that, since the material known as "surimi" has no common or usual name in the English language, but the word "surimi" is "coming into general use" in the American industry, the U.S. surimi industry might petition to the FDA to adopt the word "surimi" as the common or usual name of that material in this country. Surimi could then be listed in the ingredient statement on a package, in accordance with regulations.

The report also includes a sample petition to the FDA to accept the word "surimi" as the common or usual name for surimi in America.

Copies of this report are available from NFPA, 1401 New York Avenue, N.W., Washington, D.C. 20005, or from the New England Fisheries Development Foundation, 280 Northern Ave., Boston, Mass. 02210.



**The Report Report**

Below is a list of publications and reports in which you may be interested:

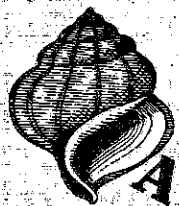
**Surimi: The Explosive Blended Seafood Market** by R. Woodman Harris, Seafood Management Corp. (195 pp.) A primer on the U.S. surimi industry, including its politics, markets, regulations, economics, and the Japanese history of surimi. Available from Harris for \$1,500, but to AFDF voting members for discount price of \$195.00. Write Seafood Management Corp., P.O. Box 1500, Cos Cob, CT 06807; (203) 661-3880. AFDF members contact the AFDF office for discounted books.

**Surimi Identity Project: a Final Report**, by Brand Group, Inc., for the New England Fisheries Development Fdn. (39pp. plus appendix) Summary of a co-op project with National Food Processors Association to develop consistent labeling and nomenclature recommendations for surimi-based products. Report offers a labeling strategy which the authors hope will reduce "the negative impact of the 'imitation' labeling." It includes a definition of "surimi" for consumers, considers different names for surimi, discusses an identity for end products. Available free from Brand Group, 640 N. LaSalle St. Suite 655, Chicago, ILL 60610; (312) 951-1616. Or contact NEFDF at 280 Northern Ave., Boston, MS 02210; (617) 542-8890.

**Surimi: a Unique "New" Food Protein, and Surimi: Building Block of Formulated Foods**, by Dr. Tyre C. Lanier, North Carolina State University. (9 and 5 pp., resp., plus illustr.) Transcripts of two in a series of four papers given to various groups in the past year to further Dr. Lanier's goal "to get surimi into the processed meat business." Both reports very informative. Write for these two or the whole series of four from: Dr. Tyre C. Lanier, Food Science Dept., N.C. State Univ., Raleigh, N.C. 27650. (919) 737-2964.

**The Effect of Phosphates in Processing of Surimi-Based Products**, by Jose Montejano, Tyre Lanier and Donald D. Hamann, N.C. State University (10 pp. plus appendix) The addition of tripolyphosphates to surimi was originally thought to aid in protection of proteins from denaturation during frozen storage. Newer studies show that phosphates act mainly upon surimi after it has thawed to aid comminution with salt and other ingredients, promoting water retention and increasing gel-forming ability in heat-processed surimi foods. The purpose of this study, conducted for BK-Ladenburg, was to evaluate the effects of various food-grade phosphate preparations on the viscosity and thermal gelation properties of surimi solubles.

For purposes of this study, surimi was made from fresh sea trout. Copies of the report are available free of charge from Paul Taylor, BK-Ladenburg Corp., 3720 Wesley Loop, Olympia, Wash., 98502 (503) 243-1323.



**ANOTHER VOICE** We learn by listening.

## Alfa-Laval offers surimi trawler upgrades

by T C Swafford

American marine operations are right now planning facilities to produce surimi at sea. As they do so, they will be "targeting in" on systems and practices currently used by the offshore processors. However, much of that fleet has been operating 15 to 20 years, and is built on the equipment and economic conditions of that period. Today, there is no need to directly copy certain of their determinable limitations.

Trendlines from naval architects and marine operations in recent years should be particularly helpful to shipboard surimi operators, particularly as they view pending conversions or new construction. The unmanned engine room is one way to increase large-vessel reliability, and translates in smaller vessels to decreasing labor costs. Major vessels recently have been adopting more efficient equipment, and more suitably dimensioned equipment, enabling higher productivity and also vacating space for other utilization.

