

National Shellfisheries Association Quarterly Newsletter



President Dr. Robert E. Hillman
President-Elect Dr. Robert E. Malouf
Vice President Dr. John Manzi
Secretary-Treasurer Dr. Scott Siddall

Dr. Susan E. Ford, Newsletter Editor
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MAY 1986

Port Norris, New Jersey

Convention Plans Finalized

The 78th Annual Joint Meeting of the National Shellfisheries Association and the Shellfish Institute of North America will be held at the Crowne Plaza Holiday Inn in Seattle, Washington, from June 22 through June 26, 1986. This year's meeting will be held in conjunction with the Pacific Coast Oyster Grower's Association (PCOGA) and the Pacific Coast Section of NSA. The general and technical sessions will be complemented by a variety of tours so that convention attendees can visit points of interest in and around Seattle (see SOCIAL ACTIVITIES AND TOURS). Note that the schedule of events is somewhat changed from previous years: there are no sessions scheduled for the afternoon of Wednesday, June 25 to allow visits to the Coast Oyster Company hatchery. Also, the NSA membership meeting will be held on Tuesday, June 24 from 10:30 AM to 12 noon.

All members should have received registration and hotel reservations forms from SINA by this time. (Please notify Cindy Vataavuk at 202-296-5170 if you have not.) The deadline for pre-registration is May 25. Basic registration received before this date is \$50 for NSA members, \$60 for non members and \$30 for students. After this date, the costs will be \$60, \$75, and \$35, respectively. These prices cover technical and general sessions, and the President's Reception on Sunday evening, June 22. A special student registration to cover sessions only is available for \$15. The registration desk will open at 11 AM on Sunday and remain open through noon on Wednesday. For further information on convention plans, please contact Site and Registration Chairman

Dr. Ken Chew
School of Fisheries WH-10
University of Washington
Seattle, WA 98195
(206) 543-4290

A PRELIMINARY SCHEDULE OF EVENTS AND A PROGRAM OF TECHNICAL PRESENTATIONS ARE INCLUDED IN THIS NEWSLETTER.

PROGRAM FOR TECHNICAL SESSIONS

Eighty-eight oral and 8 poster presentations are schedule in 9 regular and 2 special sessions, according to Program Chairman John Manzi (South Carolina Marine Resources Research Institute, P.O. Box 12559, Charleston, SC 29412. 803-795-6350). Because of the very large number of papers submitted, John has scheduled concurrent technical sessions for all but the morning of Wednesday, June 25. The special sessions and their organizers are "The Impact of Spatial Variation on Recruitment of Commercially Important Decapods" (David Armstrong, School of Fisheries, Univ. of Washington) and "Depuration: A North American Perspective" (Ray Rhodes, S.C. Marine Resources Research Institute). The program included in this Newsletter is preliminary. A final program with printed abstracts and locations for the various sessions will be available at registration. Please consult the final program to arrange your travels between concurrent sessions.

INSTRUCTIONS TO PRESENTORS

All persons scheduled to give oral presentations in the technical sessions should check the enclosed program and note the time of their talk. Please report to the session chairman at least one-half hour before the start of the session in which you are scheduled. Chairmen also, please take note of this timing. Posters should be set up as early as possible and should remain on display throughout the meeting. Individuals with poster presentations should be stationed by their posters during breaks in the oral presentations.

SOCIAL EVENTS AND TOURS

The calendar of social events for members and spouses includes the President's Reception with seafood hors d'oeuvres and open bar from 6 to 7 pm on Sunday (spouse tickets are \$30, which also includes "Hospitality" during the rest of the meeting). A plenary session is planned for Monday morning and a Keynote and Awards Luncheon, for the noon hour (tickets, \$12). Ken Chew will host a special 9-course Chinese dinner on Tuesday evening (\$13). Also scheduled for Tuesday is a professional grooming presentation for spouses (\$25), a tour of Seattle (\$12), and an all-day trip to Mt. Rainier National Park (\$22). Several combination tours and visits to the Coast Oyster Co. hatchery are scheduled for Wednesday, June 25. Costs range from \$26 to \$59. Costs for other social activities and tours are given on the registration form. Port O' Call Travel is making arrangements for these events as well as for several longer, pre- and post-convention tours to Alaska, Hawaii, and British Columbia (note that the Vancouver Adventure and Expo '86 Triangle trips are closed and the 1-Day Expo Tour is open only for certain days). Members interested in these trips should respond to Port 'O Call soon. Don't leave plans until the last minute! Please direct questions about the tours to Nancy Meyn at Port O' Call (206-641-4979).

EXECUTIVE COMMITTEE (EXCOM) MEETING

NSA President Bob Hillman (Battelle, New England, 617-934-5682) has scheduled an EXCOM meeting for Sunday afternoon, June 22, from 1 to 5 PM. The location for the meeting can be obtained at the registration desk. All current officers and committee chairmen are asked to attend. Please contact Bob if you will not be able to attend. Committee chairmen who will not be there should also submit written reports to Bob no later than June 6. Also, items for the agenda should be sent to Secretary/Treasurer Scott Siddall (Marine Science Research Center, SUNY, Stony Brook, NY 11794, 516-246-8678) no later than June 9. All past presidents of NSA are invited to the meeting.

HOTEL ARRANGEMENTS

A block of rooms has been set aside at the Crowne Plaza for NSA and SINA registrants; however, the rooms will be held only until May 30. Reservations made after that time will be taken on an "as available" basis. Also, the hotel will charge a 30% fee for cancellations made after May 30. Room charges are \$70/single and \$80/double for a standard, and \$90/single and \$100/double for a concierge suite. The latter includes concierge registration and check-out, complimentary continental breakfast, newspapers, fresh fruit, and other amenities.

