



The Texas A&M University Seafood Advisory Laboratory is equipped to make a number of physical, chemical, and bacteriological tests.

operations that cannot afford to maintain their own laboratories. For the larger businesses, the new lab serves as a reference facility to verify procedures and results.

Teaching is another important function of the laboratory, Nickelson says. Workshops are planned so that quality control and bacteriology laboratory personnel can learn new techniques and meet face-to-face with their colleagues and with researchers.

Nickelson, a seafood technology specialist, hopes to open the sophisticated laboratory to all personnel involved in the Texas seafood industry to demonstrate the reasons for rules and regulations on sanitation.

Publications

Cover-to-Cover Translations Offered

The American Fisheries Society (AFS) has sponsored since 1968 the cover-to-cover translation of two Russian bimonthly (six issues per year) fishery journals, *Voprosy Ikhtiologii*

(Problems of Ichthyology) and *Gidrobiologicheskii Zhurnal* (Hydrobiological Journal). To date, Vols. 8-11, 1968-1971, and issues 1-5, Vol. 12, 1972, of *Voprosy* and Vols. 5-7, 1969-1971, and issues 1-4, Vol. 8, 1972, of *Gidrobiologicheskii* have been translated. They are available from AFS, 4th Floor Suite, 1319-18th Street, N.W., Washington, DC 20036, at the following rates:

Journal	Yearly Subscription per Volume	Single or Back Issues
Voprosy	\$125.00	\$20.00
Gidrobiologicheskii	100.00	18.00

As a special offer, new subscribers are allowed a 30% discount on single or back issues.

The cover-to-cover translation of the Russian bimonthly fishery and oceanography journal *Okeanologiya* (Oceanology) has been sponsored since 1965 by the American Geophysical Union (AGU). Vols. 5-12, 1965-1972, have been translated to date and are available from AGU, 1707 L Street, N.W., Washington, DC 20036. Yearly subscriptions are \$90.00 for Vol. 12 and single issues are \$30.00 each. Back numbers are available at the following rates:

	Per Volume	Single Issues
Vol. 5 (1965) through Vol. 8 (1968)	\$45.00	\$ 8.50
Vol. 9 (1969)	60.00	12.50
Vol. 10 (1970) and Vol. 11 (1971)	75.00	30.00

"Fishing Business Management" Issued

Oregon State University Extension Service has issued a new publication entitled "Fishing Business Management." The bulletin was prepared to assist fishermen in understanding some of the terms and concepts of business management as they apply to fishing. There are no "short cuts" to better management, and the bulletin does not pretend to provide ready solutions to management problems.

Unfortunately, the terminology of business management is frequently

confusing to the uninitiated. Businessmen, as well as fishermen, have their own "language." Although new (and sometimes confusing) terminology is minimized here, readers of the publication should be prepared to learn some new business management concepts.

To obtain the bulletin entitled "Fishing Business Management," contact Extension Service, Oregon State University, Corvallis, OR 97331.

Russian Fisheries Papers Translated

The following Russian publications were recently translated and printed in Israel for the National Marine Fisheries Service (NMFS), NOAA, under the Special Foreign Currency Science Information Program (financed with Public Law 480 funds). They are sold at the indicated prices by the National Technical Information Service, Springfield, VA 22151. When ordering, cite the translations' accession numbers.

1. "Shark Flesh in the Food Industry," by V. S. Gordievskaya, Pacific Ocean Research Institute of Marine Fisheries and Oceanography (TINRO), Vladivostok, 1971, 26 pp. The volume deals with the food value of sharks and the technological characteristics and culinary utilization of shark meat. The species covered include mostly sharks of the Pacific Ocean. Discussed in detail are the size-weight and technochemical properties of sharks; removal of urea; and the preparation of preserved, smoked and cured products, sausages, and fins. The translation includes a list of common and scientific names of sharks appearing in the text. TT 72-50020, \$3.00.

2. "Mass Cultivation of Invertebrates. Biology and Methods," by I. V. Ivleva, Academy of Sciences of the U.S.S.R., "Nauka" Publishers, Moscow, 1969, 148 pp. The book deals with the biology and cultivation of some invertebrate species which are reared on a mass scale in the USSR: soil Oligochaeta; free-living nematodes;

phyllopod crustaceans; Daphnidae; and chironomid larvae. The biology of the species is characterized and a brief outline of their gross morphology is given. Also discussed are: distribution and relation to environmental factors; reproduction, growth, and development; population growth; feeding; chemical composition of bodies; and respiration. The description of culturing methods includes the initial and peak density of the culture, rearing periods, maintenance of optimal conditions, manipulations of the culture, feeds and feeding regime, and output. Methods for the maintenance of animal groups in the laboratory are given in some cases. TT 72-50055, \$4.75.

