

considered to replace test fishing at the mouths of rivers in Cook Inlet to more precisely regulate fisheries during the season.

The side scanner was designed and developed by Al Menin of Bendix Corporation under contract to Commercial Fisheries Division of the Alaska Department of Fish and Game. It is the product of the most recent advances in

electronic technology. The usefulness of this unit has led the department to order another side scanner for application in Cook Inlet and elsewhere in the state. This unit would probably be used to evaluate smolt migrations in Bristol Bay early in the year and subsequently would be brought to Cook Inlet for use in counting adult salmon escapements. Based on this season's experience cer-

tain modifications will be built into the new counter. It will have a variable-beam width transducer and 10 individual counters. Each counter will cover 10 percent of the horizontal range of the beam. The new version will be particularly useful in streams where high water velocity or debris content precludes the use of the original 30-transducer system.

Index

Authors, Titles, Subjects in Marine Fisheries Review, Vol. 37, Nos. 1-12, 1975

Indexed here by author, title, and subject are the 62 papers which appeared in *Marine Fisheries Review* in 1975. A list of these papers, in numerical order, appears at the end of the Index. Anonymous notes, news articles, and regular departments are not indexed, since they are often of preliminary or ephemeral nature. Entries are indexed by number and page (i.e., 7:12 indicates the July number, page 12).

A

Acuña C., Amado—see Mandelli and Acuña C.
Aerococcus viridans (var.) *homari*
cause of fatal infection in lobsters, 5-6:20

Alaska

salmon
limited entry, empirical study of, 7:22
salmonids
new incubator, 7:26

Albacore—see Tuna, albacore
Alosa sapidissima—see Shad, American

Amphipods

microsporidian infections of
influence on sex determination, 5-6:43
pathogenicity, 5-6:42
taxonomic survey, 5-6:39
transmission, 5-6:41

"(An) analysis of prices paid to fishermen before and after the establishment of a fishery cooperative," by Charles W. Lamb, Jr., 3:36

Aquaculture

constraints on projects
cables and pipelines, 1:34
fishing rights, 1:34
navigational rights, 1:33
pollution and water quality, 1:34
recreational rights, 1:34
riparian landowner's rights, 1:34

crustacean, in Middle America
business plan, 1:28
culture technology, 1:26
markets, 1:24
siting the enterprise, 1:26
in the Americas
conflict of interest and its resolution as factors in commercialization, 1:48
institutional constraints to the development of contiguous zone, 1:31
high seas, 1:31
inland waters, 1:32
territorial sea, 1:31
seaweed
cultivation, 1:7
overview, 1:5
Sea Grant projects, 1:13
uses of, 1:3

Aquaculture, planetary

seas as range and cropland
choosing the crops, 4:7
comparison of polar hemispheres, 4:6
determinants of productivity, 4:6
management, 4:7
oceans seen from space, 4:5
range and cropland, 4:6
seeding the Southern Ocean with salmon, 4:9
stocking the ocean range, 4:9

Argopecten irradians—see Scallop, bay

Arthropods

review of involvements of *Lagenidium* with, 5-6:61

"Assessment of north Pacific stocks of whales," by Michael F. Tillman, 10:1

"(An) assessment of the South Pacific albacore, *Thunnus alalunga*, fishery, 1953-72," by Robert A. Skillman, 3:9

"(The) Atlantic coast surf clam fishery—1972," by John W. Ropes, Allan M. Barker, and George E. Ward, Jr., 8:22

"(The) Atlantic coast surf clam fishery—1973," by John W. Ropes, Arthur S. Merrill, and George E. Ward, Jr., 12:31

Atlantic Ocean

coastal
surf clam fishery, 1972, 8:22
surf clam fishery, 1973, 12:31

Atlantic Ocean, northwestern

bluefin tuna
purse-seine fishery, 3:1

Atlantic Ocean, western

bluefin tuna

possible anomalies, 12:1
"Attitudinal and demographic characteristics for regular and irregular users of fresh shellfish," by Peter M. Sanchez, 2:27

B

Barker, Allan M.—see Ropes et al.

"Blue gold: Mariculture of the edible blue mussel (*Mytilus edulis*)," by C. Graham Hurlburt and Sarah W. Hurlburt, 10:10

Boats

marine charter fishing industry
economic analysis of Georgia's, 4:11

Boats, recreational

United States
selected information on, 2:16

Bottomfish

northern Gulf of Mexico
fishing grounds, 7:3
historical aspects, 7:1
processing, 7:5
tactics, 7:4
vessels and gear, 7:2

Brevoortia patronus—see Menhaden, Gulf

Brevoortia tyrannus—see Menhaden, Atlantic

"(A) brief review of the involvements of *Lagenidium*, an aquatic fungus parasite, with arthropods," by Clyde J. Umphlett and E. M. McCray, Jr., 5-6:61

Brown, E. Evan, and Fred J. Holemo, "An economic analysis of Georgia's marine charter boat fishing industry," 4:11

Bulnheim, H.-P., "Microsporidian infections of amphipods with special reference to host-parasite relationships: A review," 5-6:39

"Bypass and collection system for protection of juvenile salmon and trout at Little Goose Dam," by Jim Ross Smith and Winston E. Farr, 2:31

C

California, southern

fish prices
historical trends, 11:22

Callinectes sapidus—see Crab, blue

Canals, housing development

ecological consequences, regulations, and recommendations
changes in water quality and sediment type, 10:20
destruction of wetland vegetation, 10:20
qualitative and quantitative faunal changes, 10:22
regulatory mechanisms in management, 10:22
types of development, 10:19

Carver, Joseph H., "Vacuum cooling and thawing fishery products," 7:15

Castagna, Michael, "Culture of the bay scallop, *Argopecten irradians*, in Virginia," 1:19

"Cellular response to injury in penaeid shrimp," by C. T. Fontaine and D. V. Lightner, 5-6:4

Central America

crustacean aquaculture, 1:24

Centropomus striata—see Sea bass, black

Chapoton, Robert B.—see Schaaf et al.

