features of interest to sport fishermen. "Anglers' Guide" sections cover: Section I, Passamaquoddy Bay, Me. to Cape Cod, Mass.; Section II, Nantucket Shoals to Long Island Sound; Section III, Block Island, N.Y. to Cape May, N.J.; and Section IV, Delaware Bay to False Cape, Va. Sections I, II, and IV cost $4.15 each, and Section III costs $4.30. They can be ordered from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Sections V-VIII will be printed soon.

The most common and popular sport fish in each section are described, including common and scientific names, and sizes: average; "unusually large"; largest; and the tackle record. Each species' preference for bottom type and depth, temperature, and information on the season caught and best fishing conditions are listed. Tips on the best fishing methods and the most popular and productive baits and lures are also given.

General arrival times of migrant sport fish are told as are other seasonal movements and the habits of year-round resident species. Ocean floor configuration is described along with general tide and weather conditions. Other items of interest include the effects that pollution, estuarine development, and overfishing have had on fish stocks and the marine sport fishery. Marine fishing is traced from earliest European exploration and colonization for most coastal sections and the decline of some of the fish stocks is noted.

Map features of interest to anglers include shoals, gullys, ledges, banks, wrecks, lightships, jettys, bars, reefs, channels, canyons, whistle buoys, and the like. Such land features as national and state parks, forests, wildlife areas, campsites, etc. are also shown. While the maps are not intended for navigational use, numbers of corresponding National Ocean Survey charts are listed for reference.

Tables keyed to each map provide extensive data on sport fishing facilities, supplies, and services. The number of boating facilities per location is given and available rentals are classed as rowboats, outboards, charter boats, party boats, runabouts, or skiffs. Launching ramps (surfaced or natural), and hoists (fixed or portable) are listed if available, as are marine railways. Tidal ranges, and approach and alongside depths are given in feet. Supplies and services mentioned include bait, tackle, gasoline or diesel fuel, water, ice, groceries, moorings, berths, electricity, motor or hull repairs, food, lodging, toilets, and showers. A 72-word glossary in each section defines words ranging from "Anadromous" to "Wet Fly."

Authors Bruce L. Freeman and Lionel A. Walford consulted extensively with commercial and sport fishermen, coastal wardens, outdoor writers, State and Federal fisheries biologists, and operators of marinas, bait and tackle shops, and boat liveries. Other important information was supplied by state park, forest, and recreation agencies as well as the National Park Service, and the U.S. Fish and Wildlife Service (formerly the U.S. Bureau of Sport Fisheries and Wildlife). The "Anglers' Guide" will be useful to most east coast saltwater sport fishermen.

*Foreign Fishery Developments*

## Japanese Buy More U.S. Seafood in 1973

Japan's imports of seafood from the United States increased from US$25 million in 1972 to $89 million in 1973. This threefold increase boosted the U.S. share of the Japanese market from 4 percent in 1972 to 8 percent in 1973 and made the United States Japan's third largest supplier of fishery products after South Korea and Taiwan. This achievement is even more remarkable in view of the phenomenal surge in Japan's fishery imports which went from $618 million in 1972 to $1 billion in 1973.

Salmon was the most valuable U.S. seafood export sold to the Japanese in 1973; $29 million worth of salmon was exported, accounting for 70 percent of Japan's total salmon imports. Salmon roes ("ikura" and "sujiko" combined) were worth $26 million and accounted for a significant 71 percent of the Japanese market. Only a decade ago these valuable roes were being discarded as worthless. One of the most surprising developments in 1973 was the development of a sizeable tanner crab export industry. U.S. exports of tanner crabs to Japan went from $29,000 in 1972 to $14 million in 1973 and accounted for 67 percent of Japan's total imports of that species. U.S. herring roe exports were worth $5 million, but accounted for only 6.5 percent of the $77 million worth of herring roe imported by the Japanese during the year (by contrast, 100 percent of Japan's "herring roe on kelp" came from the United States, but this was worth less than $1 million). Frozen shrimp was the fifth most valuable seafood exported by (or transhipped through) the United States to Japan in 1973; $3 million worth of frozen shrimp was sent, but this accounted for only a minuscule 0.7 percent of the $432 million worth of shrimp bought by Japan in 1973.

