

National Shellfisheries Association

QUARTERLY NEWSLETTER

FEBRUARY 2005



WALDOBORO, MAINE

President's Message

A HAPPY NEW YEAR to all!

This will be my last President's Message and I want to start by thanking all the hard-working folks who have made the task easy and enjoyable. Sadly, we lost several of those members this year - Mike Castagna, Jay Andrews, John Glude – all Past Presidents who gave generously of their time and expertise for decades. They are examples worth emulating.

First and foremost I would like to thank our Treasurer, Dave Bushek. Most (except for the past Treasurers!!) probably don't know how much the NSA depends upon the Treasurer for day-to-day activities as well as long-range planning (George Abbe is our corporate memory with almost 20 years on the ABF committee) or how much time and effort that takes. Dave will continue through the end of the fiscal year and shepherd the new Treasurer into the fold. We all owe Dave a great debt of gratitude for his efforts and I want to offer my personal thanks for his unwavering attention to detail, dedication to NSA, and keeping us solvent.

It's been a busy two years, but the greatest accomplishment has to be the realization of our new WEB-based portal. This project was begun several administrations ago with a committee chaired by Roger Newell to decide if we even needed a new system. Given the magnitude of the task and the price tag, that was not an easy assessment to make and justify and the decision was not made lightly. Everyone has worked diligently for almost a decade to make this a reality. At the risk of overlooking some, no names -- everyone's efforts are greatly appreciated. We've been most fortunate to have Past-President Scott Siddall at the helm of the Longsight Group. His long-term dedication and insight with regard to the needs of NSA and his willingness to go the extra distance to make this transition as smooth as possible have been key to the entire process. Scott will be in Philly to present the system and discuss it with the membership. Watch for new services, availability of JSR on the WEB (we're working on back-issue availability) and, hopefully, easier on-line registration, abstract submission and dues payment in the future. We've seen the publication of the NSA History (thanks Mel) and JSR has



Thinking of sailing into Philly for NSA 2005? You bet you can. Sunday afternoon, the traditional oyster schooner, A.J. Meerwald, will be taking NSA meeting-goers on a 2 hour cruise along the Philadelphia waterfront. See the meeting information starting on page 3 for more information on the cruise.

increased publication to three regular issues per year. There is still a special issue on abalone to come from 2004 (Thanks to Peter Cook) and a special issue on lobster disease in 2005, thanks to Tony Calabrese. Both of these issues have been paid for entirely by outside funding. The *Newsletter* is a joy to read (nice job, Chris), The Recruits appear sustainable, our ties with industry have strengthened, and the WEB site looks better than ever (thanks LaDon). Membership has not grown to the extent I had hoped – a challenge for the next administration.

Continued on page 2.

In this issue:

- ***Philly 2005 Program***
- ***Registration information***
- ***Quayle/Bourne Dedication***
- ***Book Reviews***

Recruits Corner

Join your fellow Recruits in Philadelphia this April! Hopefully many of you submitted abstracts and applied for Student Endowment funds, but even if you do not plan to present you should consider attending the annual meeting. Just to keep up with the yearly tradition of saying this in the meeting newsletter Recruits article: there are lots of benefits of attending the meeting other than just presenting your research. Students at the meeting have many opportunities to network, search for jobs, expand their shellfish horizons, and, of course, socialize with your shellfish peers. Ask anyone who has been to an NSA meeting – we have a good time and we will again in Philly. If you would like to attend and need to save a little money, why not consider a roommate to share your hotel room? I will gladly try to match up folks looking for ROOMMATES for the meeting. Just e-mail me at namcginn@ucdavis.edu.

There are more reasons to attend this year's meeting in Philadelphia – **SPECIAL STUDENT EVENTS**. First, on Monday morning, we have a breakfast orientation meeting (read: free food). In addition to giving details about the week's events, this meeting will give us the opportunity to talk about what NSA can do for you and what you can do for NSA as well as share our comments, compliments, and concerns about NSA student membership. I know it will be early, but come by and we'll wake up and chat a bit. Second, a new student event, a special session designed by students for students. The session is called "**Making the Journal: an Interactive Publishing Workshop**" and will convene on Wednesday afternoon at the conference. The session will give us an inside look at the scientific publication process from manuscript submission to printing. Sandy Shumway, editor of three journals including JSR, will talk to us all about submitting papers and the review process. We will have representatives from The Sheridan Press tell us about what happens to your paper from when it arrives at the printer to when it is published in the journal. We will have plenty of opportunities to find out everything we have wanted to know about the publication process, but were afraid to ask – until now. Finally, we are planning a great **interactive review exercise**. We will make a submitted manuscript available to the student members to review on their own before the meeting. During the workshop, you will receive the actual reviews submitted to the editor to compare with your own. This should be a great learning process for all of us future reviewers. Look for an e-mail from me soon! With the many opportunities to learn about (or brush-up on) science publishing, everyone at the meeting is encouraged to attend! Many thanks from me to Dane Frank and Steve Allen for the great ideas and help with planning this session.

Have you enjoyed reading about famous shellfish pioneers in the past few newsletters? Would you like to learn more about our shellfish forebears by writing a bio yourself? If so, please contact Sandy Shumway. As always, we are looking for great auction items (send to Sandy or bring to meeting) and help with the sales booth at the meeting. Remember that proceeds from both support the Student Endowment Fund. Please contact me (info, back page) if you have any questions. I am always open to suggestions from NSA student members, just drop me a line. Finally, if you have recently graduated, gotten a job, or had any other life-changing events you'd like to share with your fellow NSA members – please send a blurb to me for the Metamorphosis column. See you in Philly!!

Nature McGinn

P.S. Recruit a friend as an NSA member and bring them along to Philly.

President's Message... continued from page 1.

Dee and her local organizing committee (Dave Bushek, Gef Flimlin and Susan Ford) have put together what promises to be an outstanding meeting. Program Chair/Vice President, Gary Wikfors reports there are over 200 papers and posters and we'll have local music for the President's Reception. Ken Chew's Chinese Dinner is a short walk from the Doubletree Hotel and the Recruits have several activities and sessions planned (see Nature McGinn's article also on this page). We are excited this year to have representatives from the Sheridan Press joining us and, as always, auction items are being solicited.

It has been an honor and a privilege to serve NSA and I thank you for the opportunity. I look forward to watching as the Association continues to grow and prosper. Now, my regular plea for participation and volunteerism. It takes time and effort to maintain the NSA, it takes that plus a lot of enthusiasm and dedication to make it grow. You'll be receiving your ballot soon - take the time to vote. Lou D'Abramo will be recruiting new committee Chairs and members - volunteer!!

Meetings are a great opportunity to lend your services – Monterey, California next year (contact see Paul Olin), San Antonio in 2007 (see me), and I'll be formalizing the planning committee for our centennial meeting (2008) in Providence, Rhode Island. Watch the poster area in Philly for details and sign up. 2009 in Mississippi?

See you all in Philly and thanks for the memories!

Sandy

NSA 2005 Information – Philadelphia, PA

Registration

This newsletter contains all of the information necessary for registering for the NSA 2005 meeting in Philadelphia, PA, April 10-14. Additional information can be found on the NSA web site (www.shellfish.org). In order to receive the lowest registration rate, your completed registration form must reach Danielle Kreeger by **March 1st**. Your registration fee covers entry to all programs and events at the hotel. Additional tickets for friends and partners to attend regular events (reception, auction, business lunch) can be purchased with your registration. In addition, we have two special events planned, which are **not** included in the registration fee. These special events consist of the Meerwald Oyster Schooner Cruise on Sunday, April 10th and Ken Chew's Chinese Banquet on Monday April 11th (see descriptions below). Advance tickets to these special events can also be purchased with your registration. Questions concerning registration should be directed to Danielle Kreeger via E-mail (kreeger@acnatsci.org).

Hotel and Venue Information

The conference will be held at the DoubleTree Hotel situated on the Avenue of the Arts in downtown Philly. Specifically, the hotel is located at 237 South Broad Street, Philadelphia. This center city location is roughly equidistant to the main historic sites (Liberty Bell, Independence Hall, Penn's Landing, Betsy Ross House, Edgar Allen Poe Museum, Seaport Museum), museum row (Art Museum), and trendy nightspot areas such as South Street, Rittenhouse, and Olde City. The Camden Aquarium and Philadelphia Zoo are a short drive. Philadelphia is now regarded as one of the best (if not *the* best) restaurant cities in the nation, and so rather than invest

NSA resources in extravagant catering from the hotel we are encouraging meeting attendees to explore the more than 100 restaurants, pubs, and cafes within walking distance of the hotel.



