INTERNATIONAL

CANADA & U.S. AGREE ON RECIPROCAL FISHING

On April 24, 1970, Canada and the U.S. concluded an Agreement on Reciprocal Fishing Privileges. It was signed for Canada by Dr. A. W. H. Needler, Deputy Minister, Department of Fisheries and Forestry, and for U.S. by Ambassador Donald L. McKernan, Special Assistant for Fisheries and Wildlife, Department of State.

Amb. McKernan was in Ottawa for the annual meeting of the Inter-American Tropical Tuna Commission. ('Department of External Affairs,' Canada, Apr. 24.)

COMMON MARKET SETS 1970 IMPORT QUOTAS FOR TUNA AND COD

The following import tariff quotas have been established by The European Communities (Common Market) for fishery products in 1970: 53,000 metric tons of fresh, refrigerated, or frozen whole, headless, or sliced tuna intended for canning. Final 1969 quota was 65,000 tons.

Cod: 34,000 tons of whole, headless, or sliced, salted, pickled, or dried. Final 1969 quota was 39,500 tons. (U.S. Mission to EC, Brussels, Apr. 28.)

AUTOMATED PLATFORM WOULD CUT FISHING COSTS, BCF EXPERT SAYS

An automated fishing platform to catch and process fish virtually without fishermen was proposed to an FAO meeting as a way of exploiting coastal fisheries, which are otherwise uneconomic.

The suggestion was contained in a paper prepared by E. F. Klima of BCF Exploratory Fishing and Gear Research Base, Pascagoula, Mississippi, for the FAO technical conference on fish finding, purse seining, and aimed trawling held in Reykjavik, Iceland, May 24-30.

Klima cited the problem of steadily rising fishing costs and the need to catch more fish to meet growing world needs.

The Platform

His automated platform would be equipped with underwater lights anchored in the depths to tentlike, submerged, rafts. The lights, moving upwards in sequence, would lure the fish below to a pump intake. They would be kept together by an electrical field.

Once aboard, the catch would be reduced to fishmeal and oils. These would be stored in "Piggy-back" containers for retrieval at weekly intervals by motherships or helicopters. This method, said Mr. Klima, would allow small industrial fish to be caught for less than half the current cost.

Lights Used For Years

Lights have been used for many years in commercial fishing. BCF scientists at Pascagoula have used them for the past 10 years to attract herringlike fish for use as tuna bait in Gulf of Mexico and Atlantic Ocean. In 1966, submerged lights attached to a fish pump were used along lesser Antilles in the Caribbean for sampling pelagic fish; at one point, catch rates reached a peak of 900 to 1,800 fish pumped per minute.

USSR

In USSR, in recent years, sprat in Caspian Sea and saury in Sea of Okhotsk have been harvested with lights, fish pumps, and nets.

Other experiments have demonstrated that fish can be concentrated for catching by using pulsed, direct-current electricity--and that small submerged rafts can attract large concentrations of coastal pelagic fish.

These results, Klima added, show possibility of building and using automated platforms--using a combination of lights and submerged rafts--to catch small pelagic species for industrial purposes.

Plans for building a platform are under way at Pascagoula, Klima revealed.

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COMPUTER CAN SPEED FISHERMEN TRAINING, SAYS BRITISH EXPERT

Fishing training could be speeded through use of a 'computerized simulator' that would reproduce actual operations and situations aboard fishing vessels. This was theme of a paper prepared for FAO's Technical Conference on Fish Finding, Purse Seining and Aimed Trawling held in Reykjavik, Iceland, May 24-30.

The paper was written by R. Bennett, Industrial Development Unit, British White Fish Authority in Hull. He discussed need for improved education and training to keep abreast of advances in fishing technology during past 15-20 years. He warned of growing gap between technology and training. Most fishermen still must rely on hard-won experience.

Training Simulator

A training simulator would enable trainees to "fish" on an imitation fishing ground, or several grounds, under "actual" conditions. All navigational and fishing aids normally found on a fishing vessel would be built into the simulator; it would be based on a digital computer with a library of tapes. Each trainee would occupy a cubicle with its own set of instruments. He would maneuver the vessel and gear as though he were in an actual fishing situation.

The system could be programmed to provide trainees with options and alternatives that can arise even in a single day's operation. They would have choice: spend time changing a trawl to suit a possibly short-term behavior of fish, or keep fishing with same trawl at reduced catch rate, or move to another ground.

Trainees could compete to see who gets best "catch."

Study Development of Simulator

Bennett says that the White Fish Authority is studying development of such a simulator over the next 2-3 years. The Norwegian Fisheries College has begun similar work. The main limitation is high cost of constructing a system that can reproduce faithfully all situations and variables in fishing.

The increasingly complex equipment and techniques in fishing are forcing a change in attitudes in fishermen's training, FAO states. It is no longer feasible economically to have skippers learn how to use new instruments at sea. Simulators help to teach some aspects of fishing on shore in a shorter time and more cheaply, as Bennett indicated.