3. "Echolocation in Animals," by E. Sh. Airapetyants and A. I. Konstantinov, Academy of Sciences of the USSR, "Nauka" Publishers, Leningrad, 1970, 309 pp. The book gives information on various little known aspects of the echolocating animals and traces the patch of man's discovery of their specialized means of spatial analysis. Described in detail are the parameters of acoustic orientation signals, the mechanisms of their emission, and the reception and analysis of sound reflected from objects. An appraisal is made of the possibilities of echolocation, with particular emphasis on bats and dolphins. A survey of echolocation in marine animals includes also baleen whales, Cetacea in general, and Pinnipedia. TT 72-50012, \$7.00.

4. "Disease of Pond Fishes," by O. N. Bauer, V. A. Musselius, and Yu. A. Strelkov, "Kolos" Publishers, Moscow, 1969, 220 pp. Deals with the major infections, parasitic and non-communicable diseases of pond fishes. It answers questions on the causes of diseases and on measures for their prevention, treatment, and control through therapeutic and biological methods. In addition to the diseases of common species such as carp and trout, disease of fish imported for

pond culture, mainly plant-feeding species and whitefish, are also described. TT 72-50070, \$5.75.

Polish Journals Are Translated

The translation and printing of selected articles from the Polish journal *Technika i Gospodarka Morska* (Marine Technology and Management) are being done in Poland for the National Science Foundation under the Special Foreign Science Information Program (financed with Public Law 480 funds). The translations are sold for \$3.00 each by the National Technical Information Service (NTIS), Springfield, VA 22151. Selections from one or two issues are included under one cover and the latest ones to be published are from Vol. 20, 1970; Nos. 5-6 as TT 70-55125/5,6, and No. 7 as TT 70-55125/7. When ordering, cite the translations' accession numbers.

Articles on fisheries in those issues include: utilization of costs calculation as an instrument for decision making in the fishing industry; Barents Sea fishery resources and their exploitation; level of working time utilization by deep-sea fishing craft; reconnaissance craft and provision of electric equipment for fishing craft; question of regulating prices of fish and fishery products; transporting fish in East Germany and Poland; problems of preventing marine pollution; comparison of input and output in livestock production and marine fisheries; international market for frozen fishery products; Polish Sea Fishing Zone and contemporary international practice; and problems of Turkish fisheries.

The translation and printing of selected articles from the Polish journal *Budownictwo Okretowe* (Shipbuilding) are also being done in Poland for the National Science Foundation under the Special Foreign Science Information Program (financed with Public Law 480 funds). The translations are sold for \$3.00 each by the

National Technical Information Service (NTIS), Springfield, VA 22151. Selections from two issues are included under one cover and the issues published so far are from Vol. 15, 1970; Nos. 1-2 as TT 70-55126/1,2, Nos. 3-4 as TT 70-55126/3,4, Nos. 5-6 as TT 70-55126/5,6, Nos. 7-8 as TT 70-55126/7,8, and Nos. 9-10 as TT 70-55126/9,10. When ordering, cite the translations' accession numbers. Articles on fisheries in those issues include: fishing fleet of Cyprus; power rating analysis of propulsion engines for fishing vessels; power plants for small fishing vessels; freezer trawler LASKARA type B-29; 1969 vessels output of East Germany; tonnage and structure; purse seiners, development trends and conclusions; and freezer trawlers type B-427.

Economic Data Available

The Economic Research Division of the National Marine Fisheries Service has recently published "Basic Economic Indicators" covering many of the major fisheries of the United States. The publications bring together diverse data on the main species of fish landed and marketed in the United States. The data range from earnings and productivity of fishermen, value of fishing vessels, and socioeconomic characteristics of fish consumers, to biological assessment, foreign production and trade barriers. The range and breadth of data on a species basis make it possible to pursue research much more easily and to gain a general knowledge of developments in the Nation's fisheries.

Publications presently available are:

Menhaden, 1946-72	CFS No. 5934	June 1973
Scallops, 1930-72	CFS No. 6127	June 1973
Halibut, 1929-72	CFS No. 6128	June 1973
Salmon, 1947-72	CFS No. 6129	Aug. 1973
Tuna, 1949-72	CFS No. 6130	June 1973
Shrimp, 1949-72	CFS No. 6131	June 1973
Blue Crab, 1947-72	CFS No. 6132	Sept. 1973
King and Dungeness Crabs, 1947-72	CFS No. 6133	August 1973

Similar publications for groundfish, lobsters, clams and oysters are forthcoming.