Charm, Stanley E.—see Ronsivalli and Charm

Clam, surf

Atlantic coast fishery

fishing areas, 8:22, 12:31
 fleets, 8:22, 12:31
 landing statistics, 8:24, 12:31
 status and trends, 8:26, 12:33
Columbia River Basin
 electronic tags and related tracking techniques
 aid in study of migrating salmon and steelhead
 trout in, 2:9
Colwell, R. R., T. C. Wicks, and H. S. Tubiash,
 "A comparative study of the bacterial flora of the
 hemolymph of *Callinectes sapidus*," 5-6:29
 "(A) comparative study of the bacterial flora of the
 hemolymph of *Callinectes sapidus*," by R. R.
 Colwell, T. C. Wicks, and H. S. Tubiash, 5-6:29
 "Conflict of interest and its resolution as factors in
 the commercialization of aquaculture in the
 Americas," by Simon Williams, 1:48
 "Constraints on aquaculture projects," by Burton
 A. Landy, 1:33
Coston, L. C.—see Stone et al.
 "Costs and earnings in the spiny lobster fishery,
 Florida Keys," by Bruno G. Noetzel and
 Mikolaj G. Wojnowski, 4:25
Crab, blue
 comparative study of the bacterial flora of the
 hemolymph, 5-6:29
 serum changes associated with *Paramoeba per-
 niciosa*
 acrylamide gel electrophoresis, 5-6:35
 biochemical analysis, 5-6:35
 immunoelectrophoresis, 5-6:35
Crab, horseshoe
 immunological mechanisms
 attempted change of hematocrit and agglutinin
 concentration, 5-6:12
 bacterial cultures, 5-6:11
 bactericidal assays, 5-6:13
 chemical and physical analysis of exudate,
 5-6:12
 collection of hemolymph, 5-6:12
 electrophoresis, 5-6:12
 exudate agglutination tests, 5-6:12
 hemocyte hematocrit determination, 5-6:12
 hemocytes and coagulation, 5-6:13
 hemolymph heteroagglutinin, 5-6:13
 hypodermal gland anatomy and histochemis-
 try, 5-6:13
 hypodermal gland mucoprotein, 5-6:15
 preparation of antibody, 5-6:13
 preparation of hemocyte lysates, 5-6:12
 production of exudate, 5-6:12
Crab, mud
 fine structure of *Minchinia* sporulation in, 5-6:46
Crab, red
 survey off northeastern U.S.
 bottom sediments and topography, 8:19
 distribution, density, and biomass in relation
 to geographic area and water depth, 8:8
 fishery, 8:3
 notes on biology, 8:15
 previous studies, 8:1
 size, 8:6
Crassostrea rhizophorae—see Oyster, mangrove
Croaker
 northern Gulf of Mexico
 fishing grounds, 7:8
 historical aspects, 7:6
 processing, 7:9
 tactics, 7:8
 vessels and gear, 7:7
Cross, F. A.—see Stone et al.
 "Crustacean aquaculture in Middle America," by
 Harold H. Webber, 1:24
Crustaceans
 diseases of
 introductory remarks, 5-6:2
 "Culture of the bay scallop, *Argopecten irradians*,
 in Virginia," by Michael Castagna, 1:19
 "(The) culture of the mussel, *Perna perna*, and the
 mangrove oyster, *Crassostrea rhizophorae*, in
 Venezuela," by Enrique F. Mandelli and Amado
 Acuña C., 1:15

D

"Deep-sea red crab, *Geryon quinquedens*, survey
 off northeastern United States," by Roland L.
 Wigley, Roger B. Theroux, and Harriett E. Mur-
 ray, 8:1
Defense Meteorological Satellite Program
 fishing fleet activities revealed by night-time data
 from, 4:1
Dehydrocooling
 fresh fish, 7:17
 "Development of a program to rehabilitate the oys-
 ter industry of Prince Edward Island," by Clyde
 L. MacKenzie, Jr., 3:21

Dolphin, bottle-nosed
 observations of feeding behavior
 crowding, 9:14
 feeding on fish attracted to nonworking
 shrimpers, 9:13
 feeding on trash fish, 9:12
 foraging behind working shrimp boats, 9:10
 herding of schools of fish, 9:13
 individual feeding, 9:14
 sweeping schools of small baitfish, 9:14

E

"(An) economic analysis of Georgia's marine char-
 ter boat fishing industry," by E. Evan Brown and
 Fred J. Holemo, 4:11
 "Economic impact of commercial shrimp landings
 on the economy of Texas," by Wade L. Griffin
 and Lonnie L. Jones, 7:12
 "Edible seaweeds—a survey of the industry and
 prospects for farming the Pacific Northwest," by
 Charles J. Hunter, 2:19
 "Electronic tags and related tracking techniques
 aid in study of migrating salmon and steelhead
 trout in the Columbia River Basin," by Gerald
 E. Monan, James H. Johnson, and Gordon F.
 Esterberg, 2:9
 "(An) empirical study of limited entry in Alaska's
 salmon fisheries," by James E. Owers, 7:22
 "Energy efficiency comparison between the
 Washington and Japanese otter trawl fisheries of
 the northeast Pacific," by Douglas J. Wiviott and
 Stephen B. Mathews, 4:21
Esterberg, Gordon F.—see Monan et al.
Europe
 bluefin tuna
 possible anomalies, 12:3
 "Experiments on some possible effects of tire reefs
 on pinfish (*Lagodon rhomboides*) and black sea
 bass (*Centropristis striata*)," by R. B. Stone, L.
 C. Coston, D. E. Hoss, and F. A. Cross, 3:18
 "Exploratory shrimp trawling in the Hawaiian Is-
 lands," by Paul Struhsaker and Howard O.
 Yoshida, 12:13