In recent years, trawling and purse-seining techniques have been affected profoundly by developments in fish-finding equipment, such as echo sounders, sonar and netsonde. This equipment has paved way for midwater trawling, aimed bottom trawling, and purse seining for deep-swimming schools. At same time, hydraulic equipment for handling heavy gear with big catches have come into use. This eliminated old restrictions on size of gear and catches that could be handled. It opened new and important fisheries.

BERNARD SKUD HEADS HALIBUT COMMISSION INVESTIGATIONS

Bernard E. Skud, for past 10 years director of BCF's laboratory at Boothbay Harbor, Maine, was named Director of Investigations for International Pacific Halibut Commission on May 19. He succeeds F. Howard Bell, who retires July 4 after 45 years. Mr. Skud will take over in late summer.

Skud served BCF 20 years. His immediate fields of research have been population dynamics, marine biology, and estuarine ecology. He has served as scientific advisor to International Commission for Northwest Atlantic Fisheries.

Market place of Rach Gia, S. Vietnam, major fishing port on Gulf of Thailand. (Keith Brouillard)

RACH GIA: THE MARKET PLACE

Fig. 1 - Shrimp Sellers.

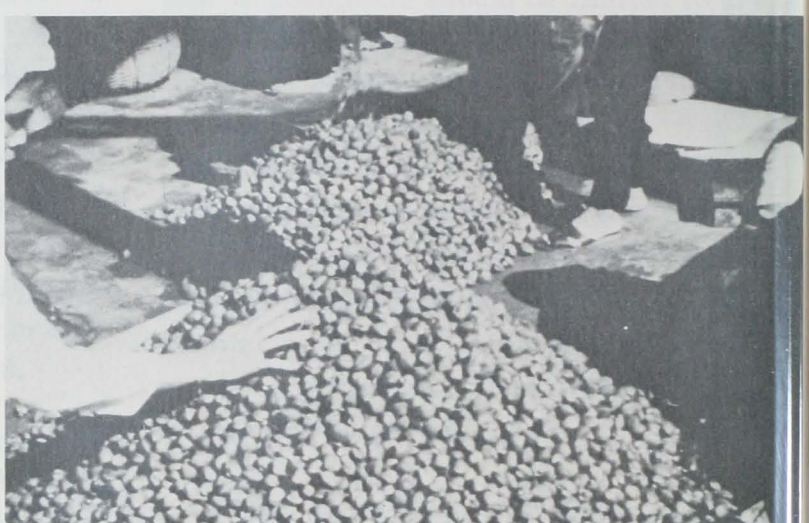

Fig. 2 - Clams for sale.

Fig. 3 - Red Snappers.

Fig. 4 - Preparing fish for Nouc Nam (fish sauce).

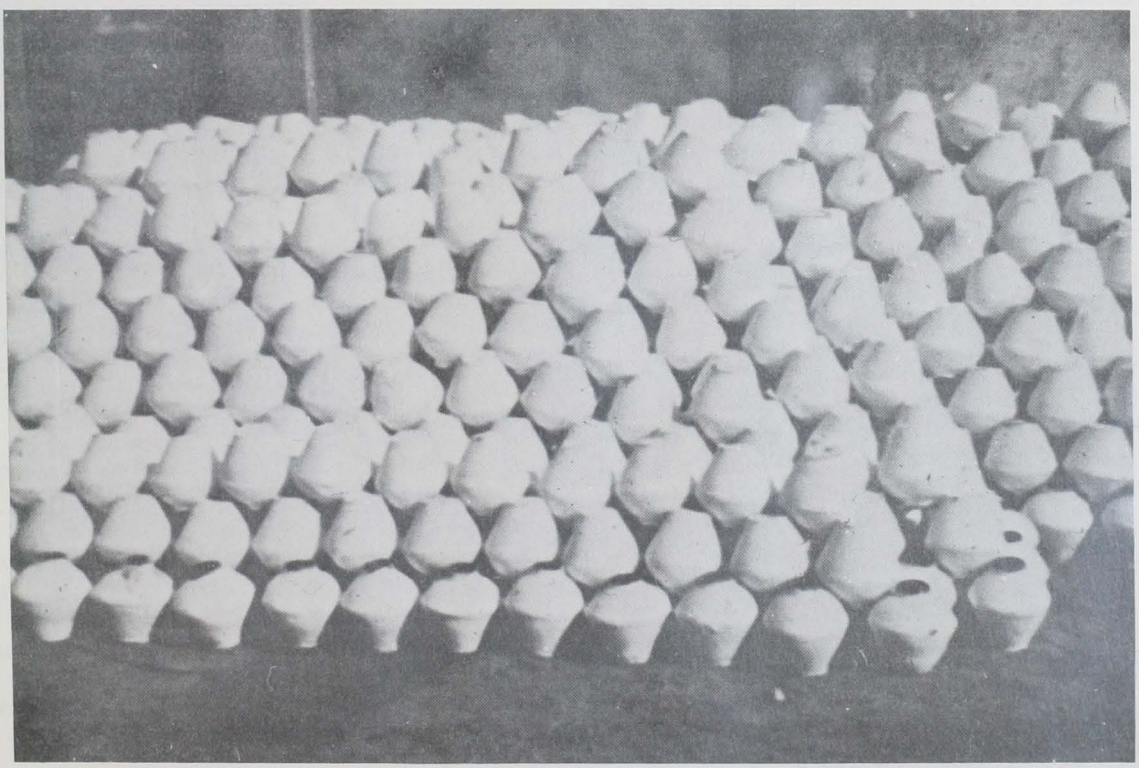

Fig. 5 - Clay jars for Nouc Nam.

