

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

Charting the course of fisheries development.

Alaska Fisheries

Development Foundation

Volume I, Issue 2

Autumn, 1983

## short cuts

### Lots at Steak

The Colorado Beef Board and the Colorado Cattle Feeders Association have put up \$19,000 for a grant to study the formulation of steak analogs that are made from small or irregularly shaped pieces of meat. The chunks will be pieced together with a glue-like solution made from meat protein, and formed to resemble steak. The result: an inexpensive cut that looks like a top-notch steak, actually made from a "patchwork" of cheap steer parts that usually are used for ground beef. . .

—Anchorage Daily News

### EXPORTS of Kamaboko-Based Crab Legs

Japan exported kamaboko-based crab legs at a rate of 422 tons in 1979; that figure leapt to 9,330 tons in 1982, with most going to the U.S. About 200 Japanese factories now produce the kamaboko products from Alaskan pollock. . .

—Canadian Fishing Report

### Mermaid Sells Fish Cakes in Tacoma

Mermaid Industries of Tacoma is producing and marketing unbreaded, fully cooked and fried fish cakes and fish burgers made from Alaska pollock.

The project was first introduced in November 1982, but active marketing did not begin until January, according to company President Ragnar Lovoll. Lovoll said that consumer reaction to the product has been very favorable. He has concentrated on the institutional market, especially nursing homes, which favor the product because it's easily digestible. . .

—Pacific Fishing

# LOBSTER

## A Pollock Project Update

*Seventeen new surimi products like these are now headed for the market.*



*Photo by Michael Broili*

# TO LUNCHMEAT:

When a small group of people, fired by a really good idea, have the opportunity to watch hundreds of people catch on and share the excitement of a developing industry, the results can be close to astounding.

Alaska Fisheries Development Foundation's pollock industry development program has sparked that kind of fire in the nation's largest state and across the country.

"The project," said Foundation director Chris Mitchell, "has hit the ground running."

The project centers around the concept that once U.S. food producers discover the gold-mine of low-cost, high-protein surimi made of Alaskan pollock, the industry will develop by itself. The role the Foundation plays is to provide U.S. companies with surimi, help link up the various sectors of industry to build an infrastructure, and act as a catalyst of information for those involved in this new industry.

The concept is quickly becoming reality—and may result in the growth of an entire new industry in America.

"The real virtue of the program is that it is entirely designed by the industry," Mitchell said. "We're letting the market place take the ball and run with it."

And run they are. Three months ago, AFDF shipped its first load of surimi to an American food company. Today 17 new surimi products are being developed and produced in the laboratories of a dozen food companies. One firm is working so quickly in product development, they have already surpassed the Foundation's give-away program and have begun buying surimi on a regular basis.

Half of the new products taking shape are seafood analogs; the rest cover a variety of foods, giving root to the hope that surimi will as easily find its place between two hot dog buns, or floating in a soup bowl, as it has formed to the inside of a crab shell.

Several food companies are exploring a lobster analog, crab cake, imitation crab cocktail, stuffed crab claws, and artificial shrimp.

Some laboratories are also creating surimi extenders for fillets, two kinds of sausage, and three kinds of fritter-type products imitating crab, scallops, and shrimp. Surimi-based baby food, a pickle and pimento lunchmeat, and a surimi-based "luxury loaf" are also being explored.

Each company is involved for one reason only: the future of the pollock industry lies in the U.S., and these companies see where there is a profit to be made. Competitors are not compelled to share technological information with each other; the program works as the market works—naturally, and at its best without interference.

If the future of the pollock industry is as active as the response to the program has been, the U.S. has much to look forward to.

Program participants are responding so quickly, and with so much fervor, the Foundation itself can hardly keep up. About 4,000 pounds of surimi have already been delivered to food companies nationwide. At this rate, the Foundation's immediate sources may soon be strapped for raw product.

"Things are moving so fast, we're already looking at setting up a commercial surimi producer in Alaska," Mitchell said. The plan—part of the project originally scheduled far later in the game—calls for a 1,500 square foot surimi production line to be installed in an existing Alaskan processing facility.

The Foundation has begun canvassing the Alaskan contingent to find an interested and qualified processor who could accommodate the 2,000-6,000 lb/hr production line, freezers, and cold storage, at a location near productive pollock grounds.

As the various sectors of the industry become more involved in the pollock project, the effect seems to snowball. Food companies who are developing new products begin looking around for a reliable supplier. Realizing the market is strong enough to support a new venture, processors become interested in surimi. Suddenly,

continued on page 4



# ANALYSIS

## PRIVATE VS. PUBLIC INDUSTRY ASSISTANCE

*"Capital is wayward and timid in everybody's business lending itself to new undertakings, and the State ought to excite the confidence of capitalists, who are ever cautious and sagacious, by aiding them to overcome the obstacles that lie in the way of all experiments."*

—Alexander Hamilton 1791



Industry of all sorts is playing a different game today than did Alexander Hamilton's neighborhood clothing factory or cheese shop. The name of the modern game is international business. Today the stakes are higher, the players are rougher, and even the monetary exchange rate upon which it's all based fluctuates daily.

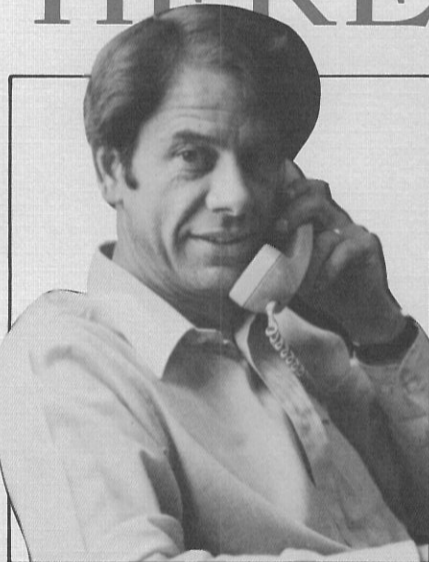
The U.S. has been steadily falling behind Japan in production and exports for the past decade. Other countries, spurred on by their own national industry assistance policies, are overthrowing U.S. power in the marketplace. On the domestic front, recession and unemployment have taken their painful toll on American productivity.

Despite President Reagan's laissez-faire attitude about industry, he has proposed the formation of a Presidential Commission on Industrial Competitiveness, which, accord-

In the aggressive 1980's, the capitalistic system could hardly be called "timid." American industry is developing new products and conquering new markets faster than the government can think up new regulations for them.