### Save some space.

One significant technological change in the past decade has been a complete displacement of conventional tube-and-shell heat exchangers. The marine industry now leans toward a plate-design which generally is capable of three to five times the thermal coefficient of tube-and-shell units. Numerous vessels are now equipped with centralized cooling systems, completely outfitted with plate-design exchangers.

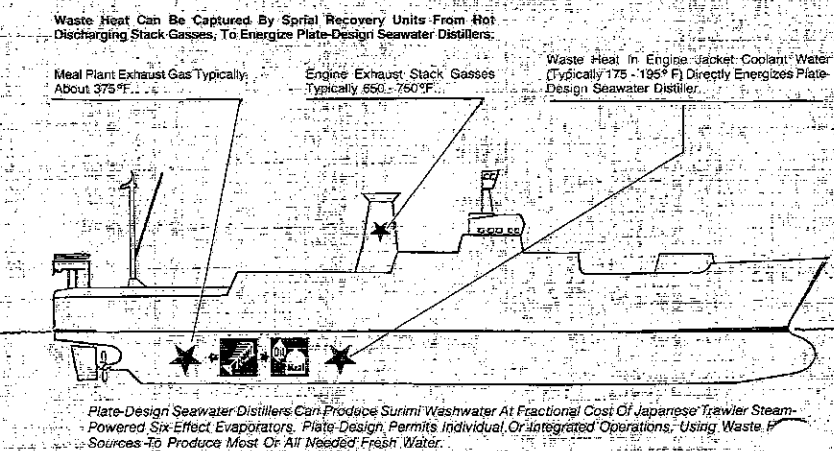
A small plate-design exchanger may only need a total space envelope of 2 ft. by 4 ft., while a tube-and-shell of comparable capability may require a 4 ft. width by 10 ft. length deck space.

### Save some fuel.

Surimi conversions mean additional demands, both in extra processing space previously used for other purposes, and also in added energy demands. In order to plan an economically viable plant, the surimi operator will need to include fish meal and fish oil processing on board. Nearly 70 to 80 percent of the paid-for harvested pollock will be discarded to the sea at a dead loss unless the fish meal plant is built into the vessel to materially aid the economics of surimi production.

Within recent years a plate-design distiller has enabled shipboard operators to do away with operating manpower requirements of the Japanese distillers, and to avoid excessive maintenance. Six-stage evaporators generally require close attention to process control to adjust interdependencies for premium performance.

The plate-design distillers are available in convenient capacities to harness waste heat from most operational vessels. This would include, for instance, a circuit to strip excess heat from engine jacket



Surimi operations present a very significant problem in producing sufficient fresh water with which to rinse minced fish. A high volume water-to-mince ratio is required in order to adequately remove water-soluble fractions from the finished product stream. The offshore processors now typically use a physically massive multiple-stage evaporator of Japanese construction. Its most significant characteristic is the manpower needed for operation and required maintenance.

cooling water, otherwise wasted to the sea, and thereby getting extra seawater distillation capability without additional fuel. Most six-effect Japanese stillers require fuel to provide steam boiler needs, in order to yield distilled water.

### Save space, fuel and manpower.

It may be possible for some conversions to adapt a triple-threat concept to maximize their significant benefits. Assume that the conversion includes a direct-combustion-heat-generation type of fish-meal plant

T C Swafford is marketing specialist with Alfa-Laval, Inc., 900 Larkspur Landing Circle, Suite 100, Larkspur, Calif. 94950. (415) 461-0950

Lynda Nestelle is an artist-turned-food consultant and owner of Taste 1, a food product development business now creating surimi-based products for several companies. We asked Ms. Nestelle to write some thoughts on the potential of surimi beyond seafood analogues. "How many volumes would you like?" was her reply. Read a few of her ideas; contact her for more. —Ed.

## After analogues: Surimi can take on any food

by Lynda Nestelle

PORTLAND, ORE—Surimi is like a blank canvas: it can be painted any way I want it, and it can be changed and shaped to fit my tastes. For the first time, I have a totally new food product to use my imagination on.

Five years ago, during a product development assignment, I was asked to create several value-added items that could be produced at reasonable cost and be sold for a good price at the market. One item could be improved by adding crab, but the cost analysis did not leave enough room for that expensive ingredient.