Special arrangements have been made for students at the Crowne Plaza. Three students will be able to share a room with 3 beds for a total cost of \$80. Members should contact the Crowne Plaza (1-800-858-0511 inside Washington State; 1-800-521-2762 outside Washington State) directly to arrange student housing or for other information.

ALTERNATIVE HOUSING

Several other hotels with lower rates, and the YMCA, are within walking distance or an easy (free) bus ride from the Crowne Plaza:

PACIFIC PLAZA HOTEL, 400 Spring	(206) 623-3900	\$44-62
VANCE HOTEL, 620 Stewart	(206) 441-4200	\$38-63
CAMLIN HOTEL, 1619 9th St.	(206) 682-0100	\$59 and up
YMCA, 90 4th Ave.	(206) 382-5000	\$26-\$32

An airport shuttle serves the downtown area every 30 minutes and the drop-off point is within a block of the above hotels. The cost is \$5 one way. Farwest or Yellow taxicabs have the lowest fares to and from the airport.

RECOMMENDED RESTAURANTS

UNDER \$5

Red Robin Burger and Spirits Emporium, 1100 4th Ave.
Rainier Bank Tower Cafeteria, 5th & University
Cafe Casino, 5th & University
Blochs, 1415 5th Ave.
Wendys, 1406 4th Ave.
El Puerco Liosou, 1501 Western

UNDER \$10

Dukes Downtown, 5th & University
Maxwells Stauffer Madison Hotel, 6th & Madison
Asuka, 6th and Genea
The New Orleans, Yesler & Western
Trattoria Mitchelli, 84 Yesler Way
Umbertos Ristorante Italiano, 1005 King
Red Cabbage Restaurant and Piano Bar, Marian and Western
Elliotts, Pier 56
The Poor Italian, 2000 2nd Ave
Ristorante Pony, 621 1/2 Queen Anne N
Thai, 101 John St.
McCormicks and Schmicks, 1103 First Ave.
The Metropolitan Grill, 818 2nd Ave.

OVER \$10

The Emerald Suite, Space Needle Seattle Center
Le Tastevin, 19 W. Harrison
Rays, 2nd & Marion

In most cases, these categories reflect only the least expensive meals. Patrons will probably have no trouble spending more than the above amounts at any of the designated restaurants. More information on eating establishments will be available at the registration desk.

NMFS PUBLISHES MANUAL ON HISTOLOGICAL TECHNIQUES FOR MOLLUSCS

The National Marine Fisheries Service Laboratory at Oxford, Maryland, announces the publication of a manual of "Histological Techniques for Marine Bivalve Mollusks". This manual describes and illustrates techniques used at the Oxford Laboratory in processing marine bivalves for histopathological examination. Anyone interested in obtaining a free copy can contact the authors, Dorothy Howard and Ceil Smith, at the NMFS Laboratory, Oxford, MD 21654. Since copies of the manual are limited, only those having a sincere need should make a request.

NSA ELECTION REMINDER

Ballots for the election of Association Officers for 1986-87 were sent to members in early March. If you have not already voted, please do so right now by finding and marking the ballot, and sending it to President-Elect, Bob Malouf whose address is on the ballot. Bob will announce election results at the business meeting on June 24.

JOB PLACEMENT SECTION

Graduate Research Assistantships - Mississippi State University

Several assistantships carrying 12-month stipends are available at Mississippi State University (Starkville, MS) for qualified M.S. or Ph.D. candidates to work on aquaculture of freshwater shrimp or channel catfish. Research programs include nutrition; water quality; genetics; and larval, nursery, and pond culture. Research facilities include 44 ponds, a wet-lab fisheries building, 2 greenhouse buildings for larval and nursery culture of shrimp, and several laboratory rooms, with additional facilities to be built in the near future. For further information, contact Dr. Dale H. Arner, Head, Department of Wildlife and Fisheries, Mississippi State University, P.O. Drawer LW, Mississippi State, MS 39762. (601) 325-3830.

Shellfish Aquaculturist - Rutgers University

Position available immediately for a shellfish aquaculturist to be primarily responsible for the production and evaluation of MSX-resistant oysters in Delaware Bay. Duties will include spawning, larval rearing, grow-out of spat, and maintenance of stocks in various environments. Qualifications include a Master's degree in marine science or a related field, experience in shellfish aquaculture/hatchery operations, and an interest in all aspects of shellfish biology. To apply, send a resume and the name, addresses, and telephone numbers of 3 references to Dr. Bruce J. Barber, Rutgers Shellfish Research Laboratory, P.O. Box 687, Port Norris, NJ 08349. (609) 785-0074.

Position Sought

Aquaculturist/shellfish hatchery biologist seeks responsible position in any phase of shellfish mariculture in research or industry anywhere in the U.S. M.Sc. in Marine Biology with 7 years experience in R&D, design, and operations. Specific training in shellfish hatchery design, operation, and management, in axenic algal culture, and in bivalve molluscan mariculture. Good experience in prawn/shrimp hatchery operation. Research experience in induced spawning, larval and post-larval rearing of mussels, oysters, and scallops. Available immediately. Please contact Adam Young, 783 Stern Ave., Palo Alto, CA 94303.