The atrium at the Philly DoubleTree Hotel

Please note **two important hotel** details. The excellent rate secured for this conference (\$139/\$149) is guaranteed only prior to our **cutoff date of by March 15th**. This is a lower rate than our last regular meeting in New Orleans, and room rates at other Philly hotels are currently in the

\$200 range, so please do not delay! And just as important, when reserving your room please be sure to give the DoubleTree our group name, which is simply “NSA.” You will need to do this to qualify for the special rate or to book online, and we need to get credit for your room nights to fulfill our contract and avoid paying for meeting space. Online reservations can also be accessed from the link on our site, or you can book by phone at 215-893-1600 or toll free at 1-800-222-TREE.

Travel and Parking

Driving directions, local attractions, weather, and other useful information is best accessed at the DoubleTree Philadelphia website, which is linked to our NSA website (www.shellfish.org.) Philadelphia International Airport is approximately a 15-20 minute drive, depending on traffic and whether you take the scenic oil refinery route or the more scenic trek up Broad Street. A SEPTA regional train does run regularly from the airport to center city, with Suburban Station being a 5-6 block walk from the DoubleTree. Cabs from the airport are another dependable option. The hotel has a parking garage that usually has plenty of space, but the charge is \$18 per day – slightly cheaper lots are nearby.

Oral and Poster Presentations

All oral presentations will be expected to use Power Point formatted for computer projection, with the exception of any special requests which should be sent to Danielle Kreeger by March 31. A dedicated lap-top will be furnished for each meeting room, and these must not be disconnected from the projectors. Therefore, please bring your presentation on either a CD or USB jump drive (no floppies or zip discs) because you will not be able to connect your own laptop to the projector. Presentations should be loaded onto the PC dedicated for your meeting room as far in advance of your session as possible (early morning or during breaks between sessions), and if you wish to provide files in advance of the meeting we will handle this for you (but to be safe always bring your own backup.)

Posters will be exhibited in the Symphony Ballroom on 4' x 8' poster boards on which each presenter will be allotted a **4' x 4' space**. Although some supplies may be provided, you are encouraged to bring your own mounting materials. Poster boards will be set up during Sunday afternoon and removed on Thursday afternoon, which means posters can be put up beginning Sunday evening and must be removed by Thursday midday. Please be sure to attend to your poster during the poster session.

Continued on page 12.



**97th Annual Meeting of the National Shellfisheries Association
 Doubletree Hotel, 237 South Broad St, Philadelphia, PA, April 10-14, 2005
 REGISTRATION FORM**



Complete a copy of this form for each person registering and mail with payment to:

Dr. Danielle Kreeger
 Academy of Natural Sciences
 1900 Ben Franklin Parkway
 Philadelphia, PA 19103, USA

Questions? Contact Danielle at:
 Email: kreeger@acnatsci.org
 Tel: 215-299-1184
 Fax: 215-299-1079

MAILING INFORMATION:

Name: _____

Address: _____

City: _____ State/Prov.: _____ ZIP/Post.Code: _____

Country: _____ E-mail: _____

NAME BADGE INFORMATION (please print, max. 25 characters for each line):

Name: _____

Organization: _____

NSA 2005 REGISTRATION COSTS:

Fees include entry into technical sessions, refreshment breaks, President's reception (Sunday), student's reception (Tuesday), poster session (Wednesday), and NSA business lunch (Wednesday). Additional tickets for friends and spouses can be purchased (see below) for the President's reception, student's reception and NSA business lunch.

	Early Bird By March 1 st	Regular By March 15 th	Late After March 15 th
NSA Member	US \$275	US \$300	US \$325
Non-NSA Member	US \$350	US \$375	US \$400
NSA Student Member	US \$150	US \$175	US \$200
Daily Registration	US \$175	US \$175	US \$175

Registration Fee = \$ _____

NSA 2005 ANNUAL MEMBERSHIP:

Regular (US \$75), Student (US \$35 + advisor's signature: _____) \$ _____

REGULAR EVENT TICKETS FOR ADDITIONAL PEOPLE (included for full registrants): **US\$ # tickets**

Presidents Reception (Sunday, April 10 th , 7-11pm)	\$35 x _____ = \$ _____
Student's Reception/Auction (Tuesday, April 12 th , 7-10pm)	\$35 x _____ = \$ _____
NSA Business Lunch (Wednesday, April 13 th , 12-2pm)	\$35 x _____ = \$ _____

SPECIAL EVENT TICKETS (not included with registration; first come first served):

Meerwald Oyster Schooner Cruise (Sunday, April 10 th 1-3:30pm - limited to 49 people)	\$30 x _____ = \$ _____
Chinese Banquet (Monday, April 11 th 7-10pm)	\$20 x _____ = \$ _____

TOTAL FEE ENCLOSED (check, money order, VISA/Master card)

US \$ _____

Payment must be in US dollars payable to **National Shellfisheries Association**.

Checks and money orders must be drawn on US banks.

NSA Federal Employer Identification Number (FEIN) is 52-1128190.

Name on credit card: _____ Signature: _____

Credit card #: _____ Expiration date: _____ **Circle Type:** VISA / MC

OTHER: Check here if you prefer a vegetarian option for the NSA Business Lunch _____

Don't forget to reserve your room at the DoubleTree Hotel by March 15th for conference rates