Examining the market, I discovered the crab meat and surimi combination called "imitation crab legs." I used it, and the finished sample product was accepted for test market in three locations—until the marketing board reviewed the ingredients statement. When they saw the word "imitation," they knew that even though the

product itself may have been a success, the "imitation" label would stand in the way. I was disappointed in the outcome of my first encounter with a surimi-based product, but intrigued with the discovery I had made: there was *something new under the sun*, a new food to research.

I've been reading and studying and learning ever since that time, with the help of AFDF, the Institute of Food Technologists, seminars, and Japanese, American and European publications. And one most important thing I've learned to share with as many as I can: surimi is not an imitation of anything. It is a new food.

I'm frequently asked to brainstorm with various companies during new product or conceptual meetings—an exhausting process, but one that always leaves me "high" in anticipation of new gastronomical accomplishments. Of course, these meetings, and their outcomes, are highly confidential. But I have made the endless possibilities of surimi my own project, and therefore I can share my visions and successes.

Let's start with the facts: fish protein is healthful, has no harmful cholesterol, is easy to digest, is recommended in daily diets, and is priced right. That's reason enough to use it in a product line. But when it comes in a variety of grades, in a tasteless form, the options increase. Oils and by-products that create rancidity and residual fishiness in products have been removed during the surimi-making process, making it the best item for value-added development I have ever worked with.

Surimi is unique. It has an attribute called gel strength that enables it to bind together quickly in a most elastic, strong manner. It is this unusual property that also helps create interesting textures when put into other products or mixed together with a matrix. With these facts in mind, let your imagination go.

Here are a few things I like to make with surimi—which I usually call Aqua Protein in my lab.

Let's start out easy and make hot dogs. Since they're reddish brown in color, we



## Surimi on menu at formed foods conference

which needs no steam, but heats only with hot gases circulated within the process heat exchangers. Waste heat can then be captured from the final gas as it proceeds to the exhaust stack, by using the new series spiral heat exchanger to transfer that thermal energy to an efficient plate-design distiller.

Additionally, the double-effect plate-distiller can be installed to capture thermal energy from the engine cooling water circuit, while still another unique spiral will strip heat from the engine stack exhaust. A recent match-up of these factors and equipment demonstrated that some 220 tons/day of distilled water could be provided for a vessel without consuming additional fuel to attain it. If additional distilled water capacity appears desirable, other on-board high-quality or low-quality heat circuits may be tapped, or conventional steam-drive may be installed.

Obviously, processors should strive to include circuits (in new construction or in conversions) which make use of waste heat to minimize fuel costs, utilize more efficient components to yield maximum potential, save space, and which require minimal power attendance.

Competition with offshore producers has always challenged Americans to innovate and to improve upon traditional concepts. Our objectives have always been to offset lower-cost foreign labor and to attack points of potential inefficiency. Efforts are now successfully being made by AFDF to improve the Japanese-design circuit shoreplant capabilities installed at APS in Kodiak.

PROVO, UT.—Food technologists toying with surimi will have to look further than the raw material to find any future there, according to several seminars given at a Symposium on Formed Foods held April 1 and 2 at Brigham Young University.

Marketing consultant Bob FitzGerald and Sharon Gwinn represented AFDF at the conference. FitzGerald reported that, according to Vito Russo of PPF Norda, food processors who are most promising surimi buyers will not seek to purchase the raw material and make their own products, potential surimi foods producers will "only want to buy finished products and put their label on them. Then there is no risk to them, and they like that."

Other subjects of interest to the surimi industry were:

**Playing chicken.** The poultry industry produces 4 billion pounds of necks and backs a year. More than 787 million pounds of that is wasted—a figure that brings gooseflesh to the poultry industry. Future emphasis will be on total utilization of the animal in formed foods. Dr. Roger Howard of Foster Farms said food scientists have made surimi from chicken necks, and are now developing a way to imitate crab legs with chicken necks.

There are now more poultry by-products on the market than can be used in hot dogs and bologna, so the poultry industry is looking for new markets; poultry—not soy—may be surimi's keenest competitor.

Market tests on different hot dog formulations found that chicken and rabbit-based hot dogs fared better than beef hot dogs. Poultry hot dog market growth averages 20 percent a year.

**It's a long and a dusty road.** . . . Dr. Harold Leidy of General Foods said when that company introduced "Lean Strips," an imitation bacon, they advertised that it tasted, smelled and looked just like bacon.