F

Farr, Winston E.—see Smith and Farr
Fett, Robert W., "Fishing fleet activities revealed
 by night-time data from the Defense Meteorolog-
 ical Satellite Program (DMSP)," 4:1
 "Fine structure of *Minchinia* sp. (Haplosporida)
 sporulation in the mud crab, *Panopeus herbstii*,"
 by Frank O. Perkins, 5-6:46
Finfish
 northern Gulf of Mexico
 distribution, 7:9
Fish
 high school students' perceptions of, as a menu
 item
 importance of product attributes, 10:26
 perceptions of fish compared to beef and pork,
 10:25
Fish prices
 historical trends in southern California commer-
 cial fisheries
 market fish, 11:28
 tunas, 11:25
 wetfish, 11:23
 "Fish prices: Historical trends in southern Califor-
 nia commercial fisheries," by Gary Stauffer,
 Alex MacCall, and Bruce Wahlen, 11:22
Fish, refrigerated
 spoilage and shelf life prediction
 shelf life prediction, 4:33
 spoilage and spoilage rate factors, 4:32
Fisheries, otter trawl
 energy efficiency comparison between Washing-
 ton and Japan
 efficiency, 4:23
 energy inputs, 4:22
 energy outputs, 4:23
 fisheries, 4:21
Fishery cooperative
 analysis of prices paid to fishermen before and
 after establishment of
 markets, 3:36
 objective, 3:36
 percent of export prices paid to fishermen, 3:38
 prices received by fishermen, 3:37
 products, 3:36
Fishery products
 vacuum cooling and thawing, 7:15
Fishing, distant water
 observed and perceived impacts
 Oregon otter trawl case, 4:13
Fishing fleet

activities revealed by night-time data from De-
 fense Meteorological Satellite Program, 4:1
 "Fishing fleet activities revealed by night-time data
 from the Defense Meteorological Satellite Pro-
 gram (DMSP)," by Robert W. Fett, 4:1
Florida Keys
 spiny lobster fishery
 costs and earnings in, 4:25
Flounder
 night stalking in ocean surf
 fishing implements, 9:29
 fishing methods, 9:27
 general technique, 9:28
 physical conditions, 9:28
 species caught, 9:29
Fontaine, C. T., and D. V. Lightner, "Cellular
 response to injury in penaeid shrimp," 5-6:4
 "Forecasts of Atlantic and Gulf menhaden catches
 based on the historical relation of catch and
 fishing effort," by William E. Schaaf, James E.
 Sykes, and Robert B. Chapoton, 10:5
Fournier, Fernando, "Institutional constraints to
 the development of aquaculture," 1:31

G

Gaffkemia
 fatal infection of lobsters, 5-6:20
 "Gaffkemia, the fatal infection of lobsters (genus
Homarus) caused by *Aerococcus viridans* (var.)
homari: A review," by James E. Stewart, 5-6:20
Georgia
 marine charter boat fishing industry
 economic analysis of, 4:11
Geryon quinquedens—see Crab, red
Griffin, Wade L.—see Nichols and Griffin
 and Lonnie L. Jones, "Economic im-
 pact of commercial shrimp landings on the
 economy of Texas," 7:12
Gulf Coast
 shrimp
 water surface area within statistical subareas
 used in reporting data, 12:22
Gulf of Mexico
 shrimp fishery
 trends in catch-effort relationships, 2:1
Gulf of Mexico, northern
 industrial and foodfish industries, 7:1
Gould, Edith—see Pauley et al.
Guthertz, Elmer J., Gary M. Russell, Anthony F.
Serra, and Bennie A. Rohr, "Synopsis of the
 northern Gulf of Mexico industrial and foodfish
 industries," 7:1

H

Hawaii
Penaeus marginatus
 found in quantities thought sufficient to sustain
 a small trawl fishery, 12:13
 shrimp trawling
 exploratory study, 12:13
 "High school students' perceptions of fish as a
 menu item," by Charles W. Lamb, Jr., 10:25
Holemo, Fred J.—see Brown and Holemo
Hooker, Charles—see Laurs et al.
Hoss, D. E.—see Stone et al.
 "Housing development canals in the coastal zone
 of the Gulf of Mexico: Ecological consequences,
 regulations, and recommendations," by William
 N. Lindall, Jr. and Lee Trent, 10:19
Hreha, Larry—see Laurs et al.
Hunter, Charles J., "Edible seaweeds—a survey
 of the industry and prospects for farming the
 Pacific Northwest," 2:19
Hurlburt, C. Graham, and Sarah W. Hurlburt,
 "Blue gold: Mariculture of the edible blue mussel
 (*Mytilus edulis*)," 10:10
Hurlburt, Sarah W.—see Hurlburt and Hurlburt

I

"(The) immunological mechanisms of the horse-
 shoe crab, *Limulus polyphemus*," by John I.
 Stagner and James R. Redmond, 5-6:11
Incubator
 salmonids, 7:26
 "Institutional constraints to the development of
 aquaculture," by Fernando Fournier, 1:31
 "Introductory remarks on diseases of crusta-
 ceans," by Gilbert B. Pauley, 5-6:2