Fig. 6 - A Fishery Problem: Unloading fish by hand at low tide (Vung Tau).

Fig. 7 - Typical construction methods for popular type of fishing boat (Phan Thiet).
(All Photos: Keith Brouillard)

ASIA

JAPAN

UMMER ALBACORE TUNA FISHERY TARTS SLOWLY

The 1970 Japanese summer albacore tuna shery has started much later than in normal ears. This is due to the slow northward ovement of the Kuroshio current.

Since early April, small, sporadic catches ave been made off Japan. But most pole-and-ne vessels hesitate to switch to albacore shing; these are still concentrating on skip-ack in more southerly waters, where fishing ontinues good.

rices Up 20%

At the end of April, the price for summer lbacore was quoted at exvessel US$655 a hort ton--about 20% above last year's early eason $544. Practically all landings were eing bought by domestic tuna packers. ('Sui-an Tsushin,' Apr. 28.)

* * *

LBACORE TUNA BRINGS IGH PRICES

About 20 metric tons of pole-caught alba-ore tuna landed in mid-April at Yaizu, Japan, old for exvessel US$600-630 a short ton for sh 24-37 pounds each.

The albacore were caught off Bonin Islands, here about 20 live-bait boats were fishing. ome boats take 4-5 tons on good days. But shing is generally poor because the albacore re too deep for pole-and-line fishing. ('Kat-uo-maguro Tsushin,' Apr. 15.)

* * *

LBACORE TUNA EXPORT RICE SPIRALS

Japanese frozen round albacore prices for irect export to U.S., steady since 2nd-half 969 were quoted at a high of f.o.b. US$630-45 a short ton. This is equivalent to about 675-690 a short ton, c. & f., U.S. west coast elivery.

Why Prices Spiral

Japanese trading firms attribute spiraling rices to poor U.S. albacore fishing in 1969, and to slow start of Atlantic fishery off Angola this year.

Japanese export prices for direct yellow-fin (gilled & gutted) shipments to U.S. in mid-April were quoted at around $560 a short ton, c. & f. ('Suisancho Nippo,' Apr. 18.)

* * *

TUNA FISHERY VENTURE IN WEST INDIES IS STABLE

The Japanese cold-storage firm Nippon Reizo established a tuna base on Saint Martin Island, Netherlands Antilles (West Indies) in 1963. It now reports stable operations.

The enterprise is managed by Curacao Pioneering Co., which is capitalized at US$ 283,000, a local firm wholly owned by Nippon Reizo. It has a 1,000-ton-capacity cold storage and a 1,100-gross-ton freezership anchored offshore.

Buys From 15-20 Vessels

The base annually purchases from 15-20 longliners, operated mostly by South Korean and Taiwanese nationals, around 8,000 tons of tuna for export to U.S. During past several years, the Saint Martin venture has yielded annually a 5% dividend to stockholders. Of over 40 Japanese fishing firms abroad, it is one of 10 operating profitably. ('Suisan Tsushin,' Apr. 14.)

* * *

1969 EXPORTS OF MARINE PRODUCTS DROPPED 1.2% FROM 1968

In 1969, the value of Japanese marine-product exports was US$346,769,000--down 1.2% from 1968's $350,633,000. In 1967, these exports fell markedly (9.1%) for first time. However, exports in 1968 increased 7.5% over 1967.

Frozen-Fish Exports Fell

The 1969 decrease was due to decreases in frozen fish: yellowfin tuna down $9.94 million, other tuna down $1.05 million, and molluscs down $1.71 million, and canned products (salmon down $20.24 million, and crab). Decline in the exports of salmon and crab fell

JAPAN (Contd.):

Exports of Marine Products

	1969	1968	Percent 1969/1968
		US$1,000	
Fresh and frozen	85,999.6	90,703.3	94.7
Dried or salted	12,093.5	8,922.7	135.5
Canned and bottled	178,283.2	185,869.4	95.9
Aquatic oils and fats	5,068.8	3,806.6	133.1
Pearls	48,639.7	46,802.4	103.9
Kanten	4,480.1	4,816.8	91.5
Other	12,204.8	9,712.1	126.4
TOTAL	346,769.7	350,633.3	98.8

because international restrictions were strengthened. The decline resulted from strong domestic demand.

Dried or salted products, aquatic oil, and other marine products increased over 1968; pearls remained unchanged. ('Suisancho Nippo,' Mar. 5.)

* * *

U. S. TUNA IMPORTS DROPPED IN 1969

In 1969, the U.S. imported from Japan 156,245 short tons of fresh and frozen tuna. This included loins and discs but excluded tuna deliveries to American Samoa. It was somewhat less than in 1968, reports the Japan External Trade Organization.