But, he said, those qualities weren't what finally sold consumers. People bought Lean Strips because they were nutritious and low in cholesterol.

Leidy offered one caveat: it took 10 years to establish a successful market for Lean Strips.

**Big bucks for this analogue:** The bacon industry is a \$1.5 billion market annually, and may be open to nutritious, low-cost analogue entries such as surimi-based bacon bits. Surimi may even exceed soy as a base: one problem with soy is that processors first must hide the soy flavor, and then add the product flavor. Surimi doesn't have that problem.

A survey of fast food businesses stated that to be successful, a product must be: 1) of solid quality; 2) easy and fast to prepare; 3) have moderate nutritional value; and 4) be value-sensitive.

Consumer habits are changing faster than you can beat the stuffin' out of an Egg McMuffin. Quinn Gardner, president and CEO of UI Group, Inc., suggested four "formed foods articles of faith:"

1) Consumers want more convenience and finger-food items. 2) Lifestyles are changing; today's 7-course meal is "a Big Mac and a 6-pack of beer." 3) When studying consumers, don't listen to what they say—watch what they do. (Often two very different things.) Watch the psychology of eating: most snacks are "a reward." Americans' eating habits are not logical, but; 4) tradition in this industry dies hard; changes will be slow. Regardless of other factors, lower-quality protein must sell at a lower price.

**The breakfast club.** The greatest potential for structured foods is in the breakfast realm, not lunch or dinner. New breakfast items find better reception than other meals. Analogue foods have an important role to play, but it's a limited one,

and right now it's economically unsure as well. Gardner said the area to market analogues is in foodservice, where reception will be higher than in retail.

The Japanese kamaboko market produces thousands of different products in about 2,000 plants. The retail value of projected 1985 surimi sales in the U.S. was estimated at \$350 million by Frank Kawana of JAC Creative Foods. American end-users need more information on cold storage requirements for surimi and surimi-based products, Kawana said.

Japanese-made surimi is stored up to a year at -25°F, then shipped to JAC Creative Foods in L.A. at -10°; then it can be stored at -5° for three months before it goes bad, Kawana said.

**Five-year forecast:** Americans consumed 330 billion lbs. of food in 1980, or 1400 lbs. of food per capita. In 1990, there will be 40 percent more 35-44 year olds, who will set eating trends for the industry. Those consumers will be well-educated and open-minded, and will be willing to pay for high quality foods. They will demand convenience in food, without guilt.

**Final words:** In his final remarks, Gardner said one big problem of the food industry is that "it takes too long to get products out of the food labs and into the market place." Because the market is so dynamic in this country, food technologists need to "streamline the lab work," and connect it into the mainstream of market development. "Everyone in the food business needs to work together," Gardner said. "We don't have anyone here who will experience a real 'break-out' like Pampers did. We need to share our information and we will all get there together."

If you missed the formed foods symposium and would like more information, contact: Rae McFarland, Beehive Machinery, 9100 South 5th West, P.O. Box CC, Sandy, Utah 84070 (801) 561-4211.

can use B or C grade surimi, keeping the price down, and maybe even mix both grades together for a sausage or smoked product in a casing. We'll add more binder and make a sausage patty we can flavor to taste like pork, ham, beef, or even smoked salmon. One more step, and we can turn this item into a lunchmeat by blending it more thoroughly with a matrix. Mold, cook and slice. Now we could sell this product fresh, frozen or canned.

How about using ground surimi in chili, hash or soup? Or dehydrate it in dry spaghetti or taco mix? The dehydrated product could be ground and used as a protein extender or mixed with seasonings and sprinkled over french fries or potato salad.

The dry, flavorless protein powder made from surimi could be mixed with Duram wheat flour, and end up in the noodle itself. One day cheese could be a complete protein food, if surimi were added during processing. A slice of bread or a glass of chocolate milk could be a more positive addition to a child's diet with a touch of

"Aqua Protein." And this is only the beginning.

The gel strength in raw surimi could be a plus for salad dressing or mayonnaise, and it might be used as a thickener in sauces. Why not use it in place of or with whey in ice cream and marshmallows?

I'm not going to reveal which of these foods I have successfully experimented with, and which are future projects of mine. I'll let you use your imaginations. But I hope most people interested in surimi realize that surimi has a place in the computer as an alternate protein source in many different foods.