J

Japan
 1975 fisheries
 Antarctic krill, 11:11

- automatic fishing machines, 11:13
 bluefin tuna rearing, 11:10
 building boom continues for large skipjack tuna vessels, 11:13
 capturing skipjack tuna live bait on high seas, 11:10
 problems with Soviet fishermen, 11:12
 purse seining in western Pacific, 11:2
 sardines, 11:13
 skipjack tuna fishery survey in Micronesia, 11:9
 southern water skipjack tuna fishery, July 1974-January 1975, 11:3
 tuna industry dilemma, 11:1
 unusual abundance of eel elvers, 11:12
 use of live bigeye scad as longline bait, 11:11
 otter trawl fisheries in northeast Pacific
 energy efficiency comparison with Washington, 4:21
- "Japan's fisheries, 1975," by Tamio Otsu, 11:1
 Jones, Lonnie L.—see Griffin and Jones
 Johnson, James H.—see Monan et al.
 Joyner, Timothy, "Toward a planetary aquaculture—the seas as range and cropland," 4:5
- ### K
- Katsuwonus pelamis*—see Tuna, skipjack
 Kaylor, J. D.—see Roy and Kaylor
 Kearney, R. E., "Skipjack tuna fishing in Papua New Guinea, 1970-73," 2:5
- ### L
- "Laboratory evaluation of a Denil-type steepass fishway with various entrance and exit conditions for passage of adult salmonids and American shad," by Emil Slatick, 9:17
- Lagenidium*
 review of involvements with arthropods, 5-6:61
- Lagodon rhomboides*—see Pinfish
 Lamb, Charles W., Jr., "An analysis of prices paid to fishermen before and after the establishment of a fishery cooperative," 3:36
 ———, "High school students' perceptions of fish as a menu item," 10:25
 Landy, Burton A., "Constraints on aquaculture projects," 1:33
 Laurs, R. Michael, Charles Hooker, Larry Hreha, and Richard Lincoln, "A uniform U.S. west coast logbook for albacore tuna, *Thunnus alalunga* (Bonnaterre), and coastwide albacore fishery data system," 11:14
 Leatherwood, Stephen, "Some observations of feeding behavior of bottle-nosed dolphins (*Tursiops truncatus*) in the northern Gulf of Mexico and (*Tursiops cf. T. gilli*) off southern California, Baja California, and Nayarit, Mexico," 9:10
 Lewis, Donald H.—see Lightner and Lewis
 Lightner, Donald V.—see Fontaine and Lightner
 ———, and Donald H. Lewis, "A septicemic bacterial disease syndrome of penaeid shrimp," 5-6:25
- Limulus polyphemus*—see Crab, horseshoe
 Lincoln, Richard—see Laurs et al.
 Lindall, William N., Jr., and Lee Trent, "Housing development canals in the coastal zone of the Gulf of Mexico: Ecological consequences, regulations, and recommendations," 10:19
- Little Goose Dam
 bypass and collection system for protection of juvenile salmon and trout at, 2:31
- Lobster, spiny
 costs and earnings in Florida Keys fishery
 fishing operations, 4:27
 laws and regulations, 4:26
 returns to capital and labor, 4:26
 revenue and cost structure, 4:28
 sampling, 4:27
- Lobsters
 gaffkemia, fatal infection of
 influence of environmental factors, 5-6:20
 pathogen growth and biochemical changes in host, 5-6:21
 "Low level ionizing radiation and spice treatment of raw, headless, white shrimp," by A. N. Roy and J. D. Kaylor, 4:16
- ### M
- MacCall, Alec—see Stauffer et al.
 MacKenzie, Clyde L., Jr., "Development of a program to rehabilitate the oyster industry of Prince Edward Island," 3:21
 McCray, E. M., Jr.—see Umphlett and McCray
 Mandelli, Enrique F., and Amado Acuña C., "The culture of the mussel, *Perna perna*, and the mangrove oyster, *Crassostrea rhizophorae*, in Venezuela," 1:15
 Mathews, Stephen B.—see Wiviott and Mathews
 Mathieson, Arthur C., "Seaweed aquaculture," 1:2
- Menhaden, Atlantic
 forecasts of catches based on catch and fishing effort
 description of fishery, 10:6
 estimation of catches in previous years, 10:6
 forecasts of 1973 and 1974 catches, 10:7
 status of fishery and implications for management
 analysis of fishery, 9:7
 historical background of fishery, 9:3
 history and purpose of Federal biological studies, 9:2
 management recommendation for fishery, 9:9
- Menhaden, Gulf
 forecasts of catches based on catch and fishing effort
 description of fishery, 10:7
 estimation of catches in previous years, 10:7
 forecasts of 1973 and 1974 catches, 10:7
 status of fishery and implications for management
 historical background of fishery, 9:3
 history and purpose of Federal biological studies, 9:2
- Merrill, Arthur S.—see Ropes et al.
 "Microsporidian infections of amphipods with special reference to host-parasite relationships: A review," by H.-P. Bulnheim, 5-6:39
- Microwaves
 shrimp processing, effects on, 12:25
- Minchinia*
 fine structure of sporulation in mud crab, 5-6:46