NEWSLETTER MATERIAL

The NSA Newsletter publishes material that will interest and inform the Association's members. Relevant topics include information on other organizations, notice of meetings, job and position-wanted descriptions, recent publications, book reviews, as well as current membership matters. Please send any items of interest to

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EUGENE PETROVITS

Eugene Petrovits died on January 15, 1986. When he died, Gene was General Manager of Aquacultural Research Corporation in Dennis, Massachusetts (ARC). He was educated at the University of Connecticut (B.S., 1941) and received the Legion of Merit and the Bronze Star while serving in the Medical Corps during World War II. Gene came to ARC in 1966 after working for many years in human and veterinary medicine. At ARC, he blossomed into a leader in the newly emerging field of aquaculture. He was innovative in an area that had little existing technology, he knew how to make things work in a hatchery, and he could grow clams. He was a long-standing member of NSA and WMS and a regular at their meetings. He will be remembered by many of us as a big, friendly, bear of a man who knew how to run a hatchery.

JOURNAL OF SHELLFISH RESEARCH

Problems with typesetting have forced another delay in the mailing of volumes 4 (1 and 2) of JSR according to Managing Editor Ed Cake. Ed now hopes to have both issues ready for mailing in June, although the exact date is uncertain. The Publications Committee (Chairman, Rich Lutz; Members, Bob Hillman, Roger Mann, and Ed Cake) is searching for a replacement for Editor-in-Chief, Roger Mann, who is stepping down to devote more of his energies to his new position as Head of the Oyster Biology Section at the Virginia Institute of Marine Science. Until a new full-time Editor can be found, the Publications Committee is exploring the possibility of having former Editor and NSA President Bob Hillman act in an interim capacity. The Publications Committee is also continuing to collect information on the feasibility of using a commercial publisher for JSR. More information will be forthcoming at the NSA Business Meeting (Tuesday June 24, in Seattle) and in the late summer Newsletter.

NSA MEMBERSHIP MATTERS

Secretary-Treasurer Scott Siddall (Marine Sciences Research Center, SUNY, Stony Brook, NY 11794, 516-246-8678) reports that he does not have current addresses for the following NSA members. Please contact Scott if you have up-to-date information on the whereabouts of these people (old addresses given):

Raymond E. Baglin	PO Box 1036, Kodiak, AK 99615
David M. Einolf	1817 W. Call St. Apt. F-8, Tallahassee FL 23204
Richard H. Loring	Aquaculture Res. Corp. Dennis, MA 02638
Gustov A. Rodrigues	PRODEMEX Apartado Postal 1095 Los Mochis, Sinaloa, Mexico
Robert S. Tomlinson	4101 Five Oaks Dr., Durham, NC 27707

CONSTITUTIONAL REVISION

According to NSA President Bob Hillman, the ad hoc Constitutional Revision Committee, established at last year's meeting to review the existing Constitution, has recommended a number of changes. The revised Constitution is now being considered by the Executive Committee and will shortly be mailed (along with the old Constitution for comparison) to all members. Members will be asked to vote, by mail, on whether they wish to accept the revision. Results will be published in the next Newsletter (late summer).

78TH ANNUAL MEETING OF THE NATIONAL SHELLFISHERIES ASSOCIATION

Monday 23 June 1986

10:20 - 12:00 A.M.

TECHNICAL SESSION: COMMERCIAL FISHERIES

RESIDING: John H. SMART, College of Marine Studies, University of Delaware, Lewes, Delaware

10:20-10:40 Public fishery and private mariculture conflict in Long Island, NY's shellfish industry. Jeffrey KASSNER, Environmental Protection, Town of Brookhaven, Patchogue, NY.

10:40-11:00 Age and meat yield of Stimpson's surf clam *Spisula polydora*, a recently found commercial bivalve resource in Eastern Canada. Tiaan AVALATUNGA and Terence H. ROYEL, Fisheries Research Branch, Department of Fisheries and Oceans, Halifax, Nova Scotia, Canada.

11:00-11:20 The potential for direct application of University developed research findings to the commercial oyster industry. Ken COOPER, Coast Oyster Company, Quilicene, Washington.

11:20-11:40 The Tasmanian shellfish control program - A growers perspective. G. SUMNER, Coal River Oysters, Claremont, Tasmania, Australia and C. SUMNER, Department of Sea Fisheries, Hobart, Tasmania, Australia.

11:40-12:00 Assessment of mortalities in surf clams (*Spisula solidissima*) due to dredging, sorting, and discard. Harold R. HASKIN and Eric VACHNER, Rutgers Shellfish Research Laboratory, NJAES, Rutgers University, Fort Morris, New Jersey.

Monday 23 June 1986

10:20 - 12:00 A.M.

TECHNICAL SESSION: MARINE SCIENCE

RESIDING: Joy GOODSILL, Department of Aquaculture, Fisheries and Wildlife, Clemson, University, Clemson, South Carolina

10:20-10:40 Optimal induction of triploidy in *Crassostrea gigas* depends on temperature. Sandra DOMING, School of Fisheries, University of Washington, Seattle, Washington.

10:40-11:00 Energetics of sterile triploid oysters uncouple the reproductive and somatic effort of diploids. Jonathan P. DAVIS, School of Fisheries, University of Washington, Seattle, Washington.

11:00-11:20 Cytology of gametogenesis in triploid Pacific oyster, *Crassostrea gigas*. Stan ALLEN, School of Fisheries, University of Washington, Seattle, Washington.

11:20-11:40 Experimental production of gynogenetic and parthenogenetic Mullina lateralis (Bay). John SCARPA and E.T. BOLTON, College of Marine Studies, University of Delaware, Lewes, Delaware.

11:40-12:00 Results of a breeding program to improve growth of *Mercuria* spp. for commercial mariculture. John J. HANZI and Nancy H. HANZKY, Marine Resources Research Institute, Charleston, South Carolina.