After all, anything is possible. If we ever have another peanut shortage, how do you think we'll make peanut butter?

Lynda Nestelle can be contacted at Taste 1, Inc., P.O. Box 30371, Portland, Oregon 97230 (503) 254-5309.

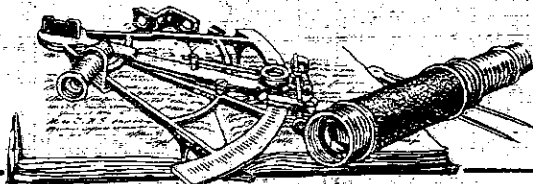
## AFDF board adds two seats

Voting members of AFDF overwhelmingly voted in April to add two new seats to the board of directors. The two new slots will be filled by representatives of seafood industry support services or consumers.

Ballots calling for a by-laws change to allow the additional two seats defeated with seats on the AFDF board of directors were mailed to all voting members. The vote was 23-2.

A nominating committee is now receiving suggestions for candidates for these positions, and voting will take place by mail in early June.

With the addition of these directors, the AFDF board will have 12 directors. All voting members of the Foundation are eligible to serve on the board. Elections are held each year at the December annual meeting.



## THE VIEW FROM HERE

Analysis

by Chris Mitchell  
AFDF Executive Director

For the last couple of years AFDF has attempted to familiarize the food industry with surimi, its unique properties, and the opportunities it presents for new products. Now the shellfish analogue market is rocketing skyward (subject to a few glitches, like sugar embargoes) and our next step is a successful lift-off for non-analogue, non-imitation products. Those will come, we are confident, but they will take a bit of additional time and effort.

To date, our most difficult—and we feel, most successful—effort was to cut through vast layers of informational and political smoke, acquire a line of surimi processing equipment, figure out how it works, and finally produce some product. In less than 35 production days, some 450,000 pounds of surimi were produced during the start-up phase of this project. Quite an accomplishment, given that every plant faces a legion of inherent start-up difficulties.

Even more amazing is the fact that all the surimi produced—all 450,000 pounds—exceeds all specifications and expectations for shore-produced surimi.

Yields were lower than we would have wished, and the product is not all top quality. We look forward to making improvements in both these areas when the plant starts production again. (We expect that to be in August, when the pollock recovers from spawning, and all the salmon at APS are in the can or are frozen rock-hard.) In the meantime, we are making some physical changes to the surimi line to increase yields, cut labor costs, and maximize quality of the product.

Though we can only wait now, we are not idle. We've got nearly half a million pounds of surimi to move to market. Such an undertaking requires a shift in gears, energies and talents from our previous tasks, and we've found it tough going. The domestic market is interested in Alaskan surimi, but presently is comfortably supplied from abroad. Their criteria for

purchases are basically the same as everyone's: high quality, good price, and consistent supply.

The latter presents our biggest problem, since American surimi suppliers have heretofore been non-existent; and AFDF's self-avowed goal (and part of the foundation of its charter) is eventually to phase its way out, leaving market forces to act on their own.

We intend to continue to supply moderate-sized samples free to the industry to aid in developing new product opportunities, but there's no way we can



give away 450,000 pounds before production begins again in August. Moving the bulk of product requires that we tap into existing markets, either shellfish analogue manufacturers or ethnic kamaboko producers. Those customers require specific qualities in their surimi, and seem cautious to accept domestic surimi.

Wish us well, because, quite frankly, it will be a hard sell. Existing suppliers have a growing market to protect, and existing customers have reason to remain faithful to those suppliers. But watch out—competition is coming from the Great Land!

## NFI delays action on labeling proposal; FDA label ruling expected in May

An industry-generated proposal to the FDA to adopt a new name for surimi-based analogue products and eliminate the required "imitation" label rule was tabled by National Fisheries Institute (NFI) in late April after its board members said there was not enough information on which to base a recommendation of the proposal.

The NFI said its staff and NMFS officials would continue to study the problem. In the meantime, however, the FDA was expected to draft a ruling on surimi product labeling in late May.

The suggested regulations change was drafted by the NFI surimi nomenclature subcommittee on April 17. The three-part proposal called for a common or usual name for surimi analogues, the deletion of an existing ruling that the word "imitation" be used on all seafood analogue product labels, and encouraged industry unity on surimi product label and nomenclature issues.