- Monan, Gerald E., James H. Johnson, and Gordon F. Esterberg, "Electronic tags and related tracking techniques aid in study of migrating salmon and steelhead trout in the Columbia River Basin," 2:9
- Murray, Harriett E.—see Wigley et al.
 Mussel (*Perna perna*)
 culture in Venezuela
 areas, 1:15
 environmental factors, 1:17
 future outlook, 1:17
 techniques, 1:15
- Mussel, blue
 mariculture of
 Atlantic coast of France—pole culture, 10:14
 Netherlands bottom culture, 10:15
 northwest Spain—raft or rope culture, 10:11
- Mytilus edulis*—see Mussel, blue
- ### N
- "Net-pen culture of Pacific salmon in marine waters," by Anthony J. Novotny, 1:36
 "(A) new incubator for salmonids designed by Alaska laboratory," by Frederick H. Salter, 7:26
 Newman, Martin W.—see Pauley et al.
 Nichols, John P., and Wade L. Griffin, "Trends in catch-effort relationships with economic implications: Gulf of Mexico shrimp fishery," 2:1
 "Night stalking flounder in the ocean surf," by Stanley M. Warlen, 9:27
 Noetzel, Bruno G., and Mikolaj G. Wojnowski, "Costs and earnings in the spiny lobster fishery, Florida Keys," 4:25
 Novak, A. F.—see Rao and Novak
 Novotny, Anthony J., "Net-pen culture of Pacific salmon in marine waters," 1:36
- ### O
- "Observed and perceived impacts of distant water fishing: Oregon otter trawl case," by Courtland L. Smith, 4:13
- Oregon
 distant water fishing off
 observed and perceived impacts, 4:13
 Otsu, Tamio, "Japan's fisheries, 1975," 11:1
 Owers, James E., "An empirical study of limited entry in Alaska's salmon fisheries," 7:22
- Oyster, mangrove
 culture in Venezuela
 areas, 1:15
 environmental factors, 1:17
 future outlook, 1:17
 techniques, 1:15
- Oyster industry
 development of program to rehabilitate, of Prince Edward Island
 applied research needed, 3:34
 cost-benefit ratios, 3:34
 development of management program, 3:30
 ecology of oyster grounds, 3:23
 functional operations of industry, 3:26
 oyster biology, 3:22
 pilot projects conducted, 3:31
 specific management program, 3:32
- ### P
- Pacific Ocean, northeast
 otter trawl fisheries
 energy efficiency comparison between Washington and Japanese, 4:21
- Pacific Ocean, south
 albacore
 assessment of fishery, 1953-72, 3:9
Panopeus herbstii—see Crab, mud
Panulirus argus—see Lobster, spiny
 Papua New Guinea
 skipjack tuna fishing in
 1970-73, 2:5
- Paramoeba perniciosa*
 cause of serum changes in blue crab, 5-6:34
- Patella, Frank, "Water surface area within statistical subareas used in reporting Gulf Coast Shrimp Data," 12:22
- Pauley, Gilbert B., "Introductory remarks on diseases of crustaceans," 5-6:2
 ———, Martin W. Newman, and Edith Gould, "Serum changes in the blue crab, *Callinectes sapidus*, associated with *Paramoeba perniciosa*, the causative agent of gray crab disease," 5-6:34
- Penaeus marginatus*
 Hawaiian Islands, exploratory study
 found in quantities thought sufficient to sustain a small trawl fishery, 12:13
- Penaeus setiferus*—see Shrimp, white
 Perkins, Frank O., "Fine structure of *Minchinia* sp. (Haplosporida) sporulation in the mud crab, *Panopeus herbstii*," 5-6:46
- Perna perna*—see Mussel
 Pinfish
 experiments on some possible effects of tire reefs on, 3:18
 "Possible anomalies of giant bluefin tuna," by Howard A. Schuck, 12:1
- Prince Edward Island
 oyster industry
 development of program to rehabilitate, 3:21
- Puget Sound
 potential for *Porphyra* culture, 2:25
 "The purse-seine fishery for bluefin tuna in the northwestern Atlantic Ocean," by Gary T. Sakagawa, 3:1
- ### R
- Radiation
 white shrimp
 low level ionizing, and spice treatment, 4:16
 Rao, M. R. R., and A. F. Novak, "Thermal and microwave energy for shrimp processing," 12:25
 Redmond, James R.—see Stagner and Redmond
 Ridgely, John, "Selected information on recreational boats in the United States," 2:16
 Rohr, Bennie A.—see Gutherz et al.
 Ronsivalli, Louis J., and Stanley E. Charm, "Spoilage and shelf life prediction of refrigerated fish," 4:32
 Ropes, John W., Allan M. Barker, and George E. Ward, Jr., "The Atlantic coast surf clam fishery—1972," 8:22
 ———, Arthur S. Merrill, and George E. Ward, Jr., "The Atlantic coast surf clam fishery—1973," 12:31
 Roy, A. N., and J. D. Kaylor, "Low level ionizing radiation and spice treatment of raw, headless, white shrimp," 4:16
 Russell, Gary M.—see Gutherz et al.
- ### S
- Sakagawa, Gary T., "The purse-seine fishery for bluefin tuna in the northwestern Atlantic Ocean," 3:1
- Salmo gairdneri*—see Trout, steelhead
- Salmon
 Alaskan
 limited entry, empirical study of, 7:22
 bypass and collection system for protection of juveniles
 fish holding area, 2:35
 fish screening facilities, 2:33