Monday			
7:00 AM	Student breakfast		
	Contributed Session -- Genetics and Molecular Methods	Special Session -- Introduced Species (Padilla)	Special Session -- Disseminated Neoplasia (Peters)
8:30 AM	Phylogenetics and species identification of <i>Crassostrea</i> oysters based on sequences and PCR-RFLP analyses of ITS-1 and COI gene regions. CORDES, STUBBS, REECE	<i>Dreissena bugensis</i> in Southern Lake Ontario: Distribution and Demography. DITTMAN	First report of disseminated neoplasia prevalent in Chesapeake Bay razor clams, <i>Tagelus plebeius</i> . DUNGAN, PETERS, HOMER
8:50 AM	Cross species amplifications of expressed sequence tags in three species of <i>Crassostrea</i> . SAOUT, GUO	Oyster invader more abundant in marine reserves. PADILLA, KLINGER	Disseminated neoplasia or hemocytic leukemia: where do those neoplastic cells come from? SMOLOWITZ
9:10 AM	Chromosomal location of major ribosomal RNA genes in three species of Ostreidae (Bivalvia, Mollusca). WANG	Global spread of exotic freshwater bivalves. KARATAYEV, BURLAKIOVA, PADILLA, BOLTOVSKOY, MINCHIN	Disseminated neoplasia in the soft-shell clam, <i>Mya arenaria</i> : Physiology and tumor promotion. SUNILA
9:30 AM	Microsatellite-based parentage analysis of factorial crosses in Pacific oyster (<i>Crassostrea gigas</i>) larvae and spat. TARIS, SAUVAGE, BOUDRY	Exotic freshwater bivalves as ecosystem engineers. BURLAKOVA, KARATEYEV, PADILLA, BOLTOVSKOY	Evidences for retroviral etiology of the disseminated neoplasia in cockles (<i>Cerastoderma edule</i>). ROMALDE, RODRÍGUEZ, BEAZ, VILARIÑO, CARBALLAL, DÍAZ, VILLALBA
9:50 AM	BREAK		
10:40 AM	Development of single nucleotide polymorphism (SNP) markers for the hard clam (<i>Mercenaria mercenaria</i>). SCOTT, CARNEGIE, REECE, CARNARA, GAFFNEY	<i>Crassostrea ariakensis</i> and related species in China. WANG, GUO, ZHANG, ZHANG	Disseminated neoplasia in cockles <i>Cerastoderma edule</i> of Galicia (NW Spain). CARBALLAL, IGLESIAS, DÍAZ, DA SILVA, VILLALBA, SOUDANT
11:00 AM	Developing and field-testing microsatellite markers for the hard clam <i>Mercenaria mercenaria</i> . JOHNSON, CARNEGIE, REECE, CAMARA	War of the invaders: a comparison of energy allocation in zebra and quagga mussels. STOECKMANN, BISHOP	Disseminated neoplasia in oysters <i>Ostrea edulis</i> cultured in Galicia (NW Spain). DA SILVA, FUENTES, VILLALBA
11:20 AM	Natural aneuploidy in the eastern oyster, <i>Crassostrea virginica</i> . LANDAU, GUO	Another invasive bivalve species: The green mussel, <i>Perna viridis</i> . BAKER, FAJANS, BAKER	Distribution and frequency of occurrence of gonadal neoplasia in Florida hard clam (<i>Mercenaria</i> spp.) populations. ARNOLD
11:40 AM	Direct and correlated responses to selection for adult body weight in Pacific oysters. EVANS, LANGDON	Invasive ascidian biofouling in aquaculture: an increasing problem and can it be controlled? WHITLATCH, OSMAN, SHUMWAY	
12:00 PM	Past Presidents' Lunch		
	Contributed Session -- Genetics and Molecular Methods (cont'd.)	Contributed Session -- Bivalve-Phytoplankton Interactions	Special Session --Delaware Estuary (Kreeger)
1:40 PM	Effects of age and environment on the summer mortality in cupped oyster <i>Crassostrea gigas</i> during the first two years. DEGREMONT, BOUDRY, SOLETCHEK, BEDIER, ROPERT, SAMAIN	Application of particle image velocimetry to the study of feeding activity in bivalve molluscs. FRANK, WARD, SHUMWAY, HOLOHAN, WHITLATCH, GRAY	A holistic concept for the conservation and propagation of populations of freshwater, brackish and estuarine bivalves for ecosystem services. KREEGER
2:00 PM	The search for a more hypoxia-tolerant oyster. FORD, RIKARD, WALLACE	Developmental, stage specific gene expression in the bay scallop: interrelationship of internal and external factors. ROBERTS, DIXON, WIKFORS, ROMANO	The Delaware Bay Oyster Beds of New Jersey: Compensatory Recruitment, Depensatory Mortality, and Reference Point-Based Management. POWELL, ALCOX, KRAEUTER, KLINCK, FORD
2:20 PM	Gonadal development and growth in triploid Pacific oysters, <i>Crassostrea gigas</i> . COSTIL, ROYER, BLIN, POUVREAU, ROPERT, MATHIEU	The influence of selected single species algal diets on the growth, mortality, and elemental shell composition of <i>Argopecten irradians concentricus</i> : Results of an ongoing study. ELSAESSER, BLAKE, SHUMWAY, GRECO	New Jersey's Delaware bay oyster beds: long term data and trends. KRAEUTER, POWELL, FORD, ASHTON-ALCOX, FEGLEY
2:40 PM	Comparative field trials of triploid <i>Crassostrea ariakensis</i> with <i>C. virginica</i> at eight field sites in the Chesapeake Bay: growth, mortality, condition, reversion and gametogenesis. HUDSON, KOZLOWSKI, ERSKINE, ALLEN	Survival and growth of bay scallops, <i>Argopecten irradians irradians</i> , in semi-static cultures systems utilizing an automated feeding system. WIDMAN, VEILLEUX	Diversity and seasonality of the vibronaceae in oysters (<i>Crassostrea virginica</i>) and seawater in Delaware Bay. RICHARDS, BURT AND BUSHEK
3:00 PM	BREAK		
3:40 PM	Induced triploidy in the bay scallop <i>Argopecten irradians</i> and field culture performance. SURIER, KARNEY, TETRAULT, RHEAULT	Metabolic pathways by which bay scallops modify phytosterols: experimental approach and possible disruptions by HAB species. WIKFORS, DIXON, GINER, ZHAO	Collection and relay of oyster spat from high recruitment - high mortality sites to enhance seeded production. BABB, HEARON, BUSHEK
4:00 PM	Phenotypic shell markers: assessment tools for stock restoration of bay scallops, <i>Argopecten irradians irradians</i> . STILES, CHOROMANSKI, JEFFRESS	Impacts of the toxic dinoflagellate <i>Alexandrium monilatum</i> on four ecologically important shellfish species. PATE, SHUMWAY, BURKHOLDER	A comparison of <i>Perkinsus marinus</i> infection patterns in New Jersey and South Carolina. BUSHEK, FORD

	Contributed Session -- Genetics and Molecular Methods (cont'd.)	Contributed Session -- Bivalve-Phytoplankton Interactions (cont'd.)	Special Session --Delaware Estuary (cont'd.)
4:20 PM	Identification and mapping of disease-resistance genes in the eastern oyster, <i>Crassostrea virginica</i> Gmelin. YU, GUO	Toxin accumulation by the Eastern Oyster (<i>Crassostrea virginica</i>) after grazing on toxic <i>Alexandrium fundyense</i> cysts and vegetative cells. PERSSON, SMITH, WIKFORS, QUILLIAM	Re-evaluation of oyster dredge efficiency in survey mode: application in stock assessment. POWELL, ASHTON-ALCOX, KRAEUTER
4:40 PM	Early performance of two disease-tolerant oyster strains in the Patuxent River, Maryland. ABBE, MORRELL, MCCOLLOUGH, DUNGAN, HOMER	Immune response of two populations of the eastern oyster <i>Crassostrea virginica</i> , to natural and simulated blooms of the dinoflagellate, <i>Prorocentrum minimum</i> . HEGARET, WIKFORS	An assessment of the Delaware Bay knobbed whelk dredge fishery. BRUCE
5:00 PM	Comparison of dermo disease acquisition and seasonality between standard and two disease tolerant strains of the eastern oyster (<i>Crassostrea virginica</i>) in a tributary of Chesapeake Bay. MCCOLLOUGH, DUNGAN, ABBE, MORRELL	Filtration and ammonia excretion of Manila clam, <i>Ruditapes philippinarum</i> , and their ecological impacts in Ariake Sound, Japan. HIGANO, HIRANO, KITAHARA, FUJII	The Asian isopod <i>Synidotea laevidorsalis</i> in Delaware Bay, USA. BOYD, BUSHEK
5:20 PM	Cancer genes in mussels: conservation and expression. CIOCAN	Pass the picoplankton please: aggregates may facilitate the uptake of small particles by suspension-feeding bivalves. WARD, LYONS, KACH, VILLALAZ	
Chinese Banquet			
Tuesday			
	Contributed Session - Perkinsus	Special Session -- Lobster Biology, Disease, and Mortality (Calabrese)	Contributed Session -- Restoration of Oysters and Other Bivalves
8:30 AM	Genetic structure in <i>Perkinsus marinus</i> populations of the southeastern United States. THOMPSON, HARE	Seasonal variations in sediment and bottom water chemistry: implications for lobster mortality in western Long Island Sound. CUOMO, VALENTE	Maryland Oyster Status: Industry and resource perspectives with a viewpoint on restoration. JUDY
8:50 AM	Positive selection at the superoxide dismutaseII gene in <i>Perkinsus marinus</i> . HARE, THOMPSON	Molecular characterization of bacteria associated with lesions of epizootic shell disease in the American lobster. GUBBALA, CHISTOSERDOV, SMOLOWITZ, HSU	Isolation by distance in the eastern oyster, <i>Crassostrea virginica</i> , in Chesapeake Bay. ROSE, PAYNTER, REECE, HARE
9:10 AM	Isolation of a desaturase gene(s) from <i>Perkinsus marinus</i> . BROWN, CHU, REECE	Effects of environmental stressors on disease susceptibility and survival of lobsters (<i>Homarus americanus</i>) in Long Island Sound. KAPAREIKO, ROBOHM, PITCHFORD, WIECZOREK	Bivalve population restoration via direct larval release. ARNOLD
9:30 AM	Survival, infectivity, and fatty acid content of <i>Perkinsus marinus</i> meronts maintained in seawater for up to seven days. LUND, CHU	Manganese in lobster gills as an index of hypoxia. DRAXLER, SHERRELL, WIECZOREK, LAVIGNE, PAULSON	A comparison of the behavior of larvae of two species of oysters, <i>Crassostrea virginica</i> and <i>Crassostrea ariakensis</i> . MANUEL, KENNEDY, NEWELL
9:50 AM	BREAK		
10:40 AM	Induced changes in protease activity and protein and gene expression profiles of <i>Perkinsus marinus</i> in culture. DEROSA, CASAS, COOPER, LA PEYRE	Fixed phagocytes and disease organisms in the American lobster, <i>Homarus americanus</i> . FACTOR, LAROCCA, BOYANOV, MODHWADIA	So how far do oyster larvae disperse? A dye study simulation. ERSKINE, SNYDER, SOUTHWORTH, HUDSON, SHEN, MANN
11:00 AM	Immunomodulation of <i>Crassostrea gigas</i> and <i>Crassostrea virginica</i> cellular defense mechanisms by <i>Perkinsus marinus</i> . GOEDKEN*, MORSEY, SUNILA, DEGUISE	Toxicity of pesticides used to control mosquitoes on adult American lobsters, <i>Homarus americanus</i> . DEGUISE, MARATEA, PERKINS	So how far do oyster larvae disperse? Theoretical and time frame considerations. MANN
11:20 AM	Heat adaptation/tolerance: is the eastern oyster, <i>Crassostrea virginica</i> , better than its protozoan parasite, <i>Perkinsus marinus</i> ? CHU, ENCOMIO, LUND, SOUDANT	Structural and biochemical alterations of the integument in <i>Homarus americanus</i> following acute exposure to methoprene. HORST, WALKER, BUSH, WILSON, CHANG, MILLER	Size and depth dependent larval mortality; a modeling study. DEKHENIEKS, HOFMANN, KLINCK, POWELL
11:40 AM	Pathogens of the non-native oyster, <i>Crassostrea ariakensis</i> , in its native range: current findings and work in progress. MOSS, REECE	Update on shell disease in American lobsters in southern New England waters. CASTRO	Application of real time PCR technology quantify larval dispersal and recruitment dynamics in the marine environment. VADOPALAS, JACKELS, BOURNA, FRIEDMAN
12:00 PM	Lunch On Your Own		