But Hamilton's philosophy of 1791 is the subject of fevered debate 192 years later: should government take responsibility for "exciting the confidence of capitalists," and "helping them to overcome obstacles?" And can Big Brother help industry without simultaneously manipulating it to death?

### THE VIEW FROM HERE



Nearly eight years ago, I made a startling discovery. At least it was a discovery to me. Having labored in frustration for almost 10 years as a government fisheries development officer, with less than monumental success, I realized that government develops nothing—industry catalyzes industry.

That revelation became my entree into the tuna industry. Although a varied international system, the tuna industry is nevertheless a very tight, cohesive network of players in a

mature but dynamic industry. Profit was the common goal. Each player knew his role and performed it, according to market conditions.

The U.S. pollock industry (there isn't one yet) has a long way to go. The proper ingredients are there for it to take off:

**Abundance:** Annual harvest in U.S. EEZ of over 1.2 million metric tons

**Inexpensive:** Ex-vessel prices as low as \$100-\$150/metric ton

**Full Utilization:** White fish fillets, surimi, mince, meal, oil, roe ...

When I last put pen to paper to prepare an overview of the Foundation's function and activities, the result was a lengthy discussion of the Foundation's role as the catalytic surface upon which development would occur—not as meddler nor as an active player in the game. The wisdom of that role grows more clear with each passing day.

Two months ago, we had just submitted our program and funding plan to National Marine Fisheries Service. Today, the food industry is actively creating products using surimi supplied by the Foundation. By last count there were more than 17 products under creation and refinement, ranging from restructured shrimp to a pickle and pimento loaf. A formulation guide, outlining the basic recipes for a number of surimi products, was prepared and distributed. A nationwide survey of selected food manufacturing sectors, brokers, and distributors was

undertaken to determine the potential niches for mince and surimi-based products. And ingredients manufacturers are actively pushing surimi so they can sell the ingredients.

The key now is to be able to carry through in the various connections and to supply the raw materials to further fuel the developing industry fire. At that point, industry will take charge itself. AFDF and the government must then stand back and refrain from meddling—or "assisting"—the industry in areas where it's not necessary.

The word is spreading; the network's connections are beginning to spark. Many of the program's participants are spreading the word to others. People with raw material or technical needs are seek out folks with a solution. 'Tis as it should be.

Chris Mitchell  
Executive Director

ing to *Business Week* magazine, would "generate national dialogue on how to make the U.S. competitive... and what the private sector can do for itself."

The commission's aim, supporters say, would be to accelerate, not replace, industry's decision-making processes.

But opponents to a national industrial policy fear it would make America's free enterprise system fall prey to bureaucratic Monopoly games.

The two schools of thought are miles apart, and apparently not coming closer together. Proponents of an industrial policy cite the tremendous growth Japanese industries enjoyed after WWII, when their government targeted several "sunrise" industries that they believed would blossom on the international market.

Other nations are now bolstering their industrial sector through similar programs—even, some suggest, creating false climates in the exchange rates for their own benefit. Can the U.S. expect its private industries—already suffering from domestic economic ills—to compete?

Can targeting certain high-technology industries for special assistance programs help keep the U.S. afloat in the international market? Does the government have the expertise to accurately target the right industries?

What agency in the U.S. government is qualified to determine which industries show the most promise in the world market?

continued on page 6



The Alaskan fishing industry throws away 71,708 round tons of fish "waste" that could be converted into valuable products.\* In a time when the fishing/seafood industry is strapped to make the best use of its resources, processors can't afford to ignore the potential profitability of fish by-products.

This guest column by TC Swafford, marketing specialist for Alfa-Laval, is the first of two scheduled to appear in the LodeStar. In this issue, the author briefly discusses some of the intricate aspects of developing a fish by-product industry, some aspects of production, and new technologies developing within the industry. In the next issue, Mr. Swafford has agreed to write an article about new reduction process trends, which will be of special interest to small plants.

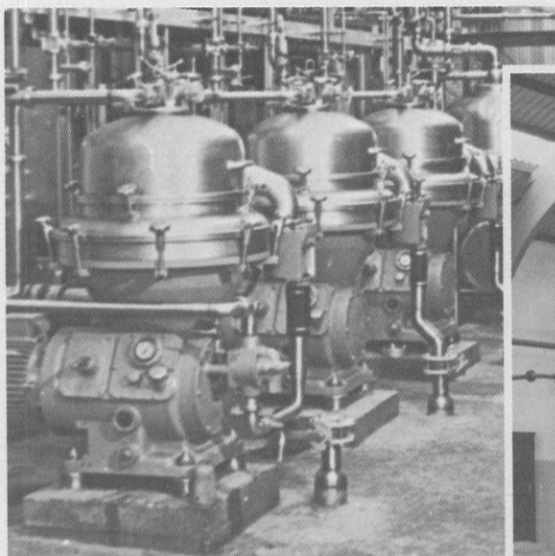
—Ed.

\*According to Leonard Lane and Associates, "Fish Meal and Waste Utilization Study," October, 1982.

by TC Swafford

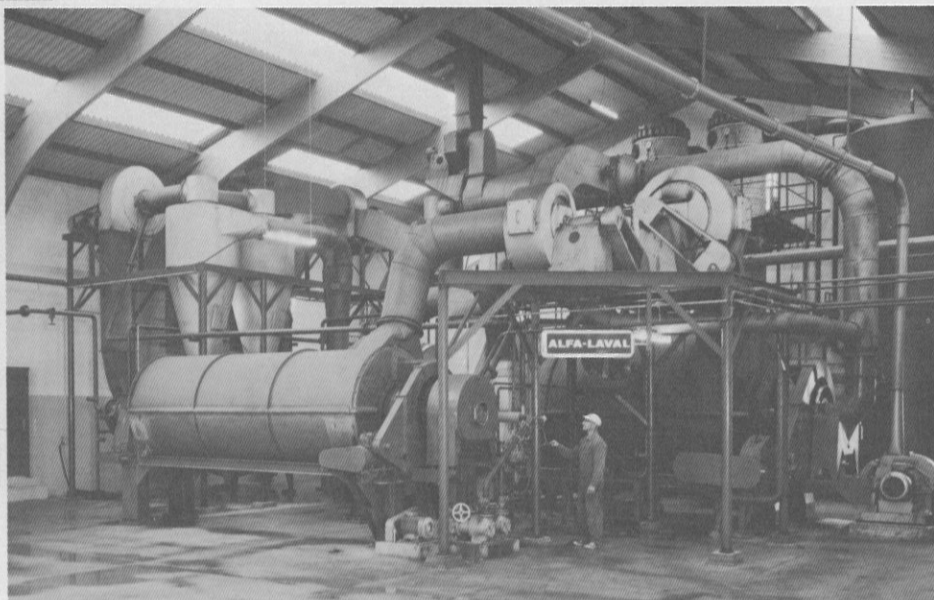
Imagine a contractor purchasing 1,000 tons of steel for a new building program, and then dumping 700 tons of that paid-for steel—at a dead loss—into a bottomless pit.