Imports Down

Imports from Japan declined sharply from 1968. They totaled (1968 figures in parentheses): 75,544 tons (96,482 tons), consisting of albacore 43,068 tons (37,869 tons), other tuna 31,411 tons (54,991 tons), and loins and discs 1,065 tons (3,622 tons).

Why Decline

The decline in imports from Japan is attributed to: (1) reduced landings of albacore and other tuna by Japanese fleet; (2) vigorous tuna demand in Japan; and (3) sharply reduced Japanese tuna sales to U.S. because of numerous claims by U.S. packers for yellowfin shipments in late 1968.

U.S. Demand Up

Although shipments from Japan declined, the U.S. demand for imported tuna rose sharply in 1969. This pushed up prices for U.S. domestic catch and imports.

Albacore prices for imports from Japa rose from US$515 a short ton, c. & f., in Jan uary 1969 to $565 in June. It continued upwar thereafter, reaching $625 a ton in Januar 1970. ('Suisan Tsushin,' Apr. 18.)

* * *

HAS 397,279 FISHING VESSELS

On Dec. 31, 1968, Japan had 397,379 fish vessels totaling 2,415,420 gross tons (inclu ing fresh-water vessels), according to Fish Vessel Section of Fisheries Agency. This a decrease of 723 from 1967, but a rise tonnage of 39,909 tons.

Type of Vessel	Number	Total Gross Ton
Powered vessels (subject to registration)	253,544	2,315,130
Nonpowered vessels over one ton (subject to registration)	11,426	20,931
Nonpowered vessels under one ton (exempt from registration)	132,309	79,359
TOTAL	397,279	2,415,420

During past 10 years, number and gros tonnage of powered fishing vessels increased Nonpowered vessels decreased: in 1968, 40 in number and 50% in gross tons from 229,89 and 212,536 gross tons in 1958. Gross ton nage for powered fishing vessels exceede that for nonpowered vessels in 1962, and th number was exceeded in 1964. ('Suisanch Nippo,' Mar. 4.)

* * *

REDUCES TRAWL OPERATIONS OFF U.S EAST COAST

In April 1970, only 6 Japanese vessel were off the U.S. east coast near New Yor in early Dec. 1969, there had been 14, fishin primarily for squid. Eight had returned t Las Palmas, Canary Island, because squi dropped off and small, lean butterfish an deep-sea smelts increased in the catch.

The 6 trawlers were scheduled to leave the area around mid-May. Later, about 6 trawlers will return to fish herring from Aug. or Sept. until end of 1970. The 6 include the 'Sekishu Maru' (997 gross tons) which fished throughout 1969 off U.S. east coast.

Squid Catches

The Japanese squid catches off U.S. east coast since Dec. 1969 were estimated at

APAN (Contd.):

3,000 metric tons. These were sold to Eu-
opean countries at prices averaging around
S$500 a metric ton for deliveries to Las
almas.

ain Plans Squid Fishing

Spain is the largest buyer of these Japa-
se-caught squid. Reportedly she plans
nding trawlers to squid grounds off New
ork next season. Although scale of planned
anish operation is not known, the Japanese
el increased squid production and possible
arketing of inferior product will affect ad-
rsely their 1971 European sales. ('Suisan
ushin,' April 15.)

* * *

INDS BOTTOMFISH ABUNDANT
FF ARGENTINA

The Japanese government-operated re-
earch vessel 'Kaiyo Maru' (2,500 gross tons)
ecently conducted in Tokyo an exhibit and
aste sampling of her trawl catches off Ar-
entina in 50-1,120 meters. Her 45-day re-
ource survey lasted from Dec. 10, 1969-
an. 26, 1970.

Main Species Caught

About 42% of the catch was southern cod,
4% merluza (hake), 8% decora (phonetic),
lus other bottomfish species.

Southern cod resemble pollock. They are
elicious if cooked immediately, but become
y and unsuitable for home cooking if frozen
ery long.

Merluza are most abundant in shallow
aters about 50 meters. Argentina annually
arvests around 150,000 tons, 60% processed
nto fish meal, and some exported frozen to
ne U.S.

Decora are called merluza-decora in Ar-
entina and are used in fish meal. They are
ood food fish. They were caught at 150-200
neters.

Region Offers Promise

The abundance of bottomfish off Argentina
uggests that southwest Atlantic can be de-
veloped into productive fishing grounds for Japanese "surimi" (minced meat) factory-ship operations. ('Suisan Tsushin,' Apr. 15.)

* * *

TUNA LONGLINERS HAVE
EXTRA LOW-TEMPERATURE FREEZERS

Two 314-gross-ton tuna longliners under construction at the Kanasashi and Miho Shipyards in Japan will have a freezing system capable of reducing temperatures to -60° C. (-76° F.). The vessels also will be equipped with four two-phase compressors capable of lowering the hold temperatures to -55° C. (-67° F.).

Construction cost of each vessel is about 185 million yen (US$514,000).

To Fish Bluefin Tuna

Scheduled for completion in mid-May 1970, the longliners will be sent to the South Pacific bluefin tuna grounds. ('Suisancho Nippo,' Mar. 30.)