	Contributed Session - <i>Perkinsus</i> (cont'd.)	Contributed Session -- Bivalves	Contributed Session -- Restoration of Oysters and Other Bivalves (cont'd.)
1:40 PM	Toward gulf-wide monitoring and management of <i>Perkinsus marinus</i> : recent advances in the dermowatch program. SONIAT, RAY, KORTRIGHT, ROBINSON	Juvenile bay scallop (<i>Argopecten irradians irradians</i>) habitat preferences. CHINTALA, HINCHEY, GLEASON, BERRY	Relative susceptibility of <i>Crassostrea virginica</i> and <i>Crassostrea ariakensis</i> to mesohaline predators from Chesapeake Bay. STEVENS*, NEWELL, KENNEDY
2:00 PM	Effects of perkinsosis on the reproduction of the clam <i>Tapes decussatus</i> . CASAS, VILLALBA	Experimental use of bay scallop, <i>Argopecten irradians</i> E23, pediveligers in restoration. MURPHY, WALTON, ROBERTS, WALTON	Vertical structure and predator refuge enhance set and recruitment of eastern oysters, <i>Crassostrea virginica</i> . SONIAT, FINELLI, RUIZ
2:20 PM		Spawning activity of hard clams in two Nature Conservancy sanctuaries in Long Island, New York. DOALL, PADILLA, LOBUE, PERINO	The use of molecular markers to assess native oyster restoration efforts. MILBURY, GAFFNEY
2:40 PM		Restoration of the pinto abalone (<i>Haliotis kamtschatkana</i>): Captive rearing and phylogeography. STRAUS, NAISH, DAVIS, FRIEDMAN	Monitoring success of oyster restoration with genetic markers. CARLSSON, CARNEGIE, REECE
3:00 PM	BREAK		
3:40 PM	Poster Session		
5:00 PM	East Coast Shellfish Growers Discussion Session	Special Session -- Unnatural Disasters in Shellfish Aquaculture	
Dinner on your own			
7:00 PM	Student Auction!		
Wednesday			
	Contributed Session -- Bivalve Diseases		Contributed Session -- Bivalve Aquaculture and Fisheries
8:30 AM	Bonamiasis in the crested oyster <i>Ostrea equestris</i> in North Carolina, USA. CARNEGIE, STOKES, AUDEMARD, BURRESON		A preliminary investigation of the razor clam (<i>Ensis directus</i>) as a candidate for commercial farming. LEAVITT, GARDNER, GETCHIS, GRUNDEN, MURPHY, O'CONNELL, PATRICIO, SURIER, WADSWORTH, BURT
8:50 AM	Molecular insights into <i>Bonamia spp.</i> infections in native and non-native oysters in North Carolina. STOKES, CARNEGIE, CROCKETT, BURRESON, BISHOP		The influence of climate and salinity on a Louisiana oyster fishery. LELANCON, SWENSON, VUJNOVICH
9:10 AM	Salinity effects on the susceptibility to and persistence of <i>Bonamia ostreae</i> and <i>Bonamia</i> sp. in <i>Crassostrea ariakensis</i> . AUDEMARD, CARNEGIE, STOKES, BURRESON, BISHOP		Concentrations of ammonia, nitrite and nitrate in recirculating seawater systems causing bay scallop, <i>Argopecten irradians irradians</i> , mortality. MESECK, WIDMANJR., SENNEFELDER, VEILLEUX
9:30 AM	Microcells in flat oysters, <i>Ostrea chilensis</i> from Chiloe island, Chile : a new <i>Bonamia species</i> ? ARZUL, JOLY, ROBERT, CHOLLET, GARCIA, MIOSSEC, COCHENNEC, CARRASCO, CAMPALANS, CAMPALANS, BERTHE		Time and temperature effects for high pressure inactivation of a Norovirus surrogate. KINGSLEY, CHEN
9:50 AM	BREAK		
10:40 AM	Dynamics of MSX and SSO in <i>Crassostrea virginica</i> . Eastern oysters in Atlantic Canada. STEPHENSON, MAILLET, VENIOT, GAGNE, ARSENAULT		The impact of a warmer ocean on Atlantic surfclams at the southern limit of their range. WEINBERG, POWELL
11:00 AM	Viral gametocytic hypertrophy of <i>Crassostrea gigas</i> : an emerging disease in France? GARCIA, ROBERT, ARZUL, CHOLLET, JOLY, MIOSSEC, COMTET, BERTHE		A survey of trends in Maine soft-shell clam landings. CONGLETON, VASSILIEV, BAYER, PEARCE
11:20 AM	Summer mortality and oyster herpes infections in Tomales Bay, California. BURGE, ESTES, CRUZ, FRIEDMAN, RENAULT, ELSTON		Sensitivity of James River, VA oyster (<i>Crassostrea virginica</i>) populations to climatic events. SOUTHWORTH, HARDING, MANN
11:40 AM	Branchial lesions associated with abundant apoptotic cells in oysters <i>ostrea edulis</i> of Galicia (NW Spain). DA SILVA, VILLALBA, SUNILA		Population trends of hard clams (<i>Mercenaria mercenaria</i>) in the Maryland coastal bays. TARNOWSKI, HOMER
12:00 PM	NSA Business Lunch		