Table 1 provides data on United States seafood exports to Japan in 1973 and shows the percentage each product held of the Japanese import market during the year. Table 2 pro-

**Table 1.—The value of Japan's fishery imports from the United States as compared with Japan's total fishery imports, by selected fishery products, 1973**

| Product | United States | Total imports | Percent imported from the U.S. |
|---|---|---|---|
| | *US$1,000* | | *Percent* |
| Abalone | 491 | 4,359 | 11.3 |
| Aquarium fish | 352 | 2,492 | 14.1 |
| Crab | 14,011 | 20,866 | 67.1 |
| Eel | 37 | 38,535 | .0 |
| Elvers | 66 | 15,163 | .4 |
| Herring | 1,828 | 6,877 | 26.6 |
| Herring roe | 5,040 | 77,509 | 6.5 |
| Herring roe on kelp | 575 | 575 | 100.0 |
| Salmon | 29,168 | 41,191 | 70.8 |
| Salmon roe (Ikura) | 1,842 | 2,101 | 87.7 |
| Salmon roe (Sujiko) | 24,678 | 44,191 | 70.8 |
| Scallops | 62 | 4,359 | 1.4 |
| Sea shells | 1,256 | 2,634 | 47.7 |
| Sea urchin roe | 872 | 9,308 | 9.4 |
| Shrimp | 3,128 | 432,994 | .7 |
| Tunas | | | |
| Bluefin | 1,678 | 3,563 | 47.1 |
| Skipjack | 3 | 1,745 | .2 |
| Yellowfin | 11 | 18,859 | .1 |
| Other products | 3,704 | 371,556 | 1.0 |
| Total imports | 88,802 | 1,099,173 | 8.1 |

SOURCE: Japanese Customs Returns.
Exchange Rate: 273 yen = US$1.00

**Table 2.—The value of Japan's fishery imports from the United States, by selected commodities, 1964-73.**

| Commodity | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | *US$1,000* | | | | | |
| Abalone | — | — | — | — | — | — | 3 | 11 | 104 | 491 |
| Aquarium fish | 65 | 129 | 292 | 471 | 488 | 433 | 304 | 325 | 234 | 352 |
| Crabs | — | — | — | — | — | — | 29 | 34 | 29 | 14,011 |
| Eels | — | — | — | — | — | — | — | — | — | 37 |
| Elvers | — | — | — | — | — | — | — | — | — | 66 |
| Herring | — | — | — | 15 | — | 228 | 66 | 154 | 351 | 1,828 |
| Herring roe | 99 | 496 | 944 | 1,246 | 757 | 940 | 898 | 769 | 1,370 | 5,040 |
| Herring roe on kelp | — | — | — | — | — | — | 285 | 1,658 | 925 | 575 |
| Salmon | 2,225 | 427 | 878 | 902 | 1,187 | 7,932 | 4,561 | 5,128 | 2,214 | 29,168 |
| Salmon roe (Ikura) | — | — | — | — | — | — | — | 427 | 802 | 1,842 |
| Salmon roe (Sujiko) | 1,232 | 1,986 | 5,567 | 5,310 | 11,510 | 8,710 | 13,915 | 15,877 | 15,659 | 24,678 |
| Scallops | — | — | — | — | — | — | — | 427 | 802 | 1,842 |
| Sea shells | 1,429 | 3,480 | 8,759 | 4,217 | 1,222 | 1,715 | 1,299 | 274 | 735 | 1,256 |
| Sea urchin roe | — | — | — | — | — | — | — | — | 45 | 872 |
| Shrimp | 318 | 36 | 193 | 1,916 | 1,070 | 2,601 | 1,755 | 3,236 | 114 | 3,128 |
| Tunas | | | | | | | | | | |
| Bluefin | — | — | — | — | — | — | 5 | 74 | 679 | 1,678 |
| Skipjack | 25 | 71 | 20 | 141 | 172 | 132 | 54 | — | 16 | 3 |
| Yellowfin | — | — | — | — | — | — | — | 91 | 71 | 11 |
| Other | 542 | 524 | 743 | 467 | 914 | 2,810 | 991 | 1,104 | 1,230 | 3,704 |
| Total imports | 5,935 | 7,149 | 17,396 | 14,685 | 17,320 | 25,501 | 24,165 | 29,162 | 24,578 | 88,802 |

Exchange Rates: Through 1970, US$1.00 = 360 yen; 1971, US$1.00 = 351 yen; 1972, US$1.00 = 308 yen; 1973, US$1.00 = 273 yen.
SOURCE: Japanese Customs Returns.

vides data on the total U.S. fishery exports to Japan for the period 1964-73.