* * *

PRICES STEADY FOR SQUID & OTHER
W. AFRICAN TRAWL CATCHES

The Japanese market for "monko" squid and octopus taken off west Africa (near Spanish Sahara and Mauritania) is reported steady. Demand for large squid by restaurants continues strong.

The market for red sea bream caught off west Africa is weakening as spring demand tapers off.

Mid-April Prices

In mid-April, dockside prices (converted to US$/short ton) were: "Monko" squid: extra large (4-5 count 53-lb. box) and large (6-8 count: $1,512-1,522; medium (9-12 count) $1,469; small (13-20 count) $1,419; extra small (over 61 count) $630-781.

Octopus: extra large (1-3 count/53-lb. box) $474; large (4-5 count) $663; medium (6-7 count) $766; small (8-10 count) $713; extra small (over 41 count) $441.

JAPAN (Contd.):

Red sea bream: extra large (1-22 count 44-lb. box) $554; large (23-29 count) $580; medium (30-39 count) $605; medium-small (40-49 count) $554; extra small (70-99 count) $252. ('Suisan Tsushin,' Apr. 21.)

* * *

CANNED MACKEREL EXPORTS TO U.S. ARE INCREASING

Japanese canned mackerel exports to the U.S. are rising. Particularly sharp increases were noted in Feb. and March. Sales to one major U.S. west coast packer were over 70,000 cases (1-lb. talls, 48s) since Jan. 1970.

Trading firms are actively promoting their own brands in the U.S. If upward trend continues, canned mackerel exports to the U.S. in 1970 will approach one million cases. This would make U.S. a very important market, second to the Philippines.

1966 A Milestone

Exports to the U.S. first attracted attention in 1966, when poor mackerel fishing in California stimulated increased shipments from Japan that reached 450,000 cases. However, sales competition among Japanese trading firms later blunted U.S. buying interest; in 1967, sales plummeted to 180,000 cases.

The loss was regained gradually. Sales rose to 320,000 cases in 1968, and to 400,000 cases in 1969--approaching 1966 level.

Export Prices Up

Recent Japanese export prices for shipments to the U.S. are about 28 cents a case more than January 1970. They are reported around US$4.72 a case (48 1-lb. tall cans), exwarehouse, for natural pack. ('Suisan Tsushin,' Apr. 22.)

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JAPAN & SOVIETS SIGN 1-YEAR CRAB AGREEMENT

Japan and the Soviet Union signed in Moscow on April 7 a 1-year crab agreement. The talks had begun on Feb. 9.

Under the agreement, the number of Japanese crab vessels and the 1970 season in the northwest Pacific are the same as last year, but the catch quota has been reduced somewhat.

A 15% reduction in Japanese king crab quota off western Kamchatka nullifies the long-term bilateral agreement concluded earlier whereby Japan was allotted a 216,000-case ($\frac{1}{2}$-lb. 48s) quota.

Fishing regulations by area for the Japanese fleet are (figures within parentheses are for 1969):

1. Off western Kamchatka: king crabs--183,000 cases (216,000 cases) by 4 fleets; "Ibara" crabs--765,000 crabs (900,000) by 2 fleets.

2. Western Bering Sea: tanner crabs--11.35 million crabs (13 million) by 42 vessels. Of that quantity, 2 million (6.5 million) to be taken off Cape Olyutorski and 9.35 million (6.5 million) east of Cape Navarin.

3. Off eastern Sakhalin Island: "Abura" (oil) crabs--600,000 crabs by 6 vessels, with a 10% allowance for mixed catches of king and tanner crabs; tanner crabs--17 million crabs (19 million) by 39 vessels.

4. Off Nijoiwa: 1.64 million "kegani" (hair) crabs by 14 vessels, same as 1969.

5. Triangle area: 600,000 king crabs, 1.3 million hair crabs and 910,000 "Hanasaki" king crabs by 37 vessels; same as 1969. ('Suisan Tsushin', Apr. 9, 'Minato Shimbun,' Apr. 8.)

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BRAZIL'S 200-MILE SEA LIMIT MAY HURT JAPANESE FISHING

Brazil's extension of her territorial-sea limit from 12 to 200 miles on March 25, 1970, is expected to affect adversely Japanese shrimp and tuna longline fishing off that country. At present, 72 Japanese shrimp trawlers based in the Guianas harvest one-third of their catches off Brazil during March to September. In 1968, they took 1,888 metric tons of shrimp; in 1969, 2,501 tons.

Licensing for Foreigners Unknown

The Brazilian Government has not mentioned any licensing standards for foreign

JAPAN (Contd.):

vessels. If foreign vessels are excluded from the claimed waters, Japanese shrimp fishermen will suffer severely. The U.S. and other nationals also are shrimping off Brazil.

On April 6, the Japanese South American Shrimp Association petitioned the Fisheries Agency and the Foreign Office for help. The Foreign Office was reported planning to file a protest with Brazil. ('Minato Shimbun', Apr. 6.)

* * *

NORTH PACIFIC WHALE OIL SOLD

The sale of whale oil from the 1970 operation in the North Pacific, which began in May, has been contracted for export and domestic markets.