Monday 23 June 1986

2:00 - 5:00 P.M.

TECHNICAL SESSION: REPRODUCTIVE BIOLOGY AND LIFE HISTORY OF MOLLUSCS

RESIDING: Jeffrey KASSNER, Environmental Protection, Town of Brookhaven, Patchogue, NY.

2:00-2:20 Energy partitioning patterns in cultured and wild populations of the giant scallop *Placopecten magellanicus*. Bruce A. MAC DONALD, Department of Fisheries and Oceans, Pacific Biological Station, Nanaimo, British Columbia, Canada.

2:20-2:40 A proposed standardization of the stages in the gametogenesis cycles of bivalves. William N. SHAW, Department of Fisheries, Humboldt State University, Fred Telsonicher Marine Laboratory, Trinidad, California.

2:40-3:00 Reproductive biology of clam populations in North America: A review. Arnold G. EVERSOLK, Department of Aquaculture, Fisheries and Wildlife, Clemson University, Clemson, South Carolina.

3:00-3:20 Growth rate and age structure comparisons of geographically isolated hard clam, *Mercuria mercenaria*, populations. Lee R. CROCKETT and R.W. WHITMACH, Marine Sciences Institute, The University of Connecticut, Avery Point, Groton, Connecticut.

3:20-3:40 Reproductive development in three *Mercuria mercenaria* stocks grown in South Carolina waters. Richard S. KNAB, and Arnold G. EVERSOLK, Department of Aquaculture, Fisheries and Wildlife, Clemson University, Clemson, South Carolina, and John J. Hanzi, Marine Resources Research Institute, Charleston, South Carolina.

3:40-4:00 Comparative physiology of two cohorts of the Northern Bay Scallop, *Argopecten irradians*. V. Monica BRICE, J. J. EPP and R.F. MALDUFF, Marine Sciences Research Center, State University of New York at Stony Brook.

4:00-4:20 Energy storage and utilization in the Bay Scallop, *Argopecten irradians*. Jennifer A. EPP, Marine Sciences Research Center, State University of New York at Stony Brook.

4:20-4:40 Gametogenic development of the venerid clam *Protothaca sperrina* in the Bay of Panama. John W. SMART, M.R. CARRIKER, College of Marine Studies, University of Delaware, Lewes, Delaware, and J.R. VILLALAZ, J.A. GOMEZ and L. D'ARCO, Centro de Ciencias del Mar y Limnología, Universidad de Panama, Republica de Panama.

4:40-5:00 Transplant of abalone in Barkley Sound, British Columbia. B. EMMETT and G.S. JAMESON, Archipelago Marine Research, Victoria, British Columbia, Canada.

NATIONAL SHELLFISHERIES ASSOCIATION
78TH ANNUAL MEETING
SEATTLE, WASHINGTON
JUNE 22 - 26, 1986

TENTATIVE SCHEDULE OF EVENTS

DATE	TIME	ACTIVITY	LOCATION
Sunday 22 June	11:00A- 6:30P	REGISTRATION	
	1:00 - 5:00P	NSA Board Meeting	
	3:00 - 5:00P	SINA Board	
	6:00 - 7:00P	Presidents Reception	
Monday 23 June	8:00A- 4:00P	Registration	
	8:30 - 10:00	PLENARY SESSION	
	10:20 - 12:00	TECHNICAL SESSION: Commercial Fisheries	
		TECHNICAL SESSION: Molluscan Genetics	
	12:15 - 1:45P	KEYNOTE AND AWARDS LUNCHEON	
	2:00 - 5:00	TECHNICAL SESSION: Reproductive Biology and Life History of Mollusks	
	2:00 - 4:40	TECHNICAL SESSION: Ecology	
	2:00 - 5:30	POSTER SESSION	
	3:15 - 5:00	POGGA Board Meeting	
	Tuesday 24 June	8:00 - 2:00	REGISTRATION
8:00 - 10:00		TECHNICAL SESSION: Molluscan Aquaculture	
		TECHNICAL SESSION: Molluscan Nutrition	
8:00 - 10:30		POSTER SESSION	
10:30 - 12:00		NSA Business Meeting	
1:30 - 5:05		SPECIAL SYMPOSIUM: Crab Recruitment	
1:30 - 4:30		SPECIAL SYMPOSIUM: Commercial Shoreside Depuration in the U.S.A. : Is the Future Now?	
1:30 - 5:30		POSTER SESSION (Presenters available during breaks and from 5:00-5:30)	
5:15 - 5:45		Pacific Coast Section NSA Business Meeting	
6:30		Chinese Banquet	
Wednesday 25 June	8:00 - 12:00	Registration	
	8:00	Departure for Tour #1	
	8:00 - 11:00	TECHNICAL SESSION: Crustacea	
	11:30	Departure for Tour #2	
	4:15	Final Party Boat Departure for clam and salmon bake	
Thursday 26 June	8:20 - 12:00	TECHNICAL SESSION: Larval distribution and settlement	
		TECHNICAL SESSION: Parasites and disease	

Thursday 24 June 1986

1:30 - 5:05 P.M.

SPECIAL SYMPOSIUM: CAB RECRUITMENT

PRESIDING: David Armstrong, School of Fisheries, WH-10, University of Washington, Seattle, Washington

1:30-1:50 Recruitment of blue crab, *Callinectes sapidus*, in open and impounded marsh systems in South Carolina. Eugene OLMIE and Paul SANDIFER, South Carolina Marine Resources Division, Charleston, South Carolina.