This is quite comparable to an Alaskan processor paying for 1,000



High-speed automatic Fish Oil Centrifuges separate salable oil from the fish slurry which has passed through the Meal Recovery Centrifuge.

Centrifish Process, below is a modularized by-products package plant for shore-based or floating installation. Special centrifuges recover meal protein and oil.



Photos compliments of Alfa-Laval

By-products utilization takes a number of forms in present-day plants. The concept of "market-mix" aids revenue by combining production of versatile standard fish oil and meal, solubles and animal feed.

Newer products that have also found a place in the market include feeds for fish hatcheries and fish-

barges or processor ships. Utilization of any by-products plant will depend on type and quantity of raw material, and periods of availability. Of course, continuous reduction-circuit operation offers significant operating cost advantages over the "batch" approach.

The accompanying illustrations demonstrate a complete, packaged,

modular pre-fabricated centrifish plants in Alaska at shoreside, using the same configuration most commonly used on floating processors. Based upon a reduction plant capacity of 100 tons per day (of offal, whole or broken fish, or of mushy, deteriorated fish), ten-year straight-line depreciation, personnel, labor, finished product

# Waste Watching: is Alaska throwing away a new industry?

tons of landed fish at a fillet plant, only to produce 300 tons of fillets. At current industry figures, most processors dump 70% of their already-purchased fish by-products—at zero revenue contribution—back into the sea.

This represents a substantial waste of the natural fishery resource, in place of performing economic by-products utilization. In addition to wasting the actual material, the loss also presents the processor with unnecessary negative impacts:

- break-even point is higher than necessary
- cost burden rests solely upon edible pack, needing a higher market price
- profit margin is eroded to maintain market share while competing with more efficient competitors, who may in turn be producing both food and by-products.

Virtually every successful fishery in the world combines the operation of an edible fish products plant with efficient utilization of by-products. The profile of the individual processor, and indeed of the entire fishery, would be aided significantly by the robust utilization of the available resource, rather than using only a fraction of the harvested, landed fish.

farming, liquid fish hydrolysates, and fish protein forms. As broad as the demand for these products is quickly becoming, the processors' marketplace is virtually worldwide.

Fish reduction processes utilizing whole fish and offal range from quite simple forms to a high degree of sophistication. Production of Alaskan by-products peaked in the 1950's, most profitably with herring and salmon. However, Alaska lost its market position to processors in other states and countries who became more competitive through modern technical advances. The Alaskan industry fell behind, while producers in other countries were able to boost their yields and reduce production costs through various means the Alaskan industry did not follow.

Today's changing technology is evidenced by the competitive foreign-flag floating processors, with their on-board reduction plants, so visible off Northwestern shores. A basic difference between the shore-based processors and these floaters is the level of industry commitment.

An examination of the style of reduction plant in most of these foreign-flag vessels may help the Alaskan industry in designing facilities for on-shore location, or for incorporation in new or modified

pre-fabricated reduction system as supplied aboard many of the floating processors, and to a number of shore-based plants as well. Because the system is so small, its space requirements permit its being easily lifted into a vessel; the entire system can usually be located within two vertical deck elevations. Its compact characteristics also make it an ideal system for shore-based plants.

Several new processing technologies have been developed in recent years to increase efficiency and improve product quality within the fish by-product production system. One is the Centrifish process, a system whereby oils are removed from the fish meal using centrifugal force.

The Centrifish process by Alfa-Laval incorporates special centrifuges at two stages in the process circuit. Continuous and automatic centrifuges use thousands of gravities of centrifugal force to break down the ground fish in seconds, producing premium meal and fish oil. Use of the centrifuge eliminates the old-style fish press. The process itself eliminates steam normally used for fish reduction, thereby not requiring the plant to provide boiler-feedwater treatment/supply for these purposes.

In early 1983, a feasibility study was outlined to base one of these

brokerage and shipping costs, and numerous other considerations, the shore-based centrifish showed good financial aspects. Even running as low as 25% loading, the discounted cash flow return on investment would be 8.8% after tax; at 50% loading, the similar return factor would rise to 29.5% after tax.

The studied plant would include all options, including odor-abatement, and approaching zero-discharge of aqueous phase sources. Such a plant would be suitable for location on a pier by a port authority group, for instance, wishing to attract processors to its region while creating local employment opportunities.

Fish meal and oil production can be an economically viable new industry, not only providing new opportunities for qualified industry groups, but also improving the efficiency of resource utilization. It is an industry that needs to be developed in Alaska.

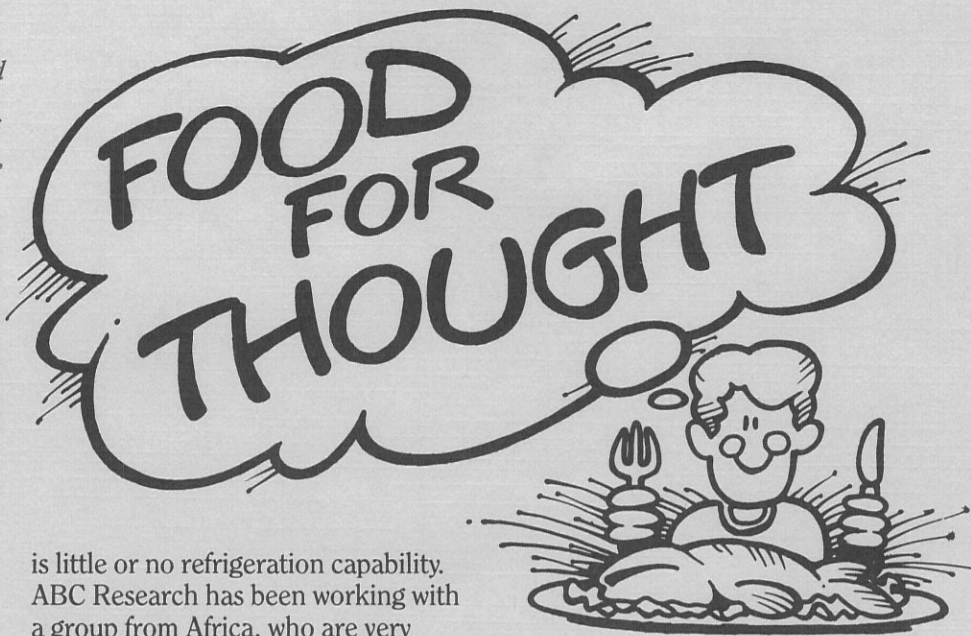
**ALFA-LAVAL**

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This series is a selection of excerpts from conversations with food researchers who are currently at work developing food products from Alaskan pollock surimi. Here we will discuss new food products of the future: their potential, our future needs, and the unique ways the U.S. food industry might create new answers to those needs in decades to come.