According to one NFI source, the NFI board of directors, who met to review the proposal, decided there was not adequate information to warrant submittal of the proposal to the FDA with NFI's full endorsement. The NFI board decided to delay finalization until October.

The following is a brief review of the proposal, which was drafted by the NFI surimi nomenclature subcommittee:

First, the proposal recommends that a common and usual name for these products be selected from the following three suggestions: Sea Blend, Seafood Blend, or Blended Seafood.

Along with that name, the label would also include a statement of characterizing ingredients, such as "a seafood blend containing fish and Snow Crab meat" or "a sea blend containing fish and artificial crab flavor," says the memo.

The proposal also calls for eliminating the term "imitation" from the label, a word now required by FDA for analogue product labels.

The proposal does not address the use of surimi in non-analogue products such as bacon bits, frankfurters, and sausage.

The proposal was viewed by subcommittee members as an effort to present to the FDA a unified opinion from the surimi industry before FDA sets regulations.

AFDF director Chris Mitchell, a member of the nomenclature subcommittee, said the proposal is "a step in the right direction."

If it were to be accepted by the FDA, Mitchell said, it would serve to "at least temporarily resolve the concerns of marketers in this country who have been battling with the 'imitation' rule," he said. "This proposed solution would coin a common name, and outline other descriptors that would help get the FDA off the industry's back temporarily."

One reason behind the NFI's delay of endorsement may be that some industry members believe that surimi-based products that imitate real shellfish products are, in fact, inferior to and imitations of real shellfish, and should be labeled accordingly.

Though the industry proposal will not be submitted to the FDA before its ruling in late May, it is expected that cause of FDA's apparent willingness to listen to the growing surimi industry, results of the ruling will be workable, and may resolve some of the difficulties the industry now faces.

The NFI subcommittee encourages comments from industry members. Contact subcommittee chairman Roland Chambers at Kibun Products Int'l., 150 S. Robles Ave., Suite 560, Pasadena, Calif. 91101 (213)681-0726; or the NFI offices at 2000 M Street N.W., Suite 580; Washington, D.C. 20036 (202) 296-5090.

## Dear Editor:

I wish to respond to Dr. Regenstein's letter to the editor regarding the nutritional quality of surimi [see *The Lodestar*, Winter 1984/85 issue.]

Dr. Regenstein's Irritation with the article "Buyers: Surimi is Better than the Real Thing" [in *The Lodestar*, Autumn 1984] may have some justification, but to state the Brand Group's report is fundamentally flawed because consumers were not informed that surimi contains cryoprotective agents and that the nutritional data suggests a clear inferiority to the product being imitated is equally misleading.

First, the crustacea species and/or their analogues made from surimi are not consumed because of their nutritional attributes. They are consumed because they provide a good deal of gustatorial

gratification. I do not think anyone would pay \$10-\$15 for the native species solely to satisfy nutritional requirements. Quite obviously these basic nutritional requirements can be provided by consuming beans, cereal grains, and several species of fish rather than consuming king crab and shrimp.

Secondly, one could justifiably argue that surimi-based products are actually nutritionally superior to the real thing. Certainly, it is no mystery to Dr. Regenstein that many nutritionists and consumers regard margarine superior to butter, salad dressing superior to mayonnaise, and whipped topping superior to whipped cream. He also knows that the list is longer than I have presented here, and is growing at a very rapid rate.

Insofar as minced fish is concerned, the National Marine Fisheries Service (NMFS) has not nor does it choose to ignore the merits of this product. I would respectfully refer Dr. Regenstein to Chapter 2 in *The Chemistry and Biochemistry of Marine Food Products* (AVI Publishing Co., 1982) where Spinelli and Dassow discuss the various uses for minced fish in "Fish Proteins: Their Modification and Uses in the Food Industry."

Currently NMFS is petitioning for use of minced fish as an optional ingredient in processed meat products such as frankfurters; mince is also being used in sticks, portions, and a stuffing ingredient in some prepared foods.

John Spinelli, Director  
Utilization Research Division  
NMFS

**The Lodestar**  
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Chris Mitchell, Executive Director  
Ken S. Holmes, Editor  
Next issue of *The Lodestar* will feature a cold, hard look at marketing surimi in America, and some marketing problems for surimi-based products, results of a surimi functional properties study, and plans for the August start of the Alaska Pacific Seafoods Surimi production line.  
*The Lodestar* encourages responses of all kinds from readers; comments, news tips, letters to the editor, are all welcome.