1:50-2:10 Diurnal vertical distribution and dispersal-recruitment mechanisms of decapod crustacean larvae and postlarvae in the Chesapeake Bay, Virginia and adjacent offshore waters. Robert C. MARIS and John R. MCCOMBS, Department of Oceanography, Old Dominion University, Norfolk, Virginia.

2:10-2:30 Biology and commercial potential of Galatheid crabs in British Columbia. Brenda BUDGE, Galathea Research, Brentwood Bay, British Columbia and G. JAMIESON, Shellfish Division, Pacific Biological Station, Nanaimo, British Columbia.

2:30-2:50 Possible influence of wind on Cancer magister settlement. Louis W. BOTSFORD, Department of Wildlife and Fisheries Biology, University of California, Davis, California, and Jonathan M. SHENKER, Bodega Marine Laboratory, Bodega Bay, California.

2:50-3:05

BREAK

3:05-3:25 The spatial distribution of dungeness crab (*Cancer magister*) megalopae off the west coast of Vancouver Island. Glen S. JAMIESON and A.C. PHILLIPS, Department of Fisheries and Oceans, Pacific Biological Station, Nanaimo, British Columbia, Canada.

3:25-3:45 Spatial and temporal variation in the abundance and female dungeness crabs (*Cancer magister*) near Tofino, British Columbia, with implications for the commercial fishery. Barry D. SMITH, Institute of Animal Resource Ecology, University of British Columbia, Vancouver, and Glen S. JAMIESON, Department of Fisheries and Oceans, Pacific Biological Station, Nanaimo, British Columbia, Canada.

3:45-4:05 A bioenergetic model of juvenile dungeness crab (*Cancer magister*) population dynamics in Grays Harbor, Washington. Brandt GUTERBUTH and David ARMSTRONG, School of Fisheries, University of Washington, Seattle, Washington.

4:05-4:25 Spatial and temporal variability of decapod larval distributions as regulating factors in estuarine decapod populations dynamics. John R. MCCOMBS and Robert C. MARIS, Department of Oceanography, Old Dominion University, Norfolk, Virginia.

4:25-4:45 Interaction between dungeness crab abundance and infestation intensity with nearshore crab-egg predators. Daniel R. WICKHAM, University of California, Bodega Marine Laboratory, Bodega Bay, California.

4:45-5:05 The importance of intertidal shell as nursery habitat for young-of-the-year dungeness crab in Grays Harbor, Washington. Brett R. DIMSMAILDS, David A. ARMSTRONG, Donald R. GUNDERSON and A. Ross BLACK, School of Fisheries, University of Washington, Seattle, Washington.

ALTERNATE

Interannual variability in recruitment of juvenile dungeness crab: Is an estuary important after all? David ARMSTRONG and Donald GUNDERSON, School of Fisheries, University of Washington, Seattle, Washington.

Thursday 24 June 1986

1:30 - 4:30 P.M.

SPECIAL SYMPOSIUM: COMMERCIAL SHORESIDE DEPURATION IN THE U.S.A.: IS THE FUTURE NOW?

PRESIDING: Raymond RHODES, Division of Marine Resources, South Carolina Wildlife and Marine Resources Department, Charleston, SC.

1:30-1:35 Introductory remarks. Robert STOTT, Regional Office for Shellfish Sanitation Programs, U.S. Food and Drug Administration, Region X, Seattle, Washington.

1:35-1:50 Status of commercial shellfish depuration in the Northeast-1986. Santo A. PURFARI, NE Technical Services Unit, U.S. Food & Drug Administration, North Kingstown, Rhode Island.

1:50-2:05 Status of controlled purification of shellfish in the southeastern United States. Mark E. BERRIGAN and John W. SCHNEIDER, Bureau of Marine Resources Regulation and Development, Department of Natural Resources, Tallahassee, Florida.

2:05-2:20 Depuration: Policy and practice on the west coast. J. LITUA, Technical Coordinator, Shellfish Program, Department of Social and Health Services, Olympia, Washington.

2:20-2:35 Summary of the Louisiana oyster industry depuration conference. Ron BECKER, Associate Director, Louisiana Sea Grant College Program, Louisiana State University, Baton Rouge, Louisiana.

2:35-2:50

BREAK

2:50-3:05 Economics of shoreside depuration. Raymond RHODES, Division of Marine Resources, S.C. Wildlife and Marine Resources Department, Charleston, SC.

3:05-3:25 Depuration of heavy metals by hard clams, *Mercenaria mercenaria*. Albert F. ZBLK, Department of Biology, Trenton State College, Trenton, New Jersey.

3:25-3:45 Bacterial and viral elimination in commercial plants. Gary RODRICK, College of Public Health, University of South Florida, Tampa, Florida.

3:45-4:15 Status and future depuration technology and regulations. Santo A. PURFARI, U.S. Food and Drug Administration, Kingstown, Rhode Island.

4:15-4:30 Overview of NMFS Shellfish Depuration Research. Tom SIMICKI, Shellfish Research Coordinator, Southeast Fisheries Center, National Marine Fisheries Service, Charleston, SC.

Monday 23 June 1986

2:00 - 4:40 P.M.

Tuesday 24 June 1986

8:00 - 10:00 A.M.