Sally Williams is the first. Product Development Specialist with ABC Research Corporation in Gainesville, Fla., Ms. Williams has been working with the Foundation as she and her staff research new concepts of surimi product development. Her comments focus on the kinds of food products that will have the most worldwide appeal in the near future.



**Lode Star:** What kind of foods are the industry researchers looking toward for the future?

**Williams:** They should all be foods that have both a domestic and a foreign appeal. They should be, at first, geared toward the domestic market, but have applications in other countries as well. In order to do that, they should have three things: they should include as much fish as possible in the formulations. Ideally, 50 to 100 percent fish. They also must be shelf-stable, (that is, have a long shelf life) so they require little or no refrigeration. And, in order to appeal to the poorer foreign countries, the products should be low-cost.

**Lode Star:** There a focus on feeding some of the less affluent countries with surimi?

**Williams:** High-protein products will be of great interest to other countries in the future—especially underdeveloped countries where there

is little or no refrigeration capability. ABC Research has been working with a group from Africa, who are very interested in this kind of product. They tell us the two most important things in a nutritious product are shelf-stability and low price. Alaskan pollock can fit into that scene very well.

**Lode Star:** What are some of the potentials applications in other countries?

**Williams:** Well, this is an area of great interest, and there are some products that I think would appeal to both domestic and international markets. These fit the criteria I mentioned earlier, and would also be tasteful and nutritious enough to be popular in the U.S.

The first is a fermented sausage, produced with lactic acid-producing bacteria culture. Like summer sausage and pepperoni. These low-moisture sausages have a healthy shelf life, and require little energy to keep for long periods of time. Made with Alaskan

pollock, they would also be more nutritious.

A second example would be dried fish chips, made with a corn or soy base. These might be formulated by mixing fish with the soy or corn base, and enhancing the flavor by coating the chips with some favorite spicy recipe, or cheese, or onion. The result would be like a corn chip, or like Nachos. The object, of course, would be to try and use as much pollock in these formulations as possible, to add to the nutritive value of the product.

Ethnic foods fit in well with these proposals, too. Tacos or burritos blended with fish would add nutrients. Mexican food, and cut down some of the highly fattened ingredients. Mix fish in with the filler of the taco, or blend it right in with the burrito or taco dough. It doesn't need to alter the flavor, but it adds a lot of protein. Surimi is 18 to 19 1/2 percent protein, so

it significantly enhances the nutritive value of the food. Especially if the major ingredient is surimi.

**Lode Star:** What kind of potential do these foods have with Third World hunger programs?

**Williams:** American programs like CARE and SHARE are constantly looking for a low-cost, highly nutritive food product to send to developing countries to combat the world hunger problem. In countries where they consume a lot of starchy foods—or pastries—surimi would really fortify their diet.

Once these other countries can learn about the nutritive qualities of the surimi-based food, they will prefer the high-protein product, and the market will begin to be developed. I think it's primarily a matter of educating the public, in both foreign and domestic markets.

**Lode Star:** Are other countries, though, as nutrition-conscious as the United States has become in recent years?

**Williams:** The United States is an increasingly health-minded country, because she can afford to be. She can afford to choose between the more nutritious product, and the less expensive one at the supermarket. Most Americans are pretty well educated about the nutritive properties of different foods. But in many other countries, consumers must take whatever they can get. These countries especially need access to inexpensive, high-protein food products that fit into

continued on page 7

## LOBSTER TO LUNCHMEAT (continued)

machinery manufacturers get involved. Ideas that were once technological sketches on the back of someone's drawing board are brought forward for closer scrutiny. A U.S. manufacturer has already developed a heat injection molding machine, capable of creating hi-tech simulated seafood products.

And the effect continues throughout the industry. The Foundation is presently working with

food ingredients manufacturers, whose interest in surimi-related ingredients closely parallels the pollock project.

Several are now distributing surimi-related ingredients to their contacts in the industry, and referring to the Foundation those companies they encounter who are interested in buying surimi.

The birth of an industry is happening before the very eyes of those who will profit from it in the future. As the project gains momentum, it becomes more evident that the industry itself is the motivating force behind growth and development. The "market-driven, industry-designed" approach outlined in the original Foundation plan is taking shape in the real world.

Rather than getting their cue from governmental regulations, plans, or procedures, participants in the pollock development program are learning from each other—through the natural interaction of the market, and also through surveys, like the one conducted by Ed Leonard of Emory University (See "Survey," pg. 5.)

The U.S. industry must move fast in the next few years to build a healthy foundation under this fledgling venture. As the rest of the world begins to recognize the potential of Alaskan pollock-based surimi in the U.S. marketplace, the domestic industry will face tough—and more experienced—competition.

Already, Kibun Co. Ltd. of Tokyo is building two surimi plants in the U.S., one on each coast. Accord-

ing to recent reports, a plant intended for Raleigh, N.C. is being delayed due to that city's strict waste water discharge regulations. But sources confirm that a second plant, based in Redmond, Wash., is now being built, and is scheduled to open before the end of the year.

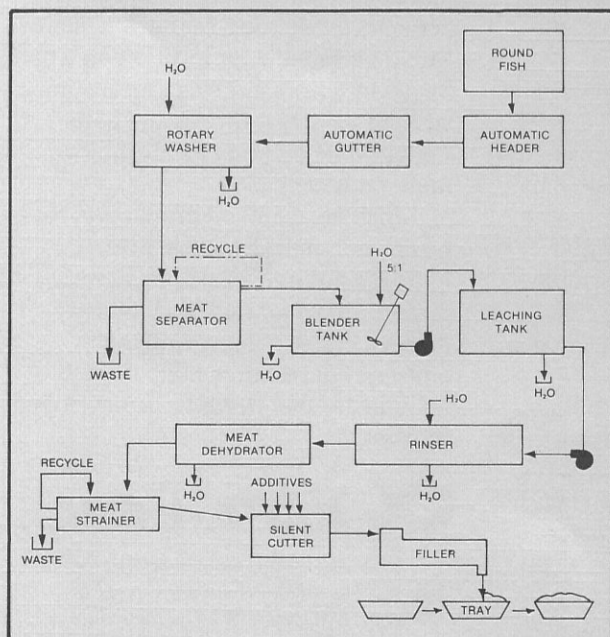
The Kibun plants are a good signal for the future of the surimi industry in the U.S. The very fact that one of Japan's largest food companies is spanning the North American continent to build two plants here strongly indicates the Japanese industry sees America as its stepping stone to the future. But the U.S. industry must move fast to catch up.