- gatewell orifices and transportation pipe, 2:32
upwell and fish grader, 2:34
- electronic tags and related tracking techniques
aid in migration study
future, 2:15
radio tracking, 2:13
sonic tracking, 2:10
- net-pen culture of Pacific in marine waters
brood stock development, 1:44
commercial pens, 1:38
commercial production farms, 1:45
diseases, 1:41
enhancement of sport fisheries, 1:46
environmental requirements, 1:45
experimental pens, 1:37
growth, 1:40
possible uses of hybrids, 1:43
- Salmonids
Alaska
new incubator, 7:26
laboratory evaluation of Denil-type steepass
fishway for passage of
effect of 50-foot long Denil on fish passage,
9:24
effect of entrance conditions, 9:23
effect of exit conditions, 9:23
equipment and procedures, 9:17
evaluation of prototype Denil fishway installation,
9:23
Salter, Frederick, "A new incubator for salmonids
designed by Alaska laboratory," 7:26
Sanchez, Peter M., "Attitudinal and demographic
characteristics for regular and irregular users of
fresh shellfish," 2:27
- Scallop, bay
culture in Virginia
conditioning for spawning, 1:21
development, 1:21
fertilization, 1:21
food, 1:22
larval competitors, 1:22
larval density and larval environment, 1:22
larval diseases, 1:22
larval predators, 1:22
natural history, 1:20
setting, 1:23
spawning, 1:21
- Schaff, William E., "Status of the Gulf and Atlan-
tic menhaden fisheries and implications for re-
source management," 9:1
———, James E. Sykes, and Robert B.
Chapoton, "Forecasts of Atlantic and Gulf
menhaden catches based on the historical rela-
tion of catch and fishing effort," 10:5
Schuck, Howard A., "Possible anomalies of giant
bluefin tuna," 12:1
- Sea bass, black
experiments on some possible effects of tire reefs
on, 3:18
- Seaweed
aquaculture
Chondrus, 1:10
Enteromorpha, 1:9
Eucheuma, 1:12
Gelidium, 1:9
Gracilaria, 1:9
kombu, 1:7
Macrocystis, 1:10
Monostroma, 1:9
nori, 1:7
overview, 1:5
Pterocladia, 1:9
Sea Grant projects, 1:13
uses of seaweeds, 1:3
wakame, 1:7
- "Seaweed aquacultures," by Arthur C.
Mathieson, 1:2
- Seaweeds, edible
survey of industry
Japanese production, 2:22
potential industry in United States, 2:23
U.S. production and supply, 2:20
world production, 2:20
- "Selected information on recreational boats in the
United States," by John Ridgely, 2:16
- "(A) septicemic bacterial disease syndrome of
penaeid shrimp," by Donald V. Lightner and
Donald H. Lewis, 5-6:25
- Serra, Anthony F.—see Gutherz et al.
- "Serum changes in the blue crab, *Callinectes
sapidus*, associated with *Paramoeba perniciosa*,
the causative agent of gray crab disease," by
Gilbert B. Pauley, Martin W. Newman, and
Edith Gould, 5-6:34
- Shad, American
laboratory evaluation of Denil-type steepass
fishway for passage of
effect of entrance conditions, 9:24
effect of exit conditions, 9:25
effect of test period duration, 9:25
- Shellfish
fresh
attitudinal and demographic characteristics for
regular and irregular users, 2:27
- Shrimp
Gulf Coast
water surface area within statistical subareas
used in reporting data, 12:22
- Hawaii, exploratory trawling
Penaeus marginatus found in quantities
thought sufficient to sustain a small trawl
fishery, 12:13
- Texas
economic impact, 7:12
thermal and microwave energy for processing,
12:25
- Shrimp, penaeid
cellular response to injury
fibrocytes, 5-6:7
"fixed" phagocytes, 5-6:6
hemocyte elimination of foreign material, 5-6:6
hemocyte function in encapsulation, 5-6:5
hemocyte function in phagocytosis, 5-6:5
melanin formation, 5-6:8
septicemic bacterial disease syndrome
bacteria isolated, 5-6:26
clinical signs of bacterial disease, 5-6:26
infectivity experiments, 5-6:26
methods of isolation and culture, 5-6:25
pathogenicity experiments, 5-6:27
- Shrimp, white
low level ionizing radiation and spice treatment
of raw, headless, 4:16
- Shrimp fishery
trends in catch-effort relationships in Gulf of
Mexico
catch, 2:3
catch/unit of effort, 2:3
effort, 2:1
- Shrimp trawling
Hawaiian Islands
exploratory study, 12:13
- Skillman, Robert A., "An assessment of the South
Pacific albacore, *Thunnus alalunga*, fishery,
1953-72," 3:9
"Skipjack tuna fishing in Papua New Guinea,
1970-73," by R. E. Kearney, 2:5
- Slatick, Emil, "Laboratory evaluation of a Denil-
type steepass fishway with various entrance and
exit conditions for passage of adult salmonids
and American shad," 9:17
- Smith, Courtland L., "Observed and perceived
impacts of distant water fishing: Oregon otter
trawl case," 4:13
- Smith, Jim Ross, and Winston E. Farr, "Bypass
and collection system for protection of juvenile
salmon and trout at Little Goose Dam," 2:31
- "Some observations of feeding behavior of bottle-
nosed dolphins (*Tursiops truncatus*) in the
northern Gulf of Mexico and (*Tursiops cf. T.
gilli*) off southern California, Baja California, and
Nayarit, Mexico," by Stephen Leatherwood,
9:10
- "Spoilage and shelf-life prediction of refrigerated
fish," by Louis J. Ronsivalli and Stanley E.
Charm, 4:32
- Stagner, John L., and James R. Redmond, "The
immunological mechanisms of the horseshoe
crab, *Limulus polyphemus*," 5-6:11
- "Status of the Gulf and Atlantic menhaden
fisheries and implications for resource manage-
ment," by William E. Schaff, 9:1
- Stauffer, Gary, Alec MacCall, and Bruce
Wahlen, "Fish prices: Historical trends in
southern California commercial fisheries," 11:22
- Stewart, James E., "Gaffkemia, the fatal infection
of lobsters (genus *Homarus*) caused by
Aerococcus viridans (var.) *homari*: A review,"
5-6:20
- Stone, R. B., L. C. Coston, D. E. Hoss, and F. A.
Cross, "Experiments on some possible effects of
tire reefs on pinfish (*Lagodon rhomboides*) and
black sea bass (*Centropristis striata*)," 3:18
- Struhsaker, Paul, and Howard O. Yoshida, "Ex-
ploratory shrimp trawling in the Hawaiian Is-
lands," 12:13
- Surf clam—see Clam, surf
- Sykes, James E.—see Schaaf et al.
- "Synopsis of the northern Gulf of Mexico indus-
trial and foodfish industries," by Elmer J.
Gutherz, Gary M. Russell, Anthony F. Serra,
and Bennie A. Rohr, 7:1
- T
- Tags, electronic
aid in study of migrating salmon and steelhead
trout in Columbia River basin, 2:9
- Temperature
thermal effects on
shrimp processing, 12:25
- Texas
shrimp
economic impact, 7:12
"Thermal and microwave energy for shrimp
processing," by M. R. R. Rao and A. F. Novak,
12:25
- Theroux, Roger B.—see Wigley et al.
- Thunnus alalunga*—see Tuna, albacore
- Thunnus thynnus*—see Tuna, bluefin
- Tillman, Michael F., "Assessment of north Pacific
stocks of whales," 10:1
"Toward a planetary aquaculture—the seas as
range and cropland," by Timothy Joyner, 4:5
- Trawling, shrimp—see Shrimp trawling
- "Trends in catch-effort relationships with
economic implications: Gulf of Mexico shrimp
fishery," by John P. Nichols and Wade L.
Griffin, 2:1
- Trent, Lee—see Lindall and Trent
- Trout
bypass and collection system for protection of
juveniles
fish holding area, 2:35
fish screening facilities, 2:33
gatewell orifices and transportation pipe, 2:32
upwell and fish grader, 2:34
- Trout, steelhead
electronic tags and related tracking techniques
aid in migration study
future, 2:15
sonic tracking, 2:10
- Tubiash, H. S.—see Colwell et al.
- Tuna, albacore
assessment of South Pacific fishery, 1953-72
fishing effort, 3:10
generalized production model, 3:14
index of relative abundance, 3:13
total catch, 3:12
total effective effort, 3:14
uniform U.S. west coast logbook for
coastwide data system, 11:18
design of logbook, 11:14
dissemination of catch-effort information to
cooperating fishermen, 11:18
distribution of logbooks and collection of log-
book records, 11:15
- Tuna, bluefin
possible anomalies
European waters, 12:3
western Atlantic, 12:1
purse-seine fishery in Atlantic Ocean
age composition, 3:6
catch rate, 3:7
fishery, 3:1
fishing effort, 3:5
total catch, 3:2
- Tuna, skipjack
fishing in Papua New Guinea
bait fishery, 2:8
catch, 2:7
companies, 2:5
possible future development, 2:8
vessels, 2:5
- Tursiops truncatus*—see Dolphin, bottle-nosed
- U
- Umphlett, Clyde J., and E. M. McCray, Jr., "A
brief review of the involvements of *Lagenidium*,
an aquatic fungus parasite, with arthropods,"
5-6:61
- "(A) uniform U.S. west coast logbook for albacore
tuna, *Thunnus alalunga* (Bonnaterre), and
coastwide albacore fishery data system," by R.
Michael Laurs, Charles Hooker, Larry Hreha,
and Richard Lincoln, 11:14
- V
- "Vacuum cooling and thawing fishery products,"
by Joseph H. Carver, 7:15
- Vacuum heat thawing
frozen fishery products, 7:18
- Venezuela
culture of mussels and mangrove oysters, 1:15
- Virginia
culture of bay scallop in, 1:19