Export sales of 5,000-8,000 metric tons of fin-whale oil were contracted at US$230 a metric ton, c.i.f., delivery Rotterdam; 4,000 tons of sperm-whale oil at $262 a ton, delivery Rotterdam and New York City. All fin-whale oil exports are to European users, such as Unilever. U.S. firms bought 3,000 tons of sperm-whale oil.

Japanese Market

Sales of sperm-whale oil to Japanese domestic firms were at $258 a ton, but actual price comes to $269 when payment conditions are included. Sales of fin-whale oil to Japanese firms were expected to be concluded shortly after mid-April. ('Suisan Tsushin,' Apr. 11 & 16.)

日本

TAIWAN

1969 CATCH ROSE 5.6%

Taiwan's 1969 catch of 560,783 metric tons was 5.6% above 1968. Production from fish culture increased only 0.8% due to typhoon flooding summer 1969, which caused heavy losses in fish pounds.

The 1970 target is 632,000 tons, which may be considered optimistic. In 1969, only 23,000 tons of fishing vessels were constructed; the goal was about 33,000 gross tons. The number of vessels operating in 1970 will be smaller than planned; it will be difficult to reach goal.

Exports Up

Fishery exports were US$44,700,000 in 1969. This figure differs from US$12 million figure of Foreign Trade Bureau, Republic of China. The latter includes only exports from Taiwan, and not exports from overseas ports; these were US$32,000,000, a large increase over 1968.

Artificial Spawning

The experiment in artificial propagation of grey mullet at Tungkang was a complete success. On Feb. 5, 90 fingerlings, 42 days old, still survived from thousands used. The average length reached 3 cm. They were planted at this size in fish ponds to grow to adulthood. This is result of 5 years of experiments. In 1969, only 2 fingerlings survived; they were 30 days old and measured 1.1 cm.

Another batch of about 300 fingerlings, each about 2 cm. long, is still in rearing ponds at Tungkang. What remains to be done is refinement of technique to produce fingerlings on a large scale to supply fish farmers.

World Bank Loans

The World Bank has made 2 loans: The first, in 1963, was US$7.8 million for three 1,000-ton boats and thirteen 300-ton tuna longliners. The construction was awarded to a Japanese shipyard after world-wide bidding. Construction was completed in 1965.

A second loan of US$7 million was made in 1968 to build twenty 250-ton vessels. The construction was awarded to a Korean shipyard. Work began in Dec. 1968. Due to reorganization and strikes, construction was not completed until early 1970. Nineteen vessels have been delivered to Taiwan; one is being refitted in Japan.

Asian Development Bank

A loan of US$10 million was approved to build forty 250-ton tuna vessels. Applications for only 35 boats were received by Taiwan Fisheries Bureau. Many applicants intend to withdraw. Each will forfeit a deposit of NT$250,000 (US$6,300). (T. P. Chen, Chief, Fisheries Division, Joint Commission on Rural Reconstruction.)

CANADA

MAY DEVELOP NEW TRAWL FISHERY IN W. LAKE ONTARIO

Canada may establish a profitable trawl fishery for smelt and alewives in Lake Ontario's western end. The new fishery would not interfere with present fishing operations.

The Lake Erie trawler "Leona Charles," chartered by provincial government, made consistently good catches during past winter off Toronto and Hamilton: individual half-hour hauls up to 8 tons.

For Humans & Animals

The catches provide large smelt for human consumption, small smelt for mink feed, and alewives for processing into petfood. Sorting is done by hand. It is hoped that mechanical sorters, which now grade by size, can be modified to separate species. This would reduce labor costs and prevent much tedious work.

Gill Nets Safe

Lake Ontario's traditional gill-net fishery is carried out only in the lake's eastern end, so there will be no danger of bottom trawls damaging the delicate gill nets.

Smelt have been popular for many years, but Lake Ontario alewives have had no commercial value, although they contribute to diet of more valuable fish species. In many resort areas of Lake Ontario, they have been considered a nuisance because there is usually a summer "die-off". Vast numbers of dead alewives are washed onto the beaches. ('Canadian Dept. of Fisheries and Forestry', Apr. 23.)

* * *

IMPORTS OF CANNED TUNA UP, FROZEN TUNA DOWN

In 1969, Canadian canned-tuna imports were 3,834 short tons worth US$3,957,000. This was rise of 4% in quantity and 19% in value above 1968, according to Japan External Trade Promotion Organization.

Purchases from Japan were 3,116 tons, over 80% of Canada's canned-tuna imports. These were mostly canned white-meat tuna packed under buyer's label, although imports of solid and chunk light-meat tuna packs have been increasing lately.

Cuba Exports to Canada

Cuba also exports canned white meat and some canned light-meat tuna to Canada. Cuba may become a greater supplier because her product is lower priced, and quality is improving under technical assistance.

Prices Rising

Canned tuna prices in Canada generally are rising. For Japanese canned solid white meat tuna, retail prices for 7-oz. can range from 43-47 Canadian cents (39-41 cents in 1968) to 52-57 cents (45-48 cents in 1968). The 13-oz. solid white meat tuna are being sold for $1.05 a can. The Cuban 7-oz. can retails for 29 cents a can for both solid white and solid light meat tuna.