When the Foundation's pollock industry development program was first conceived, the production of a new surimi product like the pickle and pimento loaf seemed far in the future. Today, project participants realize how quickly the future actually happens; how fast new innovations become dependable technologies.

The Foundation's project at this stage, fueled by the industry's momentum, is working. The market is indeed designing its own industry; technicians and innovators are responding.

But the success of the pollock project is by no means sure. American companies trying to build a new industry from the ground up face a rough road ahead, frustrated by international competition and economic hardships at home. For those interested in creating a surimi industry, the work has barely begun.

But in this game of fast-ball with the already-existing surimi industry, we must leap to the chance to change our own future.



Continuous Surimi System, 10 Ton/Day



# RIGS

# & THINGAMAJIGS

As AFDF's Pollock Development Program multiplies in breadth and membership, it becomes increasingly clear to participants that the key to successful industry development lies primarily with the processing sector.

According to the plan, food development technologists are forging new paths for Alaskan pollock, in new forms and products. But it is the processors who will provide incentive for the fishermen and fish for the food market.

The processing industry has always seen pollock in a lesser light than other species: a technologically-intense fish too small for salmon or cod equipment, and too fragile to survive the normal processing line with any profit margin.

Foreign processors hold the advantage in pollock processing because they have the experience, the infrastructure, and the appropriate technology.

But U.S. interests have focused on pollock in recent years, and the technological advantage may swing in domestic favor in the future. Already equipment manufacturers are developing more sophisticated, varied machinery to handle round fish and other pollock products.

The first and most familiar finished product is fillets, and several equipment companies have built new pollock filleting machines recently. Neptune Dynamics makes a machine called SFA-4, which produces skin-off, boned fillets at 80 per minute. Claudon Equipment Co. has designed a filleter that Kathy Claudon says is made "to make pollock fillets easier and less expensive, with less waste." Claudon is still testing that machine, and expects it to be on the market soon.

"We have some preliminary designs of pollock machinery, but we're just waiting for the market to express the demand," she said.

Most processors say filleting—although profitable for larger-sized pollock isn't economically viable alone. The small fragile fish requires less labor-intensive processing that will provide higher yields for less work.

Pollock, averaging about five or six pounds, is very fragile and easily damaged or bruised if overhandled. Its nature demands that it be processed and refrigerated almost immediately after harvesting.

The process most in need of development, pollock processors say, is grading and sorting of whole fish. Several existing machines are capable of handling fish in a variety of sizes, but the efficiency decreases exponentially on either side of the size spectrum. Most machines are significantly

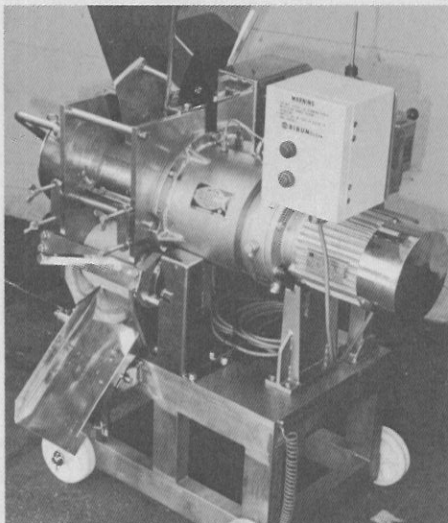
photocells to measure size and weight class. As fish pass through, they are checked by the photocells for the proper number of weight/size "bleeps." Fish are distributed down a conveyor past a series of these photocells mounted on a swing gate for classifying the fish.

may help pollock processors sort and weight their product.

"The ideal is to have a sorter that would separate large fish for filleting and small fish for mince," said Claudon.

Pollock processing is in several aspects similar to that of whiting and herring—two industries the pollock processors could adapt much from. Equipment manufacturers dealing with entirely different industries are also beginning to show interest in developing technologies to aid the pollock industry. Other food equipment companies—even a sand and gravel sorting machine manufacturer—are looking toward the fledgling pollock industry as a way to profit from future innovations.

These new sparks of interest from equipment builders—Claudon, Ryan, Baader, etc.—and the processors themselves, are the first step toward turning seafood's newest industry into a viable means of support for pollock processors.



less efficient handling very large or very small fish than handling those in the narrow margin called "average." With easily-damaged pollock, that factor alone diminishes the profitability of the large-volume, low-price pollock.

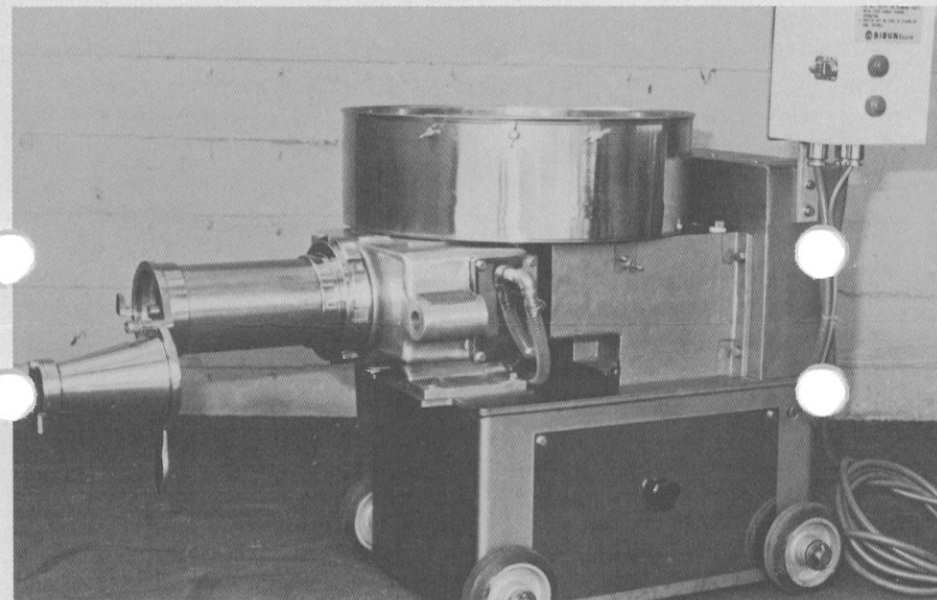
Ryan Engineering, Inc., working with Nippon Fillastar of Japan, is developing a vibrating pollock feeder which sorts, orients, and singulates pollock before they enter the heading and gutting machine. The vibrating feeder handles pollock between 15-24 round inches, at 50 fish per minute, vibrating in an "elliptical mode" that moves and orients the fish in the same direction, using the scale structure resistance to line them up. The machine sorts those fish not facing the same direction, and re-feeds them through the system. The fish are then singulated, with bellies facing to the right, and through a series of waterfalls are turned 90° and prepared for automated heading and gutting. A second machine made by Nippon Fillastar heads the pollock as they pass through the conveyor. The fish are then rotated, split up the belly, gutted, and the backbone removed—all without any handling by the crew.