TECHNICAL SESSION: ECOLOGY

- PRESIDING:** Bill ANDERSON, Division of Marine Resources, South Carolina Wildlife and Marine Resources Department, Charleston, SC.
- 2:00-2:20 A habitat suitability index model for the aquaculture of the Pacific oyster, *Crassostrea gigas*. James R. BROWN, Dept of Biological Sciences, Simon Fraser University, Burnaby, British Columbia, Canada.
- 2:20-2:40 Comparative coastal ecology of the tropical rocky intertidal snail *Cittarium pica* in the Exuma Islands, Bahamas. Adolphe O. DEBROT, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, Florida.
- 2:40-3:00 Responses of *Geukensia demissa* to dissolved copper at various salinities. Edgar MILLER, Marine Sciences Institute, University of Connecticut, Groton, Connecticut.
- 3:00-3:20 Pathways of silver accumulation by the american oyster (*Crassostrea virginica* Gmelin) in Chesapeake Bay. George R. ABBE*, James G. SANDERS and JoAnn M. BIANCHI, Academy of Natural Sciences, Benedict Estuarine Research Laboratory, Benedict, Maryland.
- 3:20-3:40 Development of epibenthic fouling communities on shells deposited on a natural oyster bed in the James River of Virginia. R.D. RHEINHARDT* and R. MANN, Virginia Institute of Marine Science, College of William and Mary, Gloucester Point, Virginia.
- 3:40-4:00 Small-scale spatial distribution of oysters (*Crassostrea virginica*) on oyster reefs. E.M. POWELL*, M.E. WHITE and E.A. WILSON, Department of Oceanography, Texas A&M University, College Station, Texas, and S.M. RAY, Department of Marine Biology, Texas A&M University at Galveston, Galveston, Texas.
- 4:00-4:20 Assessment of mortality in an offshore population of queen conch, and comparative natural mortality estimation in mollusks. Richard S. APPELDOORN, Department of Marine Sciences, University of Puerto Rico, Mayaguez, Puerto Rico.
- 4:20-4:40 The effects of the toxic dinoflagellate, *Protoperidinium tamaris*, on the physiology and behavior of marine molluscs. Sandra E. SHUMWAY, Department of Marine Resources, West Boothbay Harbor, Maine; Terry L. GUCCI, Clarice M. YENTSCH, Bigelow Laboratory for Ocean Sciences, West Boothbay Harbor, Maine; Richard C. NEWELL, Institute for Marine Environmental Research, Plymouth, England; and Louis GAINY, Department of Biology, University of Southern Maine, Portland, Maine.

TECHNICAL SESSION: MOLLUSCAN AQUACULTURE

- PRESIDING:** Nancy R. HADLEY, Marine Resources Research Institute, Charleston, South Carolina
- 8:00-8:20 Scallop breeding studies. Neil BOURNE, Fisheries and Oceans Canada, Pacific Biological Station, Nanaimo, British Columbia, Canada.
- 8:20-8:40 On the use of hatchery produced mussel (*Mytilus edulis* L.) spat in mussel aquaculture. George A. TREVELYAN, University of California, Bodega Marine Laboratory, Bodega Bay, California.
- 8:40-9:00 Oyster breeding [OBC] - The "Above Ground" Growing System. Pierre BOQUILLON*, Nortene, Inc., Norcross, Georgia and Steven TALIS, ADPI Enterprises, Inc., Philadelphia, Pennsylvania.
- 9:00-9:20 Recirculation of seawater through upwelling silos in a hard clam nursery system. Steve MALINOWSKI*, The Clam Farm, Fisher's Island, New York and Scott E. SIDDALL, Marine Sciences Research Center, State SUNY, Stony Brook, New York.
- 9:20-9:40 Use of downwelling chambers in studies with bivalve molluscs. Chris J. LANGDON, Department of Fisheries and Wildlife, Oregon State University, Corvallis, Oregon and J. Evan WARD*, College of Marine Studies, University of Delaware, Lewes, Delaware.
- 9:40-10:00 Interstate shipment of larval and juvenile bivalves: Effects of shipping duration and method on survival. Edwin W. RHODES*, NMFS, Biological Laboratory, Milford, Connecticut and John J. MANZI, Marine Resources Research Institute, Charleston, South Carolina.

Tuesday 24 June 1986

8:20 - 10:00 A.M.

TECHNICAL SESSION: MOLLUSCAN NUTRITION

- PRESIDING:** Bruce J. BARBER, Rutgers Shellfish Research Laboratory, NJAES, Rutgers University, Port Norris, New Jersey.
- 8:20-8:40 Using centrifuged algae for feeding oyster larvae. R.H. WATSON*, Lasqueti Island, British Columbia, Canada, G.G. JONES and B.L. JONES, Innovative Aquaculture Products Ltd., Lasqueti Island, British Columbia, Canada.
- 8:40-9:00 Metabolic reserves and caloric content of six species of phytoplankton cultured as food for bivalve larvae. John N.C. WHITE, Fisheries and Oceans Canada, Pacific Biological Station, Nanaimo, British Columbia, Canada.
- 9:00-9:20 Digestion and absorption of refractory carbon by the oyster, *Crassostrea virginica* (Gmelin). Roger I.E. NEWELL*, Horn Point Environmental Laboratories, University of Maryland, Cambridge, Maryland, and Christopher J. LANGDON, Marine Science Center, Oregon State University, Newport, Oregon and Roger I.E. NEWELL, Horn Point Environmental Laboratories, University of Maryland, Cambridge, Maryland
- 9:20-9:40 Utilization of refractory carbon by the ribbed mussel, *Geukensia demissa* (Hillvyn). Daniel A. KREBER*, College of Marine Studies, University of Delaware, Lewes, Delaware, and Christopher J. LANGDON, Hatfield Marine Science Center, Oregon State University, Newport, Oregon and Roger I.E. NEWELL, Horn Point Environmental Laboratories, University of Maryland, Cambridge, Maryland
- 9:40-10:00 Preliminary results on the effects of tidal currents, food concentration, and sediment characteristics on ontogenetic growth of *Mercuraria mercenaria*. R.E. GRIZZLE, Center for Coastal and Environmental Studies, Rutgers University, New Brunswick, New Jersey.