Although 1973 was an exceptionally good year for U.S. fishery exporters selling to Japan, the situation in 1974 changed for the worse. According to Lorry M. Nakatsu, Regional Fisheries Attache in Tokyo, fisheries trade in 1973 was characterized by "frantic" buying on a world-wide scale, and "the market for imports went through wild gyrations, mainly upwards." This buying was stimulated, in part, by the strong position of the Japanese yen on world markets. However, beginning in late 1973, accelerated inflation and the tight financial market, aggravated by the Arab oil embargo, hit the Japanese market. Consumers faced by rapidly rising prices began to resist buying high-priced, luxury fish products—especially shrimp and salmon. With living costs spiraling upward, Japanese consumers became much more selective in their purchases, buying lower-priced fish and/or fish in season, such as frozen herring, saury, skipjack tuna, and sardines. The result was increased holdings of shrimp and salmon.

Japanese consumer resistance to high-priced, luxury seafood commodities was expected to continue through most of 1974. However, fishery imports were expected to remain at high levels due to the demand for seafood in Japan. Trade statistics for the period January-May 1974 showed that imports were 42 percent higher in terms of value and only 10 percent more in quantity as compared with 1973.

U.S. seafoods will, therefore, continue to find attractive markets in Japan, although certain luxury commodities may encounter short-term difficulties. The long-range outlook for U.S. seafoods is, however, excellent. The Japanese have already been faced with severe reductions in their high seas salmon and crab fisheries, and must therefore look to exporting nations for continued supplies of these seafoods. Additionally, the possibility of an internationally recognized 200-mile fisheries jurisdictional zone may greatly curtail Japan's high seas fisheries catch, further stimulating the demand for imported seafood products. U.S. seafood exporters can, therefore, expect excellent long-range opportunities for sales in the Japanese market.

## Japan's Fish Exports To U.S. Are Listed

The United States has traditionally been Japan's best customer for its fishery products, and last year was no exception; US$226 million worth of Japanese tunas, mackerels, oysters, trout, and other seafood products were shipped to the United States in 1973. The United States market accounts for 35.5 percent of Japan's total fishery exports—almost six times more than Great Britain, Japan's second largest customer in 1973.

**Table 1.—The value of Japan's fishery exports to the United States as compared with Japan's total fishery exports, by selected fishery products, 1973.**

| Product | United States | Total exports | Percent exported to the U.S. |
|---|---|---|---|
| | *US$1,000* | | *Percent* |
| Crab, canned | 106 | 1,153 | 9.2 |
| Fish oil | 7,106 | 10,469 | 67.9 |
| Frog legs | 2,018 | 2,050 | 98.4 |
| Mackerel, canned | 10,623 | 96,164 | 11.0 |
| Oysters, canned | 4,524 | 7,437 | 60.8 |
| Pearls | 7,850 | 65,446 | 12.0 |
| Petfood | 2,960 | 3,697 | 80.1 |
| Rainbow trout | 1,421 | 4,028 | 35.3 |
| Salmon, canned | 1,575 | 38,164 | 4.1 |
| Shrimp, frozen | 3,194 | 12,835 | 24.9 |
| Swordfish | 0 | 337 | .0 |
| Tuna, frozen | 53,619 | 78,901 | 68.0 |
| Tuna, canned | 31,026 | 89,523 | 34.7 |
| Other products | 99,853 | 225,304 | 44.3 |
| Total exports | 225,875 | 635,508 | 35.5 |

Exchange Rate: 273 yen = US$1.00
Source: Japanese Customs Returns.