"The machine has been undergoing shop and sea trials," said Bob Ryan, president of Ryan Engineering. "Right now it's being tested aboard a Japanese ship, and we're not sure what those results will be yet." Ryan could not say when the machine would be ready for marketing in the U.S., but did announce recently that the \$25,000 feeder would be available for viewing at Fish Expo in October.

Cabinplant International builds a grading and sorting machine using

Batching is another service by Cabinplant International. Using a computerized weight system, the machine figures the weight class of the fish, and the number of fish in each batch.

Icore makes a Checkweigher 1700 Series, which performs the "general duty of weight inspection and control" Sort-Rite, Metramatic, and Temco, Inc. all produce fish weighing systems that



TMN-18 Skimmer SUM-420 strainer used for pollock as well as other species. photos courtesy of Ryan Engineering

*"When the only tool you have is a hammer, everything begins to look like a nail!"*

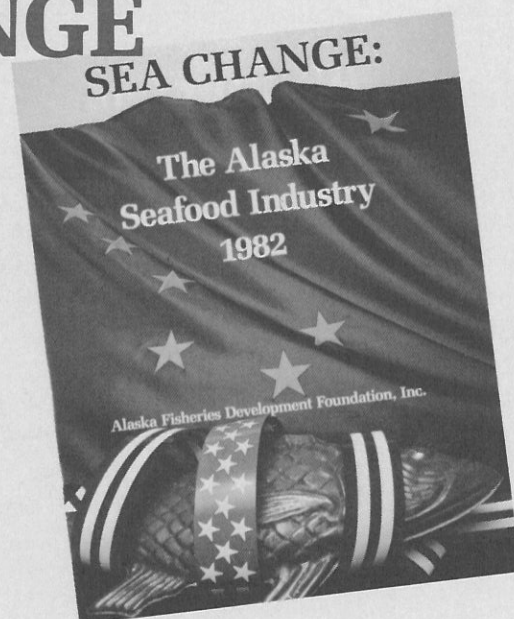
—Abraham Maslow

## SEA CHANGE

### SEA CHANGE:

AFDF has published *Sea Change: Fisheries of Alaska 1982*, an annual look at the progress of Alaska's fisheries and the future the industry faces. The book, written by Natural Resource Consultants, covers seven of the state's major fisheries, and changing factors that influence fisheries development.

Order the book for \$10 through the AFDF office, 805 West Third Avenue, Anchorage, Alaska 99501.





# Foreign Phase-Out Bill Sparks U.S.-Japanese Summit

Representatives of the U.S. and Japanese fishing industries will meet this fall to debate face to face their positions on Sen. Ted Stevens' Exclusive Economic Zone act, which calls for the complete removal of foreign fisheries from U.S. waters by 1988.

The bill, introduced to the U.S. Senate by Stevens (R-AK) in March, is an effort to implement an exclusive economic zone within 200 miles of the coast, affirming U.S. sovereign rights within that zone.

According to the bill, foreign fisheries would be phased out of the exclusive economic zone by diminishing the total allowable level of foreign fisheries (TALFF) by 15 percent every year. During the 1984 harvest season, the TALFF would decrease to 85% of that of 1983. By 1985, 70% of this year's TALFF would be allowed—and so forth. The act concludes, "No foreign fishing shall be permitted in the exclusive economic zone after the close of the 1987 harvesting season."

The bill came on the heels of a presidential proclamation claiming U.S. ownership—not just management rights—of most fish and mineral resources within the 200-mile zone. Stevens said the proposed legislation, manifesting that proclamation, would

increase domestic involvement in fishing and mineral developments off the east and west coasts.

"This bill would aid and encourage more Alaska participation in the developing fisheries off our shores," Stevens said in an article in *The Anchorage Daily News*. "It would also assure that we receive the full benefit of future development of minerals and seabed mining off our coastline."

The bill, though unanimously supported by the Alaskan Congressional delegation, has sparked some controversy among foreign companies currently involved in Alaska's fisheries.

"We think this is a very important bill, and we are in the process of forming a response," said Kenji Nishihara of Japan Fisheries Association.

Nishihara and Robert Morgan, executive director of Pacific Seafood Processors Association, were

scheduled to present a forum discussion on the bill in this issue of the *LodeStar*. But discussions about presenting position papers for the *LodeStar* sparked, instead, an unexpected request by the Japanese fishing industry for a negotiational meeting between the two industries.

"We were discussing our position in my office one day, when Mr. Inouye and Mr. Saito from the Japanese Foreign Office walked into the room," Morgan said.

The Japanese delegation requested an industry-to-industry meeting between PSPA and Japanese representatives to debate the bill and work toward reaching a cooperative approach toward the plan.

"This is the first time the Japanese have ever stepped off the center line,"

Morgan said. "They're a little unsure of their position, and they're willing to negotiate."

The meeting is tentatively scheduled for early fall.

"I don't want to get into a confrontation situation," Morgan said. "When the phase-out happens, we're going to need Japanese support. That's where the market is; that's where the technology is."

Morgan prefers not to associate the phrase "phase-out" with the legislation. "We're not trying to phase anybody out—we're trying to phase the U.S. in, because it's our resource," he said.

"The primary concern here is that all parties recognize this is a U.S. resource. It's not a matter of diplomatic negotiation. We own it"

## Private Industry V S Public Assistance (continued)

Chris Leach, former editor of *Inc.* magazine, wrote in his last editorial column: "... Our government, good intentions aside, doesn't have a way to identify, promote, and nurture young technology companies."

Leach's comment precedes an *Inc.*

article about a young corporation called Imre, which was turned down seven times by SBA for a \$250,000 guaranty loan through Rainier Bank of Seattle. Despite the fact that Imre proved to have industry support, a guaranteed market, reliable suppliers

and good management, the SBA determined that Imre was not likely to succeed with its new product—a Prosorba blood filter that may cure cancer.