The editor's turn



# Off the Cuff

*"If we once start thinking, no one can guarantee where we shall come out; except that many ends, objects and institutions are doomed. Every thinker puts some portion of an apparently stable world in peril, and no one can wholly predict what will emerge in its place."*  
—John Dewey

The AFDF board of directors, its NMFS leaders, and several other forward-thinking Alaskan processors started thinking about pollock a few years ago, and, at least for several Pacific Rim industries, the world has never quite been the same since.

Sometimes people take risks without knowing it, as when Galileo rushed out into the streets, mad with excitement, and shouted, "The earth is, after all, not the center of the universe but a ball rolling through eternity!" and his life was changed forever after that.

Sometimes people take risks knowingly, and are stumped not by the danger for which they are prepared, but by some other unexpected bafflement they never could have expected, as when John Glenn, after orbiting around the earth in a tin can, or close to it—and after a flawed and dangerous re-entry into the earth's atmosphere—landed safely and then later broke his neck in the bathtub.

Americans consider John Glenn the greater hero: he risked life and limb to hurtle himself into space, swing around the orb a few times, and drop like a stone into the ocean. But to some, Galileo actually took the greater risk: he flung himself into a new orbit of thinking, pioneered a new idea that no one had explored before, and upon his return from this great adventure, changed the world, slightly.

Actions speak louder than words, they say. But a single new thought born of a human mind can hush the clamor of a noisy world, and set a new pulse to drumming.

Of course, the invention of surimi didn't happen last week, or last year, but generations ago. The idea that Alaskan processors should take advantage of that colossal Pacific pollock resource out there is not new, either. But in the wake of the collision of those two ideas, new thoughts have sprung to life.

Bob Ryan, of Ryan Engineering, asked himself, "How can I build a crab stick line that fits with domestic technology, and uses new technology?" T C Swafford of Alfa-Laval asked, "How can I apply what I know to make surimi processing more efficient and more profitable?" Thus we have seen the first all-American surimi crab stick line, and we have learned how protein recovery can increase profits from surimi production more than 25 percent.

As more people add their creativity to this process, more ideas root and flourish. New ideas are not born because somehow they "come into their time." New thoughts come into the world because someone takes a chance, stands alone in a state of unknowing, and says, "What if...?"

And so it is not a healthy political climate that will nurture this industry into being, though that will help. It's not amiable regulations that will do it, either, though they are worthy of fighting for. Those who stand back and say, "We'll see how the market responds before we jump in," will not add any heave to industry development, either, though their support is important.

It's he or she who takes a risk, who leaps into the orbit of a new thought, who will spring out to the limits of our knowledge and look beyond, that's who will nudge this industry into being. It's that kind of person who will help recreate the world, slightly.

And no one can predict just where we shall come out.

*Krys Holmeq*



## Alaska legislature cites surimi project

Melinda Post, (upper right) of Tasks Unlimited in Anchorage, beams over a gourmet surimi spread she'd prepared for state senators and representatives to the Alaska Legislature April 30. The finger-food fest was in honor of a joint resolution passed that day commending the U.S. Department of Commerce, National Marine Fisheries Service, and AFDF for the Surimi Industry Development Project. The proclamation, introduced by Fred Zharoff of Kodiak, feted NMFS for its

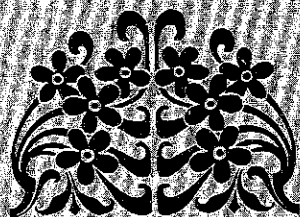
foresight in targeting and pursuing surimi production in Alaska, and called for continued work by the fisheries organizations toward the Americanization of Alaska's marine resources.

Carl Rosier, regional director of NMFS in Juneau was also present for the celebration.

As legislators approached the table, said Michael Broili of AFDF, "you could see the skepticism on their faces. They were asking themselves, 'Sure, surimi is good for the industry, but do I really want to eat it?' And by the time they left, every single person there was sold on surimi."

Copies of the resolution were forwarded to members of the U.S. Congress and President Reagan.