	Contributed Session -- Bivalve Diseases (cont'd)		Contributed Session -- Bivalve Aquaculture and Fisheries (cont'd)
2:00 PM	Transmission of Quahog Parasite Unknown in hard clams: interactions between different host strains and pathogen isolates. DAHL, BUGGÉ, ALLAM		A spawner-recruit relationship for a heavily exploited bivalve: the case of hard clams, <i>Mercenaria mercenaria</i> , in great South Bay, New York. KRAEUTER, POWELL, BUCKNER
2:20 PM	Quahog Parasite Unknown (QPX) and marine aggregates: are macrophytes the link? LYONS, WARD, GAST, UHLINGER, SMOLOWITZ		Estimating hard clam (<i>Mercenaria mercenaria</i>) age-length from a theoretical model. HOFMANN, KLINCK, POWELL
2:40 PM	Monitoring QPX disease in Raritan - Sandy Hook Bays: results of a 3-year survey program. ALLAM, BUSHEK, PAWAGI, RAGONE-CALVO, DOVE, NORMANT, THIEL, JOSEPH, BARNES, FORD		Recruitment patterns of the ocean quahog, <i>Arctica islandica</i> , in the Mid Atlantic Bight as illustrated by sized and age structure. MANN, HARDING, POWELL
3:00 PM	BREAK		
3:40 PM	Making the Journal: an Interactive Publishing Workshop-Special Student Session (All are welcome) (McGinn, Frank)		Abundance and distribution of <i>Rangia</i> clams in three coastal lakes of southeastern Louisiana. WONG, RABALAIS
4:00 PM	Travels of a manuscript: The Editorial office (Sandra Shumway) The Printer (Sheridan Press)		How market demand for eastern oysters has affected management actions in the industry. MACKENZIE
4:20 PM	Interactive Discussion - The Peer Review Process		
Dinner on your own			
Thursday			
	Contributed Session -- Pathogen-Host Interactions	Contributed Session -- Crustacean Biology	
8:30 AM	An integrated approach to bacteria-bivalve interactions: development of a vibriosis model in manila clams. PAILLARD, JEAN FLYE, SAINTE-MARIE, FORD, POWELL, KLINCK, HOFMANN, LE CHEVALIER, LE BOULAY, JACQ	Heavy metal concentrations in lobster (<i>Homarus americanus</i>). VASSILIEV, BAYER, CONGLETON, BUSHWAY, VETELINO	
8:50 AM	Modeling brown ring disease in the manila clam (<i>Ruditapes philippinarum</i>): the individual host model. FLYE SAINTE MARIE, JEAN, PAILLARD, KLINCK, HOFMANN, FORD, POWELL	Histones from the Pacific white shrimp, <i>Litopenaeus vannamei</i> , have antimicrobial activity. PATAT, CHAPMAN, GROSS, WARR, SCHEY	
9:10 AM	Brown ring disease: the integrated model. FORD, POWELL, PAILLARD, FLYE SAINTE MARIE, JEAN, KLINCK, HOFMANN	Pathology of a pathogenic virus in the Caribbean spiny lobster <i>Panulirus argus</i> . SHIELDS, BEHRINGER, BUTLER	
9:30 AM	Host-Pathogen interactions at pallial interfaces. ALLAM, PAILLARD, FORD	Life cycle, abundance, and geographic distribution of toad crabs, <i>Hyas coarctatus alutaceus</i> and <i>H. araneus</i> (Crustacea, Brachyura, Majidae) in the southern Gulf of St. Lawrence. SABEAN	
9:50 AM	BREAK		
10:40 AM	In vitro evaluation of promoter expression in eastern oyster (<i>Crassostrea virginica</i>) hemocytes. FOO, LI, BUCHANAN, COOPER, LA PEYRE	Aspects of the epidemiology of bitter crab disease (<i>Hematodinium sp.</i>) in snow crabs, <i>Chionoecetes opilio</i> from Conception Bay, Newfoundland. SHIELDS, TAYLOR, SUTTON, COLLINS, INGS, PARDY	
11:00 AM	Gene expression of lysozymes in the eastern oyster (<i>Crassostrea virginica</i>). ITOH, XUE, COOPER, LA PEYRE	A survey on catch of penaeus indicus brood stocks by artisanal shrimp fishing in south of Iran. GHOLAM, ABBAS, ZARSHENAS	
11:20 AM	A new lysozyme purified from the shell liquor of the eastern oyster, <i>Crassostrea virginica</i> . XUE, SCHEY, LA PEYRE		
11:40 AM	Cvsi-1 purified from plasma of eastern oysters is a slow tight binding inhibitor of serine proteases. XUE, WALDROP, SCHEY, LA PEYRE		

Poster Sessions

BAY SCALLOP RESTORATION IN THE NORTHEAST: A WORKSHOP SUMMARY. Walton, Tettelbach, Tammi, Stiles, Murphy, Goldberg, Chintala.

APPLICATION TO PRODUCE REMOTE SET OYSTERS FOR RESTORATION OF POPULATIONS IN NARRAGANSETT BAY, RHODE ISLAND. Gilcrist, Tammi, Scott, Leavitt.

QUARTZITIC SANDSTONE IS NOT A SUITABLE CULTCH FOR EASTERN OYSTERS, *CRASSOSTREA VIRGINICA*. Burton and Soniat.

EVALUATION OF SPAWNING TIME AND SPAT COLLECTION IN THE NORTHERNMOST POPULATION OF EUROPEAN OYSTERS (*OSTREA EDULIS* L.) ALONG THE ATLANTIC EAST COAST. Burke, Bataller, Ouellette.

THE EFFECTS OF CULTCH TYPE ON PREDATORY CRAB ABUNDANCES ON CONSTRUCTED OYSTER REEFS. Mikulak, Green, Grizzle.

A FITNESS OPTIMIZATION MODEL OF SALINITY - TEMPERATURE FOR SUBTROPICAL *CRASSOSTREA VIRGINICA*. Digialleonardo, Heilmayer, Powell, Qian, Scarpa, Roesijadi.

UNDERSTANDING HOW OYSTER METAPOPOPULATIONS RESPOND TO SALINITY IN THE BARATARIA ESTUARY. Melancon, Addison, Duke.

COLLECTION AND RELAY OF OYSTER SPAT FROM HIGH RECRUITMENT - HIGH MORTALITY SITES TO ENHANCE SEEDBED PRODUCTION. Babb, Hearon, Bushek.

FAECAL COLIFORM DISTRIBUTION IN FOUR COMPARTMENTS: WATER, SEDIMENTS, SUSPENSION CULTURED AND BOTTOM CULTURED OYSTERS (*CRASSOSTREA VIRGINICA*) FROM OPEN, CONDITIONAL AND PROHIBITED SHELLFISH HARVESTING AREAS. Sonier, Mayrand, Ouellette, Mallet, Bogen.

COMPARATIVE AGE CLASS FEEDING IN AMERICAN OYSTERS (*CRASSOSTREA VIRGINICA*): IMPLICATIONS FOR HABITAT RESTORATION AND CONSERVATION. Ozbay, Brown.

THE EFFECTS OF BIVALVES (*MERCENARIA MERCENARIA*, *MYA ARENARIA*, AND *GEUKENSIA DEMISSA*) ON ZOOPLANKTON COMPOSITION. Mass, Lonsdale, Cerrato.

SHELLFISH AS POTENTIAL VECTORS FOR THE TRANSFER OF HARMFUL ALGAE. Pate, Shumway, Burkholder, Springer

POTENTIAL TRANSPORT OF HARMFUL ALGAE THROUGH BIVALVES. Hégaret, Shumway, Wikfors.

TWO SPECIES OF THE TOXIC DINOFLAGELLATE *ALEXANDRIUM* HAVE NO EFFECT ON IMMUNE SYSTEMS OF THE OYSTERS *CRASSOSTREA VIRGINICA* AND *CRASSOSTREA GIGAS*. Hégaret, Wikfors, Soudant, Lambert, Berard, Lassus.

IMMUNE RESPONSES OF THE EASTERN OYSTER, *CRASSOSTREA VIRGINICA*, EXPOSED TO POLYCYCLIC AROMATIC HYDROCARBONS VIA MICROPHYTOBENTHIC DIATOMS. Croxton, Wikfors, Gragg.

THE EFFECT OF COPPER EXPOSURE ON HEMOCYTE NUMBER AND INTENSITY OF *PERKINSUS MARINUS* INFECTIONS IN *CRASSOSTREA VIRGINICA*. Markley, Volety.

PATHOGENIC BACTERIA FOR SHELLFISH LARVAE. *VIBRIO NEPTUNIUS*, A NEW OYSTER PATHOGEN. Prado, Romalde, Osorio, Barja, Montes.

SETUP OF A FLUOROMETRIC PLATE READER TECHNIQUE FOR IN VITRO MEASUREMENT OF QPX VIABILITY AND PROLIFERATION. Bugg, Dahl, Allam.

OSTREA CONCAPHILA : A NATURAL HOST OF *BONAMIA OSTREAE* ? Arzul, Chollet, Garcia, Robert, Joly, Miossec, Berthe.

Continued on page 10.

Posters... continued from page 9.

COMPARISON OF *PERKINSUS MARINUS*, *PERKINSUS CHESAPEAKI* AND *PERKINSUS OLSENI* INFECTIONS IN EASTERN OYSTERS (*CRASSOSTREA VIRGINICA*). Casas, Audemard, La Peyre.

IN VITRO PROPAGATION OF *PERKINSUS MEDITERRANEUS* A PARASITE OF THE FLAT OYSTER, *OSTREA EDULIS*. La Peyre, Casas, Reece, Villalba.

SALINITY EFFECTS ON THREE *PERKINSUS* SPP. VIABILITY, METABOLIC ACTIVITY AND PROLIFERATION. La Peyre, Casas, La Peyre.

ANALYSIS OF *PERKINSUS MARINUS* IN *CRASSOSTREA VIRGINICA* USING REAL-TIME POLYMERASE CHAIN REACTION. Baird, Roesijadi.

ACTIVATION OF NITRIC OXIDE RESPONSE IN *CRASSOSTREA VIRGINICA* AND IN *CRASSOSTREA GIGAS* AFTER AN EXPERIMENTAL INFECTION WITH THE *PERKINSUS MARINUS*. Villamil, Dorrington, Gomez-Leon, Gomez-Chiarri.

PERMANENT ADVISORY NETWORK FOR DISEASES IN AQUACULTURE (PANDA). Arzul, Ariel, Hill.