TECHNICAL SESSION: PARASITES AND DISEASE

PRELIMINARY: Stephen T. TITELBACH, University of Connecticut Marine Research Laboratory, Moosik, Connecticut.

8:20-8:40

Development of enzyme-linked immunosorbent assays for detection of molluscan parasites. Antonio J. FIGUEROA, Sheila A. KANEHTY, and Susan B. POND, Rutgers Shellfish Laboratory, NJAES, Rutgers University, Port Norris, New Jersey, and Eugene H. BURESSON, Virginia Institute of Marine Science, Gloucester Point, Virginia.

8:40-9:00

Preliminary results from the study of acquired immunity in the oyster, *Crassostrea virginica*. Fu-Lin CHU, Department of Estuarine and Coastal Ecology, Virginia Institute of Marine Science, School of Marine Science, The College of William and Mary, Virginia.

9:00-9:20

A model of the energy budget of healthy and parasitized oysters, with validation by growth experiments. Marie E. WHITE, Eric M. POWELL, Elizabeth A. WILSON, Department of Oceanography, Texas A&M University, College Station, Texas, and Sammy M. RAY, Department of Marine Biology, Texas A&M University at Galveston, Texas.

9:20-9:40

Effects of MSX (*Haplosporidium nelsoni*) parasitism on reproduction of the oyster, *Crassostrea virginica*. Susan B. POND and Antonio J. FIGUEROA, Rutgers Shellfish Research Laboratory, NJAES, Rutgers University, Port Norris, New Jersey.

9:40-10:00

Relationships among condition index, glycogen level, reproductive effort, and intensity of MSX (*Haplosporidium nelsoni*) infection in oysters, *Crassostrea virginica*. Bruce J. BALBERT, Susan B. POND, and Harold H. HARKIN, Rutgers Shellfish Research Laboratory, NJAES, Rutgers University, Port Norris, New Jersey.

10:00-10:20

BREAK

10:20-10:40

Domania ostrea disease of the European flat oyster (*Ostrea edulis*) in North America: Occurrence, environmental effects and host range. Ralph A. ELSTON, Center for Marine Disease Control, Marine Research Laboratory, Sequim, Washington.

10:40-11:00

The effect of the ectoparasitic snail, *Spogon impressa*, on oyster growth and health in the field with comments on patch formation in small populations. Elizabeth A. WILSON, Eric M. POWELL, Marie E. WHITE, Department of Oceanography, Texas A&M University, College Station, Texas, and Sammy M. RAY, Department of Marine Biology, Texas A&M University at Galveston, Texas.

11:00-11:20

Geographically widespread bacterial infection and mortality in Pacific oysters, *Crassostrea gigas*. Hal SWARTZ, University of Washington, Seattle, Washington. R. ELSTON, Bacterial Marine Research Laboratory, Sequim, Washington. C. RICHMOND and R. HEDRICK, University of California, Davis, California.

11:20-11:40

Destruction of bivalve mollusc hinge ligament by Cytocapsa-like bacteria: Association with mortality in hatchery-reared juvenile Pacific oysters, *Crassostrea gigas*. Christopher F. DUNNABE, and Ralph A. ELSTON, Center for Marine Disease Control, Marine Research Laboratory, Marine Research Laboratory, Sequim, Washington.

11:40-12:00

Host response to *Proctocaea maculatus* infection in the blue mussel, *Mytilus edulis* L. Sung Y. FENG, Marine Sciences Institute, University of Connecticut, Groton, Connecticut.

Monday 23 June 1986 14:00-17:30
Tuesday 24 June 1986 8:00-10:30; 1:30-5:30

POSTER SESSION

Authors are requested to stand with their posters during coffee breaks and from 4:40-5:30 on Monday and from 5:00-5:30 on Tuesday.

A survey of Perkinsus marinus in the Gulf of Mexico. M. Alison CRAIG and E.N. POWELL, Dept of Oceanography, Texas A&M University, College Station, Texas.

Egg yolk vesicles as a potential food system for juvenile Pacific oysters. Marilyn C. RICKSON and D.P. SELIVONCHIK, Oregon State University, Department of Food Science and Technology, Corvallis, Oregon.

Aspects of the life history of the Pea Crab, *Planothores maculatus*, Shannon KELLY, The University of Connecticut, Marine Sciences Institute, Groton, Connecticut.

Genetic improvement of hard clam, *Mercenaria* spp., for commercial mariculture stock development. John J. HANZI, Nancy H. HADLEY, Marine Resources Research Institute, Charleston, SC; A.G. KERSOLE, Department of Aquaculture Fisheries and Wildlife, Clemson University, Clemson, SC; R.T. DILLON, College of Charleston, Charleston, SC; and J. HILBISH, Department of Biology, University of South Carolina.

Temporal variation in growth rate, body and gonad weight in a population of *Mytilus edulis* in the Santa Barbara Channel. Mark PACE, Marine Science Institute, University of California, Santa Barbara, California.

Development of technology for harvesting and transplanting subtidal juvenile Pacific razor clams, *Siliqua patula* Dixon, along the coast of Washington State. Neil A. RICKARD and Robert A. MATHAN, Washington Department of Fisheries, 331 State Highway 12, Montesano, Washington.

A field test of the American oyster habitat suitability (HSI) model. T.M. SOWHAT and M.S. BRODY, Department of Biological Sciences, University of New Orleans, Lakefront, New Orleans, Louisiana.