## In Jack's Honor



Jack Hice, gentleman, part genius, and true friend to new ideas and those who believed in them, passed away on March 1 this year. Jack and his wife, Holly Brooks Hice, hold nearly a hundred patents for developments in the food industry—foremost among them the now-ubiquitous fish stick, which Jack and Holly developed in the 1950's. Together they also developed a method of counter-current extraction which is now common in the industry.

But Jack's accomplishments in the food industry pale in importance beside his one true achievement, one not measured in market share, or in royalty value, or in success of his new ideas. Foremost, Jack was a good man, a straight thinker, and a gentle soul. The presence of such men in this or any other industry serves to remind us all that the value of a person's life is not measured by any other value than the height of his integrity.

— The staff of AFDF

Continued from page 1

Portugal to Washington, D.C. in an effort to open that market himself.

During that time, in the summer of 1983, Trident's new plant in Akutan burned down.

**Phoenix from the flames**

From the ashes of that fire came a better-designed building and a re-designed project. Year II of the model white fish project called for producing cod products as the major bulk fishery, while processing other underutilized species and by-catches.

During 1984-85, Trident discovered some encouraging results: the only species studied which did *not* show potential was Atka mackerel, which sells for only 10¢/lb. But since wet salted cod proved an inadequate bulk resource on which to base the economic foundation of the plant, Bundrant decided to look elsewhere for that stability.

**Shifting gears**

Bundrant decided to shift gears toward Pacific pollock, a much larger resource with a far bigger domestic market than wet salted cod. Bundrant now believes the Baader 182 will enable Trident to produce premium fillets from the largest harvested finfish resource in the world, providing Trident with the bulk fishery needed to make a successful venture.

Since August of 1984, Trident has produced and sold 30,000 lbs. of layer-packed pollock fillets using a Baader 184. Those fillets were well-received in the foodservice area. Trident learned there is a strong market for IQF pollock fillets at 80-92 cents/lb.

Pacific pollock is potentially a 10-month fishery off the Aleutians (June to April; pollock spawn during the other two months, making low-quality product.) At 120 fish/min., 7,200 fish/hour, at 80 percent feed rate, Trident's Baader 182 can produce 52,000 pounds of pollock fillets a day. At that amount, according to white fish project manager Chris Riley, Trident would earn over a million dollars a month in gross revenues, and would pay about \$260,000 per month to Alaskan fishermen.

**Safety in numbers**

"The most exciting thing about this project is that if one Baader 182 can prove profitable, it's easy to see that more 182's could increase profitability even more," Riley said. "The great thing about the pollock fishery is that it's a huge resource. It would take 74 Baader filleters operating constantly statewide to process all the pollock right now in Alaska's waters."

Another important aspect about the pollock products, according to Trident's Nils Dragoy, is that the pollock will only be frozen once, just after processing, while all Japanese and Korean pollock fillets on the market are frozen at sea, thawed before processing on shore, then frozen again before shipment to the U.S.

Riley believes a high-volume resource producing a premium product could be the future of successful on-shore seafood production in Alaska. "As soon as you find some way to make money running pollock," he said, "the resource is so big you're going to be able to move up to high volume without running into supply problems. Once you get to a certain point, about 200,000 round lbs. a day, you're ready for a meal plant. Then the effective price of your fish falls, because a meal plant allows you to sell the entire fish, throwing none of it away."

The objective of this move, according to Bundrant, is to provide an economic base for the plant that will justify keeping it open year-round. With pollock as that base, Bundrant hopes to process Pacific ocean perch, black cod, turbot, rex sole and cod fillets as well.

The Model White Fish Demonstration Project started out as an effort to demonstrate the feasibility of large-scale white fish processing at a shore-based plant. What Bundrant hopes to forge out of this project is a year-round, economically stable seafood processing plant on Alaskan shores that will serve as an example of the potential and solidity of Alaska's seafood resources.

A complete status report on the model white fish project will be available June 1.



*"Concern for man himself and his fate must always form the chief interest of all technical endeavors, concern for the great unsolved problems of the organization of labor and the distribution of goods—in order that the creations of our minds shall be a blessing and not a curse to mankind."*

—Albert Einstein

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# the LODESTAR

Charting the course of fisheries development.

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The whole of science is nothing more than a refinement of everyday thinking.

—Albert Einstein

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