Frozen Tuna Imports

In 1969, Canada's frozen tuna imports were 1,793 short tons worth $801,000, a sharp drop from 1968's 5,201 tons worth $2,426,000. Shipments from Japan are 90% of imports. These have remained fairly stable during past two years. Purchases from Cuba have dipped sharply, and Mauritius Island and Malaysia, important suppliers in earlier years, sold none.

2 Major Canneries

Canada has two major tuna canneries packing mostly albacore, which is in great demand. However, albacore fishery is poor, so those packers face a lack of raw material. Since 1968, they have sought supplies abroad. ('Suisan Tsushin,' Apr. 20.)

EUROPE

NORWAY

FISHING INDUSTRY WAS PROSPEROUS IN 1969

On the average, 1969 was a prosperous year for the Norwegian fishing industry. Although total landings fell 15% to 2.2 million metric tons exvessel value reached US$147 million (up %) and export earnings $237 million (up 7.2%).

Why Value Rose

The 1969 increases in value reflected the compound effect of 2 factors: generally higher product prices, and the processing of an increased proportion of the catch into higher-priced products. These were more frozen fish fillets, canned fish, and klippfish; less fish meal and oil.

Cod Up, Herring Down

The cod fisheries yielded 274,000 tons, the second highest recorded. The pattern of supply of raw fish for the reduction industry was drastically altered in 1969. Landings of herring dropped more than 500,000 from 1968--to only 205,000 tons--because of the almost-complete failures of winter herring and fat herring fisheries; North Sea herring landings fell over 50%.

Fish Reduction Down 20%

The fish reduction industry processed 1.6 million tons of fish--20% less than in 1968. It used mainly other species of densely shoaling fish: mackerel, capelin, and Norway pout.

State Support Steady

State support to the fisheries, including purchases of stockfish from producers/exporters, was $37 million, practically the 1968 level. (U.S. Embassy, Oslo, May 6.)

* * *

BULK CARRIER TO BECOME FISH-MEAL FACTORYSHIP

A former Swedish bulk carrier purchased by Norglobal A/S, Tromsø, Norway, will be reconstructed into a floating fish-meal factory at Nyland Shipyard in Oslo. The vessel is 584 feet long, 78 wide, and 45 feet deep. She is registered at 18,362 gross tons and 26,100 tons deadweight. The factoryship is expected to be ready by July. The first expedition will be off Africa.

Process 3,000 Tons Daily

A/S Myrens Verksted in Bergen, Norway, will deliver factory machinery designed to process daily about 3,000 tons of raw material--equal to 600 metric tons of fish meal. The raw material will be delivered from 12-15 modern purse seiners. The expedition will accommodate 200 men. The project is an investment of about US$14 million.

3 Production Lines

The ship will have 3 fish-meal production lines. Greatest automation and maximum space use were stressed. The ship will be equipped with 4 positions to load raw material from vessels at total capacity of 800 tons an hour.

The raw material will run past fully automatic scales that register net raw material received. The raw-material bins are self-trimming, with facilities steered from deck to empty raw material.

The transport systems contain regulated feeding apparatus leading raw material to 4 indirect boilers, then past strainer facilities to 3 double-screw presses. The boilers have variable speed to make maximum use of raw materials. The drying plants to process meal are specially constructed for ship installation.

Storage for 2 Days' Work

After first grinding process, meal is run through a pellet plant and transported to storage tanks. Pellets can be discharged directly to transport vessels at sea. The oil separator plant and liquid presses operate automatically. At full production, the ship has a raw-material storage capacity for 2 days' operation; she can store about 10,000 tons of pellets, and about 5,000 tons of fish oil. ('Fiskets Gang,' Mar. 12.)

DENMARK

SALMON BOAT CONVERTED TO SHRIMP FACTORYSHIP

A former salmon trawler, the 'Greenland', is being reconstructed in Esbjerg, Denmark, into a floating shrimp factory, the first of its kind in the world. The ship originally was purchased in Cuxhaven by Director Sørensen of Esbjerg. She underwent extensive reconstruction for salmon operations off Greenland.

Fishing off Greenland was satisfactory, but Sørensen decided there were too many vessels in the area and that the vessel could be used to explore other N. Atlantic riches.

The Greenland still will be able to perform as a salmon vessel.

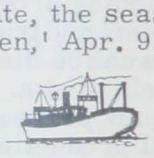
U.S. Shrimp-Peeling Machine

She will be equipped with a U.S. shrimp-peeling machine. The machine is capable of peeling 6 tons of shrimp in 20 hours. Normally, shrimp are peeled by Greenlandic women, who can peel 3 kilograms of whole, raw shrimp in one hour. The new machine can peel as much as 100 women peel during a normal workday.

A factory expert will oversee the new machinery. After peeling, the shrimp will be frozen onboard. Further processing--to boil and pack the shrimp--will take place in Denmark.

Ice Masses Delay Season

Assuming timely receipt of the machinery from the U.S., the Greenland was scheduled to begin operations about May 1. The shrimp season normally begins in May. However, due to large ice masses in Disko Bay, where the vessel will operate, the season has been delayed. ('Vestkysten,' Apr. 9.)