Frozen tuna exports to the United States were valued at $54 million in 1973. The United States purchased 68 percent of Japan's total exports of frozen tuna in 1973, making this seafood the leader in Japan's exports to this country. Canned tuna shipments dropped by around $18 million below 1972 shipments for a total value of $31 million (about 34.7 percent of Japan's total canned tuna exports). Canned mackerel (11 percent) exports totaled $10 million in 1973, making that product Japan's third most valuable seafood export. Japanese sales of pearls amounted to $7 million in 1973

Table 2.—The value of Japan's fishery exports to the United States, by selected commodities, 1964-73

| Commodity | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | US$1,000 | | | | | |
| Crab, canned | 5,348 | 4,354 | 2,796 | 2,435 | 5,285 | 6,315 | 3,810 | 6,265 | 2,591 | 106 |
| Fish oil | 14 | — | — | 12 | — | — | 1,412 | 6,915 | 4,455 | 7,106 |
| Frog legs | — | 1,248 | 1,426 | 1,343 | 1,370 | 1,922 | 212 | 1,037 | 1,201 | 2,018 |
| Mackerel, canned | 44 | 54 | 2,863 | 1,146 | 2,061 | 2,343 | 6,210 | 2,883 | 6,938 | 10,623 |
| Oyster, canned | 2,310 | 2,592 | 3,935 | 5,487 | 4,708 | 5,206 | 4,260 | 5,105 | 8,636 | 4,524 |
| Pearls | 21,115 | 23,697 | 23,371 | 17,399 | 12,533 | 11,495 | 9,378 | 6,601 | 7,276 | 7,850 |
| Petfood | — | 1,917 | 3,690 | 4,918 | 3,802 | 2,189 | 5,437 | 3,368 | 3,812 | 2,960 |
| Rainbow trout | — | 983 | 875 | 1,180 | 1,270 | 964 | 1,626 | 2,709 | 1,192 | 1,421 |
| Salmon, canned | 26 | 160 | 157 | 316 | 701 | 940 | 89 | 726 | 5,688 | 1,575 |
| Shrimp, frozen | — | 1,800 | 2,922 | 985 | 2,977 | 4,209 | 2,946 | 6,450 | 5,042 | 3,194 |
| Swordfish | 4,708 | 5,918 | 6,316 | 4,371 | 7,993 | 7,134 | 6,771 | 8 | — | — |
| Tuna, frozen | 20,045 | 16,558 | 27,945 | 13,600 | 16,806 | 9,840 | 14,083 | 14,066 | 33,351 | 53,619 |
| Tuna, canned | 20,852 | 18,251 | 25,131 | 26,884 | 29,297 | 36,240 | 42,988 | 34,256 | 49,393 | 31,026 |
| Other | — | 11,504 | 16,210 | 11,853 | 14,436 | 15,065 | 17,310 | 23,876 | 64,446 | 99,853 |
| Total exports | n.a. | 89,036 | 117,637 | 91,929 | 103,239 | 103,862 | 116,532 | 114,265 | 194,003 | 225,875 |

Exchange Rates: Through 1970, US$1.00 = 360 yen; 1971, US$1.00 = 351 yen; 1972, US$1.00 = 308 yen; 1973, US$1.00 = 273 yen.
SOURCE: Japanese Customs Returns.

(12 percent of their total exports), which is considerably below the $23 million worth of pearls shipped to the United States in 1965-66. Fish oil, canned oysters, frozen shrimp, petfood, frog legs, and canned salmon also ranked in the top ten, in terms of value, during 1973.

Table 1 provides details on Japan's exports of fishery products to the United States as compared with their total seafood exports for 1973. Table 2 provides data for Japan's seafood exports to the United States for the decade beginning in 1964.