W

Wahlen, Bruce—see Stauffer et al.
 Ward, George E., Jr.—see Ropes et al.
 Warlen, Stanley M., "Night stalking flounder in the ocean surf," 9:27

Washington
 otter trawl fisheries in northeast Pacific
 energy efficiency comparison with Japan, 4:21
 "Water surface area within statistical subareas used in reporting Gulf Coast Shrimp Data," by Frank Patella, 12:22

Webber, Harold H., "Crustacean aquaculture in Middle America," 1:24

Whales
 assessment of north Pacific stocks
 current status of stocks, 10:2
 future research needs, 10:3
 IWC action on proposed whaling moratorium, 10:3
 modern whaling in north Pacific, 10:1
 recent research on sei whales, 10:3

Wicks, T. C.—see Colwell et al.
 Wigley, Roland L., Roger B. Theroux, and Harriett E. Murray, "Deep-sea red crab, *Geryon quinquedens*, survey off northeastern United States," 8:1

Williams, Simon, "Conflict of interest and its resolution as factors in the commercialization of aquaculture in the Americas," 1:48

Wiviott, Douglas J., and Stephen B. Mathews, "Energy efficiency comparison between the Washington and Japanese otter trawl fisheries of the northeast Pacific," 4:21

Wojnowski, Mikolaj G.—see Noetzel and Wojnowski

X, Y, Z

Yoshida, Howard O.—see Struhsaker and Yoshida

Marine Fisheries Review Papers, Vol. 37, Nos. 1-12, 1975

JANUARY

1111. "Seaweed aquaculture," Arthur C. Mathieson, 1:2-14.
 1112. "The culture of the mussel, *Perna perna*, and the mangrove oyster, *Crassostrea rhizophorae*, in Venezuela," Enrique F. Mandelli and Amado Acuña C., 1:15-18.
 1113. "Culture of the bay scallop, *Argopecten irradians*, in Virginia," Michael Castagna, 1:19-24.
 1114. "Crustacean aquaculture in Middle America," Harold H. Webber, 1:24-30.
 1115. "Institutional constraints to the development of aquaculture," Fernando Fournier, 1:31-32.
 1116. "Constraints on aquaculture projects," Burton A. Landy, 1:33-35.
 1117. "Net-pen culture of Pacific salmon in marine waters," Anthony J. Novotny, 1:36-47.
 1118. "Conflict of interest and its resolution as factors in the commercialization of aquaculture in the Americas," Simon Williams, 1:48-51.

FEBRUARY

1119. "Trends in catch-effort relationships with economic implications: Gulf of Mexico shrimp fishery," John P. Nichols and Wade L. Griffin, 2:1-4.
 1120. "Skipjack tuna fishing in Papua New Guinea, 1970-73," R. E. Kearney, 2:5-8.
 1121. "Electronic tags and related tracking techniques aid in study of migrating salmon and steelhead trout in the Columbia River Basin," Gerald E. Monan, James H. Johnson, and Gordon F. Esterberg, 2:9-15.
 1122. "Selected information on recreational boats in the United States," John Ridgely, 2:16-18.
 1123. "Edible seaweeds—a survey of the industry and prospects for farming the Pacific Northwest," Charles J. Hunter, 2:19-26.
 1124. "Attitudinal and demographic characteris-

tics for regular and irregular users of fresh shellfish," Peter M. Sanchez, 2:27-30.
 1125. "Bypass and collection system for protection of juvenile salmon and trout at Little Goose Dam," Jim Ross Smith and Winston E. Farr, 2:31-35.

MARCH

1126. "The purse-seine fishery for bluefin tuna in the northwestern Atlantic Ocean," Gary T. Sakagawa, 3:1-8.
 1127. "An assessment of the South Pacific albacore, *Thunnus alalunga*, fishery, 1953-72," Robert A. Skillman, 3:9-17.
 1128. "Experiments on some possible effects of tire reefs on pinfish (*Lagodon rhomboides*) and black sea bass (*Centropristis striata*)," R. B. Stone, L. C. Coston, D. E. Hoss, and F. A. Cross, 3:18-20.
 1129. "Development of a program to rehabilitate the oyster industry of Prince Edward Island," Clyde L. MacKenzie, Jr., 3:21-35.
 1130. "An analysis of prices paid to fishermen before and after the establishment of a fishery cooperative," Charles W. Lamb, Jr., 3:36-38.