DEVELOPMENT OF EST-SSR MARKERS FOR THE BAY SCALLOP, *ARGOPECTEN IRRADIANS*. Romano, Roberts.

VARIATION IN HSP70 ISOFORM EXPRESSION IN THE EASTERN OYSTER DUE TO SEASON AND INFECTION WITH *PERKINSUS MARINUS*. Encomio, Chu.

REAL-TIME PCR TO MEASURE EXPRESSION OF HSP70 AS A RESPONSE TO STRESS IN *CRASSOSTREA VIRGINICA*. Powell, Heilmayer, Roesijadi.

GEOGRAPHICAL PATTERNS OF SNP VARIATION IN THE EASTERN OYSTER, *CRASSOSTREA VIRGINICA*. Varney, Gaffney.

MULTIXENOBIOTIC RESISTANCE: HELPING SHELLFISH ADAPT TO NASTY NEIGHBORHOODS. McGinn, Cherr.

IDENTIFICATION OF THE MAJOR PLASMA PROTEIN OF EASTERN OYSTERS (*CRASSOSTREA VIRGINICA*). Itoh, Xue, Li, Schey, Cooper, La Peyre.

POTENTIAL USE OF LYSOZYME FROM SHELL LIQUOR OF EASTERN OYSTERS AGAINST BACTERIA CAUSING FOOD POISONING AND FOOD SPOILAGE. Datta, Xue, Janes, Losso, La Peyre.

FLOW CYTOMETRIC DETECTION OF CELL PROLIFERATION IN SOMATIC TISSUES OF EASTERN OYSTERS. Jimenez, Jenkins, Tiersch, La Peyre.

MAGNETIC RESONANCE (MR) AND COMPUTED TOMOGRAPHY (CT) OF NORMAL AND SHELL DISEASED LOBSTERS (*HOMARUS AMERICANUS*). Bayer, Congleton, Brasslett, Pearce, Cowan.

THE CONTRIBUTION OF EGG-BEARING FEMALE AMERICAN LOBSTER (*HOMARUS AMERICANUS*, H. MILNE-EDWARDS, 1837) POPULATIONS TO LOBSTER LARVAE COLLECTED IN LONG ISLAND SOUND BY COMPARISON OF MICROSATELLITE ALLELE FREQUENCIES. Crivello, Landers Jr., Keser.

THE ASIAN ISOPOD *SYNIDOTEA LAEVIDORSALIS* IN DELAWARE BAY, USA. Boyd, Bushek.

SURVIVAL AND GROWTH OF BAY SCALLOPS, *ARGOPECTEN IRRADIANS IRRADIANS*, FED *TETRASELMIS CHUI* AS AN ALGAL PASTE AND LIVE MICROALGAE FROM CARBOY CULTURES. Widman, Veilleux.

POTENTIAL USE OF INDUCED TRIPLOIDY IN FLORIDA HARD CLAM AQUACULTURE. Scarpa, Sturmer, Baker, Laramore, El-Wazzan.

AN INTEGRATED DIGITAL CALIPER-PC MEASUREMENT SYSTEM FOR SHELLFISH WITH A COST-BENEFIT ANALYSIS. Coen, Hadley, Stephen, Hodges.

Research Note

Investigating the effect of habitat change on clams using experimental transplants along a pollution gradient

Megan Stewart (PhD Candidate)
School of Geography and Environmental Science, Leigh
Marine Laboratory, University of Auckland

This project investigates the effects of urban development on the New Zealand little neck clam, *Austrovenus stutchburyi*. Impetus for this work has been to provide information for managers of this important resource and for interested community groups. Therefore, the primary focus has been on developing applied techniques than can be used by management authorities to not only monitor the impacts of urban development on shellfish populations, but to predict the outcome of further development and thereby avoid, remedy or mitigate for adverse impacts as required under the New Zealand Resource Management Act (1991). As Auckland's growing population expands into coastal areas, there are associated impacts on near shore coastal and estuarine environments. There have been localized declines of intertidal shellfish populations around New Zealand, in particular urban Auckland.

The effect on clams, of habitat change associated with increased sediment deposition and contaminants in sediment, was experimentally investigated by transplanting clams along a pollution gradient. Transplant experiments to monitor accumulation rates or effects of contaminants are a well-established technique, particularly using oysters and mussels. The NZ little neck clam meets many of the requirements for indicator species and has potential to be developed as an estuarine indicator. Four transplants were carried out on a seasonal basis (90 days duration), as well as a medium term experiment (360 days). Clams (20-30mm), collected from a relatively pristine site were tagged and transplanted to sites in one of New Zealand's most polluted estuaries. Indices of condition and glycogen and changes in reproductive potential were experimentally investigated. An additional objective was to determine the relative habitat limitations of clams and to determine the most successful or appropriate habitats for enhancement of clams.

There was found to be clear habitat limitations for clams with substantial reductions in contaminant inputs and habitat restoration needed at several locations before enhancement using transplants could be undertaken. There were significant correlations between survival of clams and the levels of contaminants in sediments and sediment grain size. Clam mortality at each site over time, also followed the established pollution gradient. Measures of physiological health also showed some temporal components related to contaminants and sediment grain size.

In order to interpret these patterns of survival and condition, in relation to the sediment contaminant levels, it is necessary to measure the contaminant body burden of the transplanted clams. Analysis of contaminant levels in clams from a range of sites, varying in contaminant loading will allow linkages to be made between changes in observed clam health and contaminant levels accumulated by shellfish. Analysis of the actual levels of contaminants in clams also allows interpretation of the relationship between sediment contaminant levels and that accumulated by clams and the rate of contaminant uptake over time (bioaccumulation). Polycyclic aromatic hydrocarbon (PAH) and organochlorine body burden have already been analysed in association with City University of Hong Kong. The Michael Castagna Student Research Grant was used to analyse the heavy metal content of clams from the transplant experiment, which will aid substantially in the interpretation of the effects of habitat change on clam health.

Editor's note: Megan Stewart received the Michael Castagna Student Grant for Applied Research in 2004. This report summarizes her research project.

Ken Chew Banquet not to be Missed!

Ken Chew has once again arranged a Chinese Banquet for the Philadelphia meeting. The Ocean City Restaurant, located on 9th Street in Philadelphia's Chinatown, is a 25 minute walk (or a 5 minute taxi ride) from the Doubletree Hotel. The menu has nine courses that include fish, shrimp, beef, pork, and chicken dishes, as well as a couple of vegetable platters. Ken, Danielle Kreeger, Gef Flimlin and Susan Ford sampled some of these dishes at the restaurant during a recent tour of Chinatown and can attest to the excellence of the food and its presentation, and the décor of the restaurant. The dinner will be held on Monday April 11. A cash bar will be open from 6 to 7 pm, and the dinner will begin at 7 pm. The cost of the meal and gratuities is a real bargain at only \$20. Tickets can be purchased by checking the "Chinese Banquet" box on the meeting registration form. A map to the restaurant will be provided in your registration packet. You'll also be able to buy tickets at the registration desk, but don't wait. It is sure to be a wonderful banquet so sign up now.

Susan Ford

Philly 2005 Information... continued from page 3.

President's Reception

The President's Reception will be held on **Sunday evening** (April 10) from 7:00 to 11:00 PM. Hors d'oeuvres, cocktails and seafood donated by local growers will be one highpoint of the evening. Gef Flimlin has arranged for a special oyster tasting event featuring some of the most expensive oysters ever consumed! A second highlight will be the Mood Swingers, a band organized by John Ewart and consisting of a noted saxophonist (John), along with excellent local talents on lead guitar, bass, drums and possibly other local and NSA talents. We're promised to be treated to an eclectic mix of styles, including classic rock & roll, blues, bluegrass, reggae, R&B and according to John – "funky stuff" that will "start out kind of mellow and then ratchet up so that we end up rocking the place out!"

Ken Chew's Chinese Banquet

A regular tradition will be kept alive on **Monday night** with Ken Chew's Chinese Banquet. Ken visited Philly in December and with the local organizers following along to fill our bellies, Ken chose the Ocean City Restaurant, 234 N. 9th Street in Philly's thriving Chinatown. This is walkable from the hotel, but a short cab ride can be more civilized and exciting!

Student Benefit Auction

Sandy Shumway's annual auction to benefit the NSA Student Endowment Fund will continue our other regular tradition. This event will occur in the Ormandy Ballroom and will span from 7:00 to 11:00 PM on **Tuesday night**. Cocktails and "grazing stations" will be in the house.