## Japanese Tell 1973 Fisheries Production

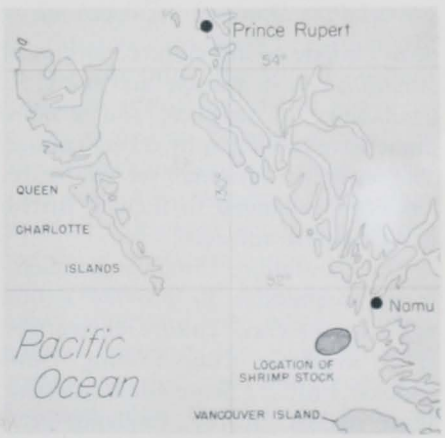
According to figures released recently by the Statistics Bureau of the Ministry of Agriculture and Forestry, Japanese fisheries production in 1973 totaled 10.7 million metric tons, an increase of 482,000 metric tons (5 percent) over 1972. Production by types of fisheries[1] are shown below.

| Type of fisheries | [2]1972 | 1973 | Comparison (Percent) |
|---|---|---|---|
| | (1,000 MT) | | |
| High seas | 3,905 | 3,937 | + 1 |
| Offshore | 3,588 | 3,940 | +10 |
| Coastal | 1,907 | 1,855 | − 3 |
| Marine fisheries | 9,400 | 9,732 | + 4 |
| Marine culture | 648 | 795 | +23 |
| Marine subtotal | 10,048 | 10,527 | + 5 |
| Inland water fisheries | 109 | 115 | + 6 |
| Inland water culture | 56 | 53 | − 5 |
| Inland water subtotal | 165 | 168 | + 2 |
| Grand total | 10,213 | 10,695 | + 5 |
| Whaling (number) | 14,590 | 11,801 | −19 |

[1]SOURCE: *Suisan Tsushin* translation from U.S. Embassy, Tokyo.
[2]Excludes Okinawa Prefecture fisheries production.

## *New Shrimp Stocks Found off British Columbia*

A significant expansion in the shrimp fishery off the central coast area of British Columbia could follow in the wake of recent discoveries by federal fisheries scientists, according to Environment Canada's Fisheries and Marine Service.




The fisheries research vessel *G.B. Reed*, operating out of the Fisheries and Marine Service's Pacific Biological Station at Nanaimo, B.C., conducted experimental trawls in late April 1974 that located about 150 square miles of productive shrimp grounds centered 30 miles southwest of Namu in Queen Charlotte Sound.

"This confirmed earlier predictions by our scientists working in conjunction with the Service's Industrial Development Branch, that appreciable new stocks might exist in the area" said Station Director Dr. W.E. Johnson. T.H. Butler, research scientist in charge of the Station's crustacean program, located major concentrations on the bottom between 90 and 110 fathoms. The shrimp were of good quality, averaging 120 to the pound. According to Mr. Butler, the present stock should permit a catch of about 5,000,000 lbs. per year, which at current prices would be worth about $750,000 to fishermen.

"There have been substantial increases in shrimp stocks along this coast in the past three to five years, and I would be surprised if additional concentrations were not found in more northerly British Columbia waters as well," Mr. Butler added. The new resources on the central coast follow similar finds last year by the two-man team of Butler and his technical assistant, Nelson Yates, on the west coast of Vancouver Island. The B.C. Packers fish plant at Namu has installed new mechanical shrimp peelers to cope with the expected expansion of the local fishery.

## Canada Alarmed Over Foreign Capelin Take

Canadian Fisheries Minister Jack Davis called in June for an immediate end to large-scale Soviet and Norwegian fisheries which threaten capelin

runs to inshore areas along the Newfoundland coast. The Soviet and Norwegian fisheries operate in conformity with regulations of the International Commission for the Northwest Atlantic Fisheries (ICNAF) which involve quotas on stocks over broad areas. However, Mr. Davis pointed out that "a problem has been created by the foreign fleets concentrating in a small area very close to shore and fishing a vulnerable segment of a stock of special importance to our hard-pressed inshore fishermen."

A shift toward shore in Soviet and Norwegian fishing activity between 1973 and 1974 has resulted in an increased take of capelin stocks which migrate into the bays of Newfoundland where they are fished by Canadians and where they are a vital food source for cod and other valuable species. Canadian fisheries patrol vessels participating in the ICNAF joint enforcement scheme reported that more than 50 Soviet fishing vessels had been operating within 30 miles of the Newfoundland coast and as late as 1 June six more large vessels had joined the Soviet fleet. Seven Norwegian catching vessels had been fishing just outside the Canadian 12-mile limit off Trepassey Bay.