FRANCE

IMPORTED MANY JAPANESE FISHERY PRODUCTS IN 1969

French imports of Japanese fishery products in 1969 have been reported by the Japan External Trade Organization:

Frozen Tuna: 995 metric tons (922 tons in 1968). The Japanese product was nearly 80% of total French imports in 1969, which amounted to 1,197 tons (2,439 tons in 1968).

Canned Salmon: 794 metric tons, over 50% of French canned-salmon imports of 1,330 tons. Purchases from Japan in 1969 declined 50% from 1968. The Soviet Union has increased its canned salmon sales to France since 1968. In 1969, these surpassed (in volume and value) shipments from Canada, Japan's former chief competitor in France.

Japanese Shipments Fall

Canned Crab and Shrimp: Bought 852 metric tons from Japan, mostly canned king crab. Compared with 1968, shipments from Japan declined 50% in quantity but rose 20% in value; this reflected sharp rise in price. However, high price has sharply reduced retail sales in France. It is feared market for Japanese product may collapse.

Canned Mackerel: Imports from Japan were 253 metric tons, down slightly from 1968. ('Suisan Tsushin,' Apr. 21.)

USSR

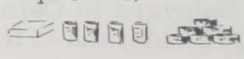
SOVIET CANNED KING CRAB IN JAPAN

Canned king crab packed in the Soviet Union began to appear in Japan in late Feb. 1970. The product was imported by Tokyo Maruichi Shoji, a leading importer of Soviet marine products. It is being sold in various parts of Japan under Soviet labels 'Chatka' and 'Ako'.

One leading Tokyo department store is selling Chatka, a quality pack, for US$1.94 a can ($\frac{1}{2}$-pound pack), the same price as that for Japanese factoryship production. Some supermarkets are promoting sales at low prices of $1.33-1.38 a can.

Also Soviet Competition Elsewhere

Apparently, the Soviets are exploiting opportunity provided by Expo-70 to penetrate Japanese market. Japanese packers, who face Soviet competition in the U.S., France, and elsewhere, now are confronted with an aggressive sales offensive in Japan. Hereafter, market prices will be largely influenced by the movement of the Soviet product. ('Suisab Tsushin,' Apr. 13.)



SOUTH PACIFIC

AUSTRALIA

CONTINENTAL SHELF ACT BECAME EFFECTIVE APRIL 15

Australia's Continental Shelf (Living Natural Resources) Act of 1968 became effective April 15, 1970. J. D. Anthony, Minister for Primary Industries, said Australia was extending her control over the living natural resources of the Continental Shelf in accordance with international law.

He noted that the Pearl Fisheries Act in the early 1950s had helped develop international law in this field. However, it applied only to pearl shell and three other marine organisms.

The Act of 1968 relates to Continental Shelf living natural resources as defined in 1958 Convention.

What Act Covers

The Act applies to marine organisms including many sedentary species, such as corals, sea anemones, sea pens, sponges, sea urchins, beche-de-mer, sea lilies (have scientific not commercial value); molluscs, including mother-of-pearl, giant clams, oysters, mussels, and other bivalves, abalone, trochus, green snail, and other similar gastropod molluscs, chitons, and seaweeds.

This list could be extended later, in accordance with conservation needs, to include other living natural resources covered by the Convention.

Also Covers Foreign Nationals

Mr. Anthony said the Act applied also to foreign nationals. After April 15, 1970, it became an offense to take these organisms without a license from specified parts of the Continental Shelf and the External Territories. The Government intends that the resources be protected particularly from foreign fishermen. They will be prevented from taking clams or other specified organisms from the shelf near the Great Barrier Reef.

Licensing

The Government did not intend that foreign fishing vessels be licensed. Australian fishermen and vessels must be licensed if they fish for these organisms for commercial purposes. Tourists and other noncommercial persons would not need licenses. However, they would have to obey management rules (closed seasons or minimum sizes) that may be introduced.

The Government is considering a complete ban on taking certain molluscs near the Great Barrier Reef.

Stiff Penalties

The Act provides stiff penalties for unlicensed commercial taking of sedentary organisms: from fines up to $1,000 and, at Court's discretion, forfeiture of the vessel, equipment, and sedentary organisms taken illegally. Additional penalties are provided for offenses by foreigners. ('Australian Fisheries,' Mar. 1970.)

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NEW SHRIMP PROJECT ANNOUNCED

The Australian Cabinet last year approved funds for shrimp explorations from New South Wales-Queensland border around Australia's northern coasts; then, up into Gulf of Papua and down to latitude 19° S. in W. Australia.

J. S. Hynd, a marine biologist, was appointed project leader. B.V. Hamon, a senior physical oceanographer, is organizing oceanographic and environmental aspects. The project is centered at Cronulla, New South Wales; there are several field laboratories.

The Program

The first part is concerned with shrimp stocks, the second with relations between those stocks and their environment. The third part, not yet undertaken, aims to develop gear. ('Australian Fisheries,' Mar. 1970.)