Sail Aboard an Historic Oyster Schooner

A rare treat will be available to NSA attendees and their families and friends on **Sunday afternoon**. The A.J. MEERWALD is a fully restored oyster schooner that was designated as New Jersey's official tall ship by Governor Christine Whitman on Earth Day in 1998. Launched in 1928, the MEERWALD is a Delaware Bay oyster schooner, a distinct vessel that evolved to meet the needs of the local oyster fishery and one of hundreds built along South Jersey's Bayshore before the decline of the shipbuilding industry that coincided with the Great Depression. This ship will be docked at Penn's Landing (on the freshwater tidal portion of the Delaware Estuary) during the NSA Meeting. Dave Bushek has arranged a special sailing cruise for NSA attendees from 1:00 to 3:30 on Sunday. Passengers will step back in time as they are

invited to help raise (set) and lower (strike) the MEERWALD's 3500 square feet of canvas sail while they learn and experience maritime history during the 2 hour sail. This event is limited to 49 people, and tickets will be sold on a first-come-first-served basis.

Book Review

Responsible Aquaculture for a Secure Future; proceedings of a special session on shrimp farming. World Aquaculture 2003. Darryl E. Jory, Editor. World Aquaculture Society: Baton Rouge, Louisiana 70803, USA 2003.

The proceedings of the special session on shrimp farming at the World Aquaculture conference, which was held in Brazil in 2003, provides an overview of the practical aspects of shrimp farming. Although the first part of this volume has emphasis on the status of the shrimp farming in Brazil and Venezuela, subsequent papers cover all major aspects of the industry from seed production to marketing.

As can be expected in a compilation of papers presented at a conference, some authors provide greater scope and depth of coverage than others. Some address the questions related to responsible, sustainable aquaculture more successfully than other authors. I found the discussions of feed ingredients by Tacon, and Nates and Tacon to be especially relevant. The paper by Lawrence, et al on "environmentally friendly" feed programs should also provide critically important insights in support of sustainable, responsible aquaculture.

Most of the other papers are primarily "state of the art" reports covering production methods, such as broodstock production, production of healthy nauplii, disease prevention and control, biosecurity, and genetics. New production innovations, value added concepts for greater profitability and, thus better sustainability, and an analysis of the world market both present and future are included.

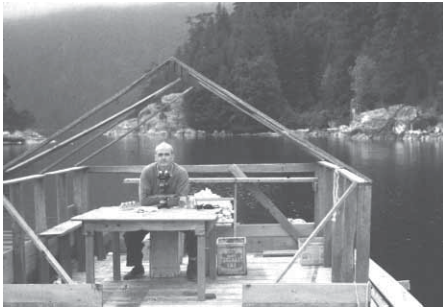
In fairness to potential purchasers, I am compelled to comment that the volume is not a "jewel" of the printing and binding aspects of publishing. Printing "bleeds through" from page to page and the perfect binding is less than perfect. While acknowledging these physical drawbacks, I still recommend the volume to those interested in the subject matter; just use it with care and try to ignore the "bleed through" problem.

This volume contains "something for everyone" involved with, or simply interested in, shrimp farming. It is not a "how to" manual, but is understandable to anyone with basic background in the biology and culture of shrimp. It will be a valuable addition to the library of shrimp researchers, shrimp farmers, or anyone interested in broadening their understanding of a major component of the world aquaculture industry. For

Continued on page 13.

Shellfish Research Center Dedicated to Quayle and Bourne

On October 8, 2004, the Centre for Shellfish Research (CSR) officially opened at Malaspina University-College in Nanaimo British Columbia. Under CSR Director, Don Tillapaugh's guidance, the new 8000 Ft² building was designed and completed for September occupancy. During the official opening ceremony, the building was dedicated to the late Dr D. B. (Dan) Quayle and Dr Neil Bourne, two well-known and highly respected shellfish researchers and founders of the BC shellfish culture industry. Neil Bourne was present and Moura Quayle, the daughter of D. B. Quayle represented the Quayle family.



Dan Quayle at his "remote" lab in Pendrell Sound, BC.

During over 40 years of active research, D.B. Quayle set the foundations of what today has become a significant and expanding oyster culture industry in BC.

He discovered BC's first local seed source for the Pacific oyster which freed the industry from dependence on Japanese seed, and he did fundamental research on many



Malaspina University-College's Quayle/Bourne Centre for Shellfish Research.



The late Dan Quayle with his friend and colleague Neil Bourne in 1993 at the 9th International Pectinid Workshop in Nanaimo, BC.

other west coast invertebrate species. Dan received the Wallace Award from the NSA in 1992.

Neil Bourne worked with D.B. Quayle for many years at the Pacific Biological Station in Nanaimo where he developed methodology for the culture of the Japanese scallop in BC. Neil, recently retired from DFO, has also done major research on clam biology, both from fisheries and aquaculture points of view. Neil is also a Wallace Awardee from 1991, served as President of the NSA in 1981-2 and has received the Honored Life Member award. The active research careers of these two scientists spans over fifty years of achievement of great benefit to the people of the BC coast.

Bill Pennell

Responsible Aquaculture...

critics of shrimp farming, the volume contains ample demonstration of the fact that those involved in this industry are taking serious steps to make it environmentally responsible while securing a sustainable future.

John G. Nickum

Reminder:
Don't forget to bring your auction items to Philly to help raise money for the Student Endowment Fund

Book Review

Remarkable Shrimps: Adaptations and Natural History of Carideans by Raymond T. Bauer, University of Oklahoma Press, ISBN 0-8061-3555-7, 296 pp.

Remarkable Shrimps: Adaptations and Natural History of Carideans is Volume 7 of the Animal Natural History Series and this 2004 publication is a pleasant journey through the natural history of this highly diverse group of shrimp species. For many, familiarity of caridean shrimp may be limited to their popularity as “ornamentals” that are often purchased to become inhabitants of salt water aquaria located in homes or public establishments. Others may be familiar with the increasing culture of the freshwater prawn *Macrobrachium* sp. in the United States and the Indo-Pacific region of the world, but may not know that this species is a caridean shrimp. This book will indeed introduce you to much more. In the preface, the author, Raymond T. Bauer, refers to his “first encounter” with a caridean shrimp in a tide pool located in an intertidal zone along the western coast of California. The excitement of that first encounter persisted as he has devoted his scientific career to increasing the knowledge about these shrimp, ultimately leading to writing a compendium of topics about these shrimp. The book is most definitely a labor of love founded upon his desire to share some fascinating information with others.

Remarkable Shrimps is foremost a natural history volume that focuses on form and function, behavior, and provides descriptions of the different families of caridean shrimp. The text is complemented with 114 well illustrated figures and many tables. What makes this group of shrimp so “remarkable”, in fact, extraordinarily interesting, is the sheer diversity of form, habitat, and behavior that is described. As stated in the preface, the book is not intended to address all aspects of caridean biology, but rather those for which the author has devoted much of his research endeavors. The 282 page book consists of 11 chapters, the first devoted to descriptions of what a caridean shrimp followed by chapters that focus on antifouling mechanisms, coloration, reproductive biology, mating and life histories. The last chapter addresses the economic aspects of caridean shrimp as related to various types of capture fisheries and corresponding gear as well as existing and potential aquaculture enterprise. Most comparative information about peneaid versus caridean shrimp is provided in this chapter,

including up-to-date information about the volume of catch and corresponding economic value

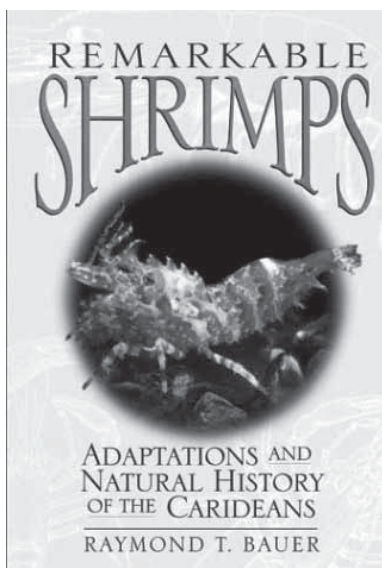
The book is very readable and particularly evident is the real care dedicated to clear recognizable descriptions of the various families or forms, a goal that is not often attained in other books. Particularly impressive is a collection of 11 plates of multiple black and white or color photographs that range from scanning electron micrographs of gills to photos of vivid pigment-containing chromatosomes. These photographs are true testimony to the impressive diversity of these shrimp. I found the chapter titled “Symbioses”

particularly interesting, reading and learning about apparent evolutionary traits that are adaptations for symbiotic living with coral, sea urchins, clams or fishes. In many chapters, the author builds on what has been presented by skillfully proceeding to a level of speculation that achieves a certain coalescence of thought. He also offers ideas about fruitful avenues of future scientific investigation.