"In this environment ... I think any innovative company has got an uphill road," said Imre attorney Jere Glover, a former SBA official himself.

In a high-tech age when research laboratories are producing technologies that bank officers have never even heard of, a government industrial policy may hinder the natural progress of industry more than it helps.

The current business climate reflects a strong resistance to "help" from the government. The free enterprise system, many feel, has its own natural competitive edge, and its own development process that follows the market—not governmental executive decisions. Over-regulation and targeted supervision of certain industries can spell disaster. The free market is a jealous tyrant and will not be dictated to—least of all by government.

Many industry leaders feel that government bail-outs and loan guarantee programs create a false economic climate. "Playing God" with industry can create artificial incentives, and cause other industries like Imre an untimely demise.

In addition, the staunch defenders of free enterprise fear that any governmental involvement in private industry

provides too much opportunity for the politically powerful to meddle in industry's pockets.

Most agree that industry in the U.S. needs a boost to gain power on the international market. Laborers and executives nationwide have expressed the hope that industry can pick up fast, before the cost in human suffering gets any dearer.

A quote from *Business Week* says: "Government can't and shouldn't try to do everything, but it can do much more to help the private sector regain a competitive position in the world economy."

The balance, this suggests, is between challenging and interfering. That paradox is crucial to the future of the American industry. The private sector needs assistance toward re-grouping in forces strong enough to be competitive against countries who enjoy a large boost from their governments.

But the government must recognize that its agencies are not experts; the expertise resides in the private sector. It must assist without interfering, challenge without destroying and encourage without building a false foundation.

Business leaders across the nation agree that government must be helpful enough and yet flexible enough to respond to the needs of American industries that are changing faster than it is.





Editor's

# OFF the CUFF

*"Anything that is theoretically possible will be achieved in practice, no matter what the technical difficulties, if it is desired greatly enough."*

—Arthur Clarke

Futurist Arthur Clarke also said, "We can never run out of energy or matter, but we can all too easily run out of brains."

Barring that phenomenon, the future of world technology is as wide open as the human imagination. This applies to space travel, energy research—even the future of food technology.

Rudyard Kipling predicted the possibility of air travel at 300 mph by the year 2000. H.G. Wells dated the first round-the-moon voyage in the year 2054.

In predicting the future that we now live in, author Gerald K. O'Neill said, most "underestimated both the spread of governmental inefficiency and the rate of technological change."

In fact, as accurate as some of these sci-fi predictions turned out to be in picturing the future (Jules Verne's *Trip to the Moon* was appallingly similar to the actual Apollo 9 voyage a century later) the only misconception was the rapidity with which the world would adopt these new technologies.

O'Neill's suggestion is that most future watchers through time—from Leonardo Da Vinci to the Pioneer 10 designers, conceived of ideas that were feasible using technology that was already available while the ideas were still dreams. The interval, however, between a fundamental

technological discovery and its widespread application in the world is a long time.

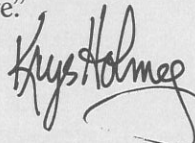
Today's jumbo jet is simply the result of the union between the Wright Brothers' glider design of 1900 and Parsons' turbine engine, invented in 1884. But its application wasn't actually widely used until many years after those two technologies were available in the world.

The act of invention, O'Neill implies, is the art of rubbing several technologies together to set spark to a new idea.

This notion is paralleled in the design of the human brain, according to neurologist Lewis Thomas: "For all the things we will ever see in the universe, including things not yet thought of, the human brain possesses one or another prepared, aware, knowledgeable cluster of connected neurons, as ready to lock onto that one idea as a frog's brain is for the movement of a fly."

That puts today's technological tomfoolery in a serious light. For every new advancement we make today—in technology, methods of strategy, or in understanding new ideas—the world awaits with something equally exciting in store.

As O'Neill says, "The future is potentially even more exciting than the past, so that we should meet it with courage and a spirit of adventure."



Krys Holmes  
LodeStar editor

## Food for Thought (continued)

their diet and their native technology. And that's a market we shouldn't forget.

Once people in America and other countries become aware of the variety of product types that can be manufactured using mince and surimi, and understand the difference in nutrition to the human body, they're going to become excited about the contribution these foods will make to the world.

They just need to be educated ..."

## Joining the Ranks

International Seafoods of Alaska, Flohr Metal Fabricators, Inc., and Ryan Engineering all became members of Alaska Fisheries Development Foundation recently, joining the growing number of firms becoming involved in the development of the fishing/seafood industry as it heads toward the future.

Bob Ryan, president of Ryan Engineering, was also named the official engineer for the foundation's Pollock Development Program, and will provide technical information and engineering expertise for several phases of the program.

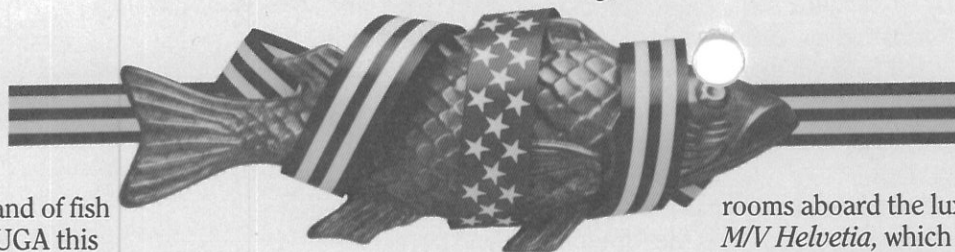
AFDF welcomes these new members. We encourage other interested companies to apply for membership.



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# anUGA



There's a new brand of fish making its way to ANUGA this October. The mottled, copper piscean was "harvested" by Seattle designer Bob Bowser for the world food fair in October. The fish is the central figure in a powerful logo Bowser designed using the fish and the American flag to represent all the fisheries of the United States.

The fish is a universal species, purposefully generic, to represent both Atlantic and Pacific fisheries, and designed to strike a universal note that speaks to the entire seafood industry. The fish is "swimming" through a star-spangled banner representing American waters.

"The fish is encompassed by the symbolic red, white and blue," Bowser

## Spawns New Logo

explained when he unveiled the artwork for AFDF in June. "Thus you have a symbol of a universal fish swimming through American waters. The image comes across without using any words."

As ANUGA draws closer, participants should be thinking about hotel accommodations, which can be expensive and scarce during the fair.