APRIL

1131. "Fishing fleet activities revealed by nighttime data from the Defense Meteorological Satellite Program (DMSP)," Robert W. Fett, 4:1-4.
 1132. "Toward a planetary aquaculture—the seas as range and cropland," Timothy Joyner, 4:5-10.
 1133. "An economic analysis of Georgia's marine charter boat fishing industry," E. Evan Brown and Fred J. Holemo, 4:11-12.
 1134. "Observed and perceived impacts of distant water fishing: Oregon otter trawl case," Courtland L. Smith, 4:13-15.
 1135. "Low level ionizing radiation and spice treatment of raw, headless, white shrimp," A. N. Roy and J. D. Kaylor, 4:16-20.
 1136. "Energy efficiency comparison between the Washington and Japanese otter trawl fisheries of the northeast Pacific," Douglas J. Wiviott and Stephen B. Mathews, 4:21-24.
 1137. "Costs and earnings in the spiny lobster fishery, Florida Keys," Bruno G. Noetzel and Mikolaj G. Wojnowski, 4:25-31.
 1138. "Spoilage and shelf life prediction of refrigerated fish," Louis J. Ronsivalli and Stanley E. Charm, 4:32-34.

MAY-JUNE

1139. "Introductory remarks on diseases of crustaceans," Gilbert B. Pauley, 5:6:2-3.
 1140. "Cellular response to injury in penaeid shrimp," C. T. Fontaine and D. V. Lightner, 5:6:4-10.
 1141. "The immunological mechanisms of the horseshoe crab, *Limulus polyphemus*," John I. Stagner and James R. Redmond, 5:6:11-19.
 1142. "Gaffkemia, the fatal infection of lobsters (genus *Homarus*) caused by *Aerococcus viridans* (var.) *homari*: A review," James E. Stewart, 5:6:20-24.
 1143. "A septicemic bacterial disease syndrome of penaeid shrimp," Donald V. Lightner and Donald H. Lewis, 5:6:25-28.
 1144. "A comparative study of the bacterial flora of the hemolymph of *Callinectes sapidus*," R. R. Colwell, T. C. Wicks, and H. S. Tubiash, 5:6:29-33.
 1145. "Serum changes in the blue crab, *Callinectes sapidus*, associated with *Paramoeba pernicioso*, the causative agent of gray crab disease," Gilbert B. Pauley, Martin V. Newman, and Edith Gould, 5:6:34-38.
 1146. "Microsporidian infections of amphipods with special reference to host-parasite relationships: A review," H.-P. Bulnheim, 5:6:39-45.
 1147. "Fine structure of *Minchinia* sp. (Haplosporida) sporulation in the mud crab, *Panopeus herbstii*," Frank O. Perkins, 5:6:46-60.
 1148. "A brief review of the involvements of *Lagenidium*, an aquatic fungus parasite, with arthropods," Clyde J. Umphlett and E. M. McCray, Jr., 5:6:61-64.

JULY

1149. "Synopsis of the northern Gulf of Mexico industrial and foodfish industries," Elmer J. Gutherz, Gary M. Russell, Anthony F. Serra, and Bennie A. Rohr, 7:1-11.
 1150. "Economic impact of commercial shrimp landings on the economy of Texas," Wade L. Griffin and Lonnie L. Jones, 7:12-14.
 1151. "Vacuum cooling and thawing fishery products," Joseph H. Carver, 7:15-21.
 1152. "An empirical study of limited entry in Alaska's salmon fisheries," James E. Owers, 7:22-25.
 1153. "A new incubator for salmonids designed by Alaska laboratory," Frederick H. Salter, 7:26-29.

AUGUST

1154. "Deep-sea red crab, *Geryon quinquedens*, survey off northeastern United States," Roland L. Wigley, Roger B. Theroux, and Harriett E. Murray, 8:1-21.
 1155. "The Atlantic coast surf clam fishery—1972," John W. Ropes, Allan M. Barker, and George E. Ward, Jr., 8:22-27.

SEPTEMBER

1156. "Status of the Gulf and Atlantic menhaden fisheries and implications for resource management," William E. Schaaf, 9:1-9.
 1157. "Some observations of feeding behavior of bottle-nosed dolphins (*Tursiops truncatus*) in the northern Gulf of Mexico and (*Tursiops cf. T. gilli*) off southern California, Baja California, and Nayarit, Mexico," Stephen Leatherwood, 9:10-16.
 1158. "Laboratory evaluation of a Denil-type steppass fishway with various entrance and exit conditions for passage of adult salmonids and American shad," Emil Slatick, 9:17-26.
 1159. "Night stalking flounder in the ocean surf," Stanley M. Warlen, 9:27-30.

OCTOBER

1160. "Assessment of north Pacific stocks of whales," Michael F. Tillman, 10:1-4.
 1161. "Forecasts of Atlantic and Gulf menhaden catches based on the historical relation of catch and fishing effort," William E. Schaaf, James E. Sykes, and Robert B. Chapoton, 10:5-9.
 1162. "Blue gold: Mariculture of the edible blue mussel (*Mytilus edulis*)," C. Graham Hurlburt and Sarah W. Hurlburt, 10:10-18.
 1163. "Housing development canals in the coastal zone of the Gulf of Mexico: Ecological consequences, regulations, and recommendations," William N. Lindall, Jr. and Lee Trent, 10:19-24.
 1164. "High school students' perceptions of fish as a menu item," Charles W. Lamb, Jr., 10:25-27.

NOVEMBER

1165. "Japan's fisheries, 1975," Tamio Otsu, 11:1-13.
 1166. "A uniform U.S. west coast logbook for albacore tuna, *Thunnus alalunga* (Bonnaterre), and coastwide albacore fishery data system," R. Michael Laurs, Charles Hooker, Larry Hreha, and Richard Lincoln, 11:14-21.
 1167. "Fish prices: Historical trends in southern California commercial fisheries," Gary Stauffer, Alec MacCall, and Bruce Wahlen, 11:22-30.

DECEMBER

1168. "Possible anomalies of giant bluefin tuna," Howard A. Schuck, 12:1-12.
 1169. "Exploratory shrimp trawling in the Hawaiian Islands," Paul Struhsaker and Howard O. Yoshida, 12:13-21.
 1170. "Water surface area within statistical subareas used in reporting Gulf Coast Shrimp Data," Frank Patella, 12:22-24.
 1171. "Thermal and microwave energy for shrimp processing," M. R. Rao and A. F. Novak, 12:25-30.
 1172. "The Atlantic coast surf clam fishery—1973," John W. Ropes, Arthur S. Merrill, and George E. Ward, 12:31-34.