Last year the fishery did not pose the same threat to Canadian inshore fisheries because it concentrated on capelin spawning on the southeast edge of the Grand Banks over 200 miles offshore. Capelin in these offshore areas do not migrate inshore and because most of them die after spawning, have no value as food for cod. With regard to the new situation which has arisen this year the Minister instructed Canadian negotiators at the 24th annual meeting of ICNAF, which opened 4 June in Halifax, to make the strongest representations to officials of the Soviet Union and Norway attending the meeting for an immediate cessation to fishing for capelin in the sensitive areas close to shore. Mr. Davis said that he was hopeful that the matter could be resolved through negotiations during the ICNAF meeting.

"In view of the grave concern of inshore fishermen in Newfoundland and the Newfoundland fishing industry generally, if immediate action is not forthcoming Canada will consider what other measures may be taken to provide effective protection of the inshore capelin stocks. In the meantime Canadian patrol vessels and aircraft are continuing to inspect Soviet and Norwegian ships and are maintaining close surveillance over this fishery," Mr. Davis said.

*Publications*

## Russian, Polish, Japanese, and Mexican Fisheries Books and Journals Translated

**Eel culture**, by Atsushi Usui, Midori Shobo Publishers, Tokyo, 1970, 79 p. Mr. Usui is president of the Shizuoka Tansui Freshwater Fish Farming Company. His book, long considered the best on Japanese eel culture techniques, is now available in English translation, revised and expanded to make it more meaningful to a Western audience. It includes a description of the world's species of *Anguilla* eels and a history of their culture, but the majority of the book is devoted to the practical aspects of eel culture. It covers catching of elvers, location of pond sites, construction of ponds, feeding, collection techniques and timing, prevention and cure of diseases, transport to market, and even the major methods of cooking eels.

Ichiro Hayashi of Tokai Regional Fisheries Research Laboratory in Tokyo prepared the original translation; Dr. Gordon Williamson, a British biologist who spent a year in Japan studying eels, has redrawn sketches and added to the text information on when and where to catch elvers in Europe, suitability of European climate to eel culture, species of *Anguilla* eels in Europe and the U.S., availability of supplies, and a comprehensive bibliography on eel culture. The excellent original set of figures has been expanded to include British and European subjects.

The translation, 186 p., is sufficiently comprehensive to provide a firm basis for new eel culture enterprises. It is available from Fishing News (Books) Ltd., 23 Rosemount Avenue, West Byfleet, Surrey, England, price about US$15.60 (6.75 English pounds) plus postage.

**Biological and hydrological factors of local movements of fish in reservoirs**, edited by B. S. Kuzin, Proceedings of Institute of Biology of Inland Waters, No. 16(19), Academy of Sciences of the USSR, "Nauka" Publishers, Leningrad, 1968, 277 p. This is a collection of 16 articles covering a wide range of factors affecting fish movement in reservoirs. The majority deal with studies conducted in the Rybinsk reservoir and include reservoir morphology, bottom sediment content, fish species composition, population dynamics, feeding habits, and species interaction. Other studies cover characteristics and dynamics of water masses in reservoirs, and particularly turbulent exchange, electroconductivity, temperature, and current velocity measurement.

The collection was translated from Russian by Amerind Publishing Co., New Delhi, India, for the Fish and Wildlife Service, U.S. Department of the Interior, under the Special Foreign Currency Science Information Program (financed with Public Law 480 funds). The translation, 389 p., is available from the National Technical Information Service, Springfield, VA 22151, price $8.25. Cite the translation's accession number, TT 71-58014, when ordering. A limited number of free copies is available from the Language Services Division, Office of International Fisheries, F43, NMFS, NOAA, U.S. Department of Commerce, Washington, DC 20235.

**Oxyuroidea of animals and man**, by K. I. Skrjabin, et al, Essentials of Nematodology, Vol. 8, Academy of Sciences of the USSR, Moscow, 1960, 280 figs., 531 p. This is a comprehensive study of the morphology, biology, ecology, and geography of Oxyuroidea, one of five superfamilies of Oxyurata, a suborder of parasitic nematodes.