The Foundation has reserved

rooms aboard the luxurious hotelship *M/V Helvetia*, which will be moored on the Rhine River directly across from the fairgrounds. A Class A cabin costs \$1100 for 7 days, or \$157.15 per day, and includes a continental breakfast and ferry service to the fairgrounds.

A Class B cabin (with shower down the hall) costs only \$85.72 per day. In each case, cabins have two beds so costs can be shared between two people.

The *Helvetia* boasts two restaurants, a lounge, and a pool for your comfort, and can also accommodate private receptions.

Booking rooms on the floating hotelship may be smart for ANUGA participants this year. But book now; staterooms are going quickly.

## SURIMI SURVEY

To at least one-third of the food industry, surimi-based products are as foreign as subgum soup.

A survey conducted over the past two months by Ed Leonard of Emory University indicates that despite the sale of thousands of tons of simulated crab legs and imitation scallops in the

U.S. in 1982, 35% of the food industry remains unaware that surimi products exist. "Lack of awareness is the most critical problem .... Leonard said in a preliminary review of survey results.

The survey was conducted under the auspices of AFDF's pollock project, in an effort to assess industry

awareness of surimi products, and analyze initial product impressions, market demand information, future market forecasts, and general industry interest in restructured surimi products.

Second to low industry awareness, the surveyors said variable product quality was a significant problem. The most important discriminating factor between products was texture, participants said. Most respondents felt that

because of their "superior texture" and highly competitive price, surimi-based products may take over markets from conventional extruded seafood products and traditional fish items.

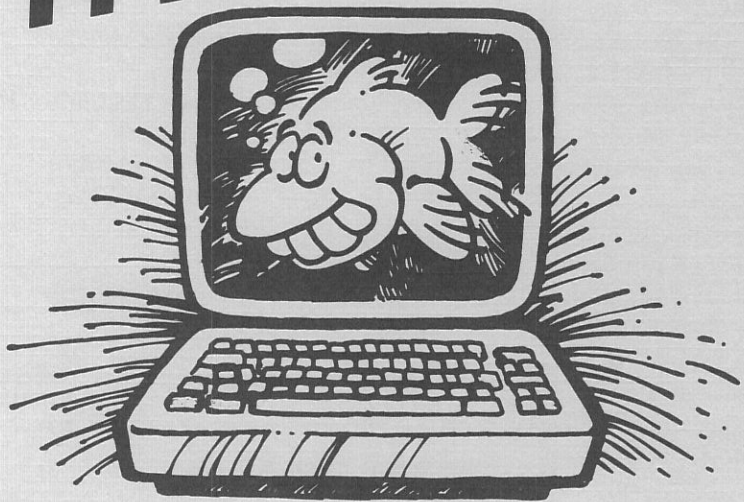
Others said they fear improvements in the shrimp and crab fisheries will decrease the price of real shellfish,

continued on page 8





# ON THE HORIZON



Research and development is a sometimes nebulous division of industry that fiddles with the future of America's production scheme. R&D is the orphan division of the U.S. industry, honored by some and ridiculed by others. It is sometimes seen as a rather expensive and frivolous expenditure on random experiments with new ideas, and sometimes seen as industry's single most important tool for growth and development in the future.

The recession halted some of this forward thinking; for several years, U.S. industry focused more on surviving the present than on planning for the future. And necessarily so, according to some. But that trend is changing, reports *Business Week* magazine. U.S. spending for research and development rose in 1982 by 11.5% over 1981. In spite of public concern that the U.S. is losing its "technological edge" to other countries like Japan, *BW* reports that the U.S. still tops all nations in research and development spending.

## SURIMI SURVEY (continued)

thus recapturing much of the market from surimi products.

A majority of industry participants affirmed that the new products should be presented to consumers in convenient forms, easily thawed, and attractively presented. Some companies indicated that high nutritional value without additives was the strongest selling point for products made from surimi or minced fish.

Buyers seemed highly concerned about having enough "real" shellfish in

the product to allow names like "Alaskan King Crab and Other Seafood Delicacies" on the menu or label. Retailers seemed less concerned about the percentage of "real product" than buyers were; but they were concerned about market acceptance of a totally "imitation" product.

By far the biggest selling point of surimi-based products, in the industry's eyes, is its competitive price. Initial analyses of the survey results suggested there may be price battles in a U.S. surimi industry, as the larger firms campaign to gain market shares and establish customer franchises.

"In absolute terms," the article reads, "including military R&D, the U.S. is spending twice what the other major Western countries and Japan spend combined."

Some might call this proof of the pudding. It cements the theory that the U.S. comes up with all the good ideas; all the Japanese and other countries do is figure out how to make it cheaper, better, faster, smaller, and run on batteries.

The top five American companies who cashed in the most chips for research and development in 1982 were General Motors, AT&T, IBM, Ford Motor Co., and Du Pont. (General Motors alone spent nearly \$2.2 billion.) As a unified industry, the computer-related companies brought in the most impressive averages in R&D spending.

A look at the food and beverage industry shows food product development trailing by many millions of dollars. The top spender, General Foods, budgeted \$109.9 million for R&D, or about 1.3% of their total sales for the year.

An industry-wide composite shows an average of 0.7% of sales channeled to research and development spending, or about 18.4% of profits. The entire sector of the food and beverage industry researched in the article spent \$669 million on R&D in 1982, a 16.3% rise over 1981.

But that total figure, significant as it may seem alone, represents only 14.2% of the total amount indicated in a comparable study of the computer industry for the same year. And the food industry earns 130% as much in sales as the computer industry does.

According to the *BW* article, U.S. industry spent \$35.8 billion in R&D in 1982, an average of \$2,562 per employee.

The tax advantages of R&D spending speak for themselves. But maybe the computer industry is trying to tell food companies something they should listen to.

This preliminary analysis, though not yet conclusive, indicates the market is far from saturation, and that as the formulations and processes of creating surimi-based foods improves, this new industry may make a big splash in the U.S. marketplace.

Leonard's analysis concludes: "Most feel ... there will always be a substantial niche for restructured products, even in the glut years for real products. "Producers, however, should plan for volatility of the market ..."

A more conclusive, final report on the survey will be available through AFDF in mid-August.

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AFDF maintains a library of fine publications to foster the constant flow of information within the industry. We're happy to share them, at cost, with anyone interested in learning more about new changes in the fish/food business. Please contact our office to order copies:

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ter • mi • nate. (end, close, conclude, finis, finish, finale, stop, cease, expire, halt, tip, nib, point, tail end, peroration, denouement, curtains, quietus, halt, pass away, run out, kick the bucket, buy the farm, shut up shop, ring down the curtain, cash in the chips, period.)

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