Single copies can be obtained from:
Technical Information Division, D83
Environmental Science Information Center, NOAA
U.S. Department of Commerce
Washington, DC 20235

Recent NMFS Scientific Publications

NOAA Technical Report NMFS SSRF-666, Turner, William R., and George N. Johnson, "Distribution and relative abundance of fishes in Newport River, North Carolina," September 1973, iv + 23 p. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402. Price: 35 cents.

ABSTRACT

Monthly sampling in Newport River during 1970 disclosed a total of 104 species of fishes within the system. Sampling extended from the lower reaches of the estuary upstream into tidal fresh waters, and covered a mid-channel distance of 34.87 km. To sample as wide a range of species as possible, an array of collecting gear was used, i.e., haul seine, surface trawl, bottom trawls (two sizes), and gill nets. In terms of catch per unit of effort, the surface trawl was the most successful gear employed, whereas gill nets, the least efficient gear, captured the greatest variety of species.

Most of the species of fishes collected in the system were marine forms. Only 15 essentially fresh-water species were collected and 5 of these (longnose gar, gizzard shad, golden shiner, white catfish, and black crappie) showed varying degrees of tolerance for saline waters (0.6-33.7 percent).

Relative numbers of fishes in collections by the different gears indicated that seven species made up 97 percent of the total catch which comprised nearly 129,000 individuals. The dominant species were all marine euryhaline forms that used the estuary as a nursery area, penetrating well upstream into brackish or even tidal fresh waters. Seasonal distribution and abundance of the dominant species, as well as other species collected in substantial numbers, are discussed.

Biomass of fishes in collections by haul seine was estimated at 0.93

g/m² for littoral waters of the estuary. Samples collected by other gears did not yield satisfactory estimates of biomass.

NOAA Technical Report NMFS SSRF-667, Thomas, James C., "An analysis of the commercial lobster (*Homarus americanus*) fishery along the coast of Maine, August 1966 through December 1970," June 1973, v + 57 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Price: 65 cents.

ABSTRACT

We have used some life history information and detailed catch and effort data from probability sampling of the commercial catch of lobsters to estimate a biological minimum size of 89-mm (3½ inches) carapace length for maximum sustainable yield. In view of this recommendation, the maximum size regulation of 127-mm (5 inches) carapace length is unnecessary.

NOAA Technical Report NMFS CIRC-375, Day, John H., "New polychaeta from Beaufort, with a key to all species recorded from North Carolina," July 1973, xiii + 140 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Price: \$1.25.

ABSTRACT

Over 6,000 polychaete worms belonging to 229 species were collected on a transect running from the sandy shore near Beaufort, N.C., to the upper part of the continental slope in 200 m. Eleven more species were collected from the shores of Beaufort Sound and from grab samples in 400, 600, and 3,020 m off North Carolina. The whole collection includes 19 new species, 2 new subspecies, and 16 new records for the United States. These have been described. An examination of the literature revealed that a further 83 species had been recorded by earlier workers so that a total of 323 species of polychaete worms are now known from North Carolina. Keys have been constructed to cover the whole fauna, all original records have been listed, and references to good descriptions

of each species are given. During the course of the work several type specimens were examined and this has resulted in certain changes in nomenclature and the redefinition of certain genera in the families Orbiniidae, Flabelligeridae, and Ampharetidae.

NOAA Technical Report NMFS CIRC-386, McCloskey, Lawrence R., "Marine flora and fauna of the north-eastern United States. Pycnogonida," September 1973, iii + 12 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Price: 30 cents.

ABSTRACT

The manual includes an introduction on the general biology, an illustrated key, an annotated systematic list, a selected bibliography, and an index to the Pycnogonida along the coast of the United States from Maine to New Jersey out to 100 m.

NOAA Technical Memorandum NMFS ABFL-1, Bailey, Jack E., and William R. Heard, "An improved incubator for salmonids and results of preliminary tests of its use," September 1973, iii + 7 p.

ABSTRACT

The environmental requirements of salmonid eggs and alevins are not fully met in conventional hatchery practices, and the resulting fry are physically and behaviorally different from those produced in nature. This report describes an incubator that simulates the natural environment while functioning under rigorous climatic conditions with minimal maintenance. Pink salmon fry, *Oncorhynchus gorbuscha*, reared in a laboratory test of this incubator emerged earlier than wild fry and were as heavy as wild fry. Midrun incubator-reared fry were shorter than late run wild fry, but the incubator-reared fry still had 0.6 to 0.9 mg of yolk, whereas the late run wild fry had none. Midrun incubator-reared fry were superior to early run wild fry in ability to resist starvation. A field test established that with little maintenance the incubator can produce fry during the spring and summer.