Extensive culture of penaeid shrimp in coastal impoundments in South Carolina. J. M. BERTSONG, R.J. OLMI, III, and P.A. SANDIFER, Clemson University and South Carolina Sea Grant, Georgetown, South Carolina.

Wednesday 25 June 1986

8:00 - 11:00 A.M.

Thursday 26 June 1986

8:20 - 12:00

TECHNICAL SESSION: **CRUSTACEA**

TECHNICAL SESSION: **LARVAL DISTRIBUTION AND SETTLEMENT**

PRESIDING: Eugene P. OLMI, Marine Resources Research Institute, Charleston, SC.

PRESIDING: V. Monica BRICELJ, Marine Sciences Research Center, State University of New York at Stony Brook.

8:00-8:20 Recovery period of newly-molted snow crab, *Chionoecetes opilio*, to a hard-shelled condition. David M. TAYLOR* and Paul G. O'PFERF, Fisheries Research Branch, Department of Fisheries and Oceans, St. John's, Newfoundland, Canada.

8:20-8:40 Larval Development of the Spiny Scallop, *Chlamys hastata* (Sowerby) Christine A. COOKE, Department of Biology, University of Victoria, Victoria, British Columbia, Canada

8:20-8:40 Threshold levels of crab chemoreception for amino acids and results of field tests using these amino acids as attractants in artificial bait. R.E. MILLER* and W.F. VAN HEUKELEM, Horn Point Laboratories, University of Maryland, Center for Environmental Studies, Cambridge, Maryland.

8:40-9:00 Comparative analyses of larval and early post-larval shell morphology in seven Mytilid species. S. Cynthia FULLER, Department of Zoology, Rutgers University, Piscataway, New Jersey

8:40-9:00 Crabs vs. Bay Scallops: Effects of predator and prey size on feeding rates and predatory behavior. Stephen T. TETTELBACH, University of Connecticut, Marine Research Laboratory, Noank, Connecticut.

9:00-9:20 Predation on single spat oysters *Crassostrea virginica* (Gmelin) by blue crabs *Callinectes sapidus* and mud crabs *Panopeus herbstii* Milne-Edwards, Robert BISKER and Michael CASTAGNA*, Virginia Institute Marine Science, School of Marine Science, College of William and Mary, Wachapreague, Virginia.

9:20-9:40 Short-term and long-term settlement of larval and juvenile (*Mytilus edulis* L.). Greg PODNIESINSKI, Department of Zoology, Ira Darling Center, University of Maine, Walpole, Maine.

9:20-9:40 A review of infectious diseases of the dungeness crab, *Cancer magister*. J. Frank MORADO* and Albert K. SPARKS, National Marine Fisheries Service, Resources Assessment & Conservation Engineering Division, Seattle, Washington.

9:40-10:00 Diseases of Alaskan King Crabs. Albert K. SPARKS* and J. Frank MORADO, National Marine Fisheries Service, Resource Assessment & Conservation Engineering Division, Seattle, Washington.

10:00-10:20 The foraging behaviour of *Cancer magister* feeding on *Prototheca staminea*: Size selection and risk. Francis JUANES, Department of Biological Sciences, Simon Fraser University, Burnaby, British Columbia, Canada V5A 1S6.

10:00-10:20 BREAK

10:20-10:40 Response of mesogastral predators to synchronous settlement of sessile prey. Peter J. AJSTER, NOAA National Undersea Research Program, University of Connecticut at Avery Point, Groton, Connecticut.

10:40-11:00 The distribution of blue mussel *Mytilus edulis* L. larvae in three Maine estuaries. Herbert HIRD*, and Greg PODNIESINSKI, Department of Animal and Veterinary Science, Ira Darling Center, University of Maine, Walpole, Maine.

11:00-11:20 Dispersal of bivalve larvae at a front in the James River estuary, Virginia. Roger MANN*, Robert J. BYRNE, and Bernardita M. CAMPOS, Virginia Institute of Marine Science, College of William and Mary, Gloucester Point, Virginia.

10:20-10:40 Intertidal distribution and abundance of young-of-the-year dungeness crab *Cancer magister* in northern inland waters of Washington. R.O. MCHILLAN*, D.A. ARMSTRONG and P.A. DINNELL, School of Fisheries, University of Washington, Seattle, Washington.

11:20-11:40 The settling patterns of the purple-hinge rock scallop, *Hinnites multirugosus* in Humboldt County, California. William P. OSBORNE*, William N. SHAW, Department of Fisheries, Humboldt State University, Fred Telonicher Marine Laboratory, Trinidad, California.

10:40-11:00 Reproductive success in Tanner (*Chionoecetes bairdi*) and Dungeness (*Cancer magister*) crabs held on oiled sediments. Malin H. BARCOCK* and John F. KARINEN, Northwest and Alaska Fisheries Center, Auke Bay Laboratory, National Marine Fisheries Service, NOAA, Auke Bay, Alaska.

11:40-12:00 A relationship between selective larval settlement and adult distribution patterns of Geoduck clams, and the presence of Chaetopterid polychaete tube mats in Puget Sound, Washington. Bruce PEASE* and Ken COOPER, Point Whitney Shellfish Lab, Washington Department of Fisheries, Brinnon, Washington.

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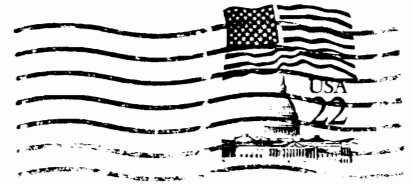
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