The book could easily be included on the bookshelf of not only crustacean biologists but also physiologists, evolutionists, and ecologists. A variety of diverse, universally appealing topics, such as mimicry of environmental background, protandry, latitudinally based life history strategies, and the

evolution of mating systems, as represented by this unique group of crustaceans, await your examination.

Lou D’Abramo



Bivalve Culture Methods

May 23-27, 2005

Darling Marine Center
Walpole, Maine



A one week hand-on residential course exploring the theory and practice of marine bivalve aquaculture. Bivalve taxonomy, anatomy, reproductive biology and genetics, algal culture, larval and juvenile rearing techniques, site selection, water quality and human health issues are among the topics to be covered. College credit available through the University of Maine. For more information, contact Linda Healy, Course Coordinator, Darling Marine Center, 193 Clark's Cove Road, Walpole, Maine 04573; phone: (207) 563-3126 ext 200, email: lhealy@maine.edu, or visit: <http://server.dmc.maine.edu/>, or contact Dr. Chris Davis, course instructor (contact information can be found on the back page).

Upcoming Meetings

25th Milford Aquaculture Seminar: February 28 - March 2, 2005, Econolodge Hotel, New Haven, CT. For agenda information or registration materials, contact Walter Blogoslawski at phone (203) 882-6535, email: walter.blogoslawski@noaa.gov or visit <http://mi.nefsc.noaa.gov/seminarworkshop.html>.

Open Science Meeting on HAB's and Eutrophication: March 7-10, 2005, Baltimore, MD. For more information, visit: http://www.whoi.edu/redtide/announcements/GEOHAB_opensciencemeeting.html.

Benthic Ecology Meeting: April 6-10, 2005, Williamsburg Hospitality House, Williamsburg, PA. For more information, visit <http://www.vims.edu/bem2005/>.

National Shellfisheries Association 97th Annual Meeting: April 10-14, 2005, Doubletree Hotel, Philadelphia, PA. Contact Dee Kreeger or Gary Wikfors for more information (see back page for contact information).

15th International Pectinid Workshop: April 20-26, 2005, Mooloolaba, Queensland, Australia. For more information, contact Mike Dredge at flatcalm@ozemail.com.au or Peter Duncan at pduncan@usc.edu.au.

International Invasive Sea Squirt Conference: April 21-22, 2005, Woods Hole Oceanographic Institution, Woods Hole, MA. The aim of this conference is to bring together marine biologists and other people concerned with invasive ascidians, to explore the biology, ecology, impacts, management options for control, and other relevant topics. For more information contact Mary Carman, Conference Coordinator at email mcarman@whoi.edu or visit <http://www.whoi.edu/institutes/oli/activities/seasquirt.html>.

World Aquaculture 2005: May 9-13, 2005, Bali International Convention Center, Nusa Dua, Bali, Indonesia. This year's theme is "International Peace and Development Through Aquaculture". For more information, contact the Conference Manager, 2423 Fallbrook Place, Escondido, CA 92027 or phone (760) 432-4270 or visit <http://www.was.org>.

5th Mediterranean Conference & Exposition on Fisheries and Aquaculture: June 10-12, 2005, Piraeus Exhibition Centre, Athens, Greece. For more information, phone +30 210 92 21 254 or email info@europartners.gr.

Aquaculture Canada 2005: July 3-6, 2005, St. John's, Newfoundland, Canada. For more information, contact the Aquaculture Association of Canada by visiting <http://www.aquacultureassociation.ca/index.html>.

6th International Crustacean Congress: July 18-22, 2005, University of Glasgow, Scotland, UK. For more information, visit <http://gla.ac.uk/icc6> or phone +44 (0) 141-330-5969 or email neil@bio.gla.ac.uk.

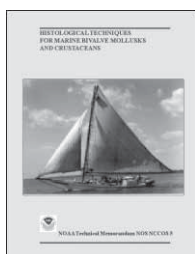
Aquaculture Europe 2005: August 5-9, 2005 in conjunction with Aqua Nor 2005, August 9-12 in Trondheim, Norway. For more information, email ae2005@aquaculture.cc.

Larvi 2005: September 5-9, 2005, Ghent University, Ghent, Belgium. Following up on the previous larvi symposia (1991, 1995 and 2001), the scope of larvi 2005 is to present the latest developments and challenges in the various disciplines of larviculture research. For more information, visit <http://allserv.ugent.be/aquaculture/larvi/index.htm>.

8th International Conference on Shellfish Restoration: October 2-5, 2005, Brest, Brittany, France. This year's theme will be "Enhancement and Sustainability of Shellfish Resources." Abstracts are due April 30, 2005. For more information, contact either Jeanne Moal (Jeanne.Moal@ifremer.fr) or Philippe Soudant (Philippe.Soudant@univ-brest.fr) or Aswani Volety (avolety@fgcu.edu). You may also visit <http://ifremer.fr/icsr05> for more information on this meeting.

National Shellfisheries Association 98th Annual Meeting: March 26-30, 2006, Monterey Marriot, Monterey, CA. Contact Paul Olin at pgolin@ucdavis.edu for more information.

If you would like to announce a meeting, conference or workshop that might be of interest to NSA members, please contact Chris Davis (see back page for contact information).



The second edition of **Histological Techniques for Marine Bivalve Mollusks and Crustaceans** (Howard et al. 2004) is now available upon request to the Librarian, NOAA/NOS Cooperative Oxford Laboratory, 904 South Morris St., Oxford, MD 21654. This expanded edition updates the "Histological Techniques for Marine Bivalve Mollusks" manual by Howard and Smith (1983). Histological technicians worldwide will find the 218-page manual a friendly source for histological processing of shellfish.

**Ms. Nancy Lewis
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Officers, Committee Chairs and Staff of the National Shellfisheries Association

**Dr. Sandra Shumway, President; Editor,
Journal of Shellfish Research; Steering Committee Aquaculture '07**

Dept. of Marine Sciences, Univ. of Connecticut
1080 Shennecossett Road, Groton, CT 06340
Phone (860) 405-9282; FAX (860) 405-9153
Email: sshumway@uconnvm.uconn.edu

Dr. Lou D'Abramo, President-Elect

Department of Wildlife and Fisheries
Mississippi State University
Box 9690, Mississippi State, MS 39762
Phone (662) 325-7492; FAX (662) 325-8726
Email: ldabramo@cfr.msstate.edu

Dr. Gary H. Wikfors, Vice-President, Program Chair, Philadelphia '05

National Marine Fisheries Service Laboratory
212 Rogers Ave., Milford, CT 06460
Phone (203) 882-6525; FAX (203) 882-6517
Email: gary.wikfors@noaa.gov

Dr. David Bushek, Treasurer

Haskin Shellfish Research Laboratory
Rutgers University, 6959 Miller Avenue
Port Norris, NJ 08349
Phone (856) 785-0074 ext. 4327
FAX (856) 785-1544
Email: bushek@hsl.rutgers.edu

Ms. Marty Chintala, Secretary

Atlantic Ecology Division U.S. EPA
27 Tarzwell Drive
Narragansett, RI 02882
TEL: (401) 782-3155 ; FAX: (401) 782-3030
Email: chintala.marty@epamail.epa.gov

Ms. Nancy Lewis, Bookkeeper

P. O. Box 302
Accomac, VA 23301
Phone (757) 787-2198
Email: nlewis@dmv.com

Dr. Melbourne R. Carriker, Historian

College of Marine Studies
University of Delaware
Lewes, DE 19958
Phone (302) 645-4274; FAX (302) 645-4007
Email: carriker@udel.edu

Dr. Aswani Volety, Co-Chair, Endowment / Student Awards Committee

Environmental Science
College of Arts and Sciences
Florida Gulf Coast University
10501 FGCU Blvd., Fort Myers, FL 33965-6565
Phone (239) 590-7216; FAX (239) 590-7200
Email: avolety@fgcu.edu

Dr. Carolyn Mueller Hansen, 2004-2005 Member-at-Large

Oak Ridge National Laboratory
Bldg. 4500S, MS 6123
Bethel Valley Road, P.O. Box 2008
Oak Ridge, Tennessee 37831
Phone (937) 433-4994
Email: news@shellfish.org

Mr. Richard C. Karney, 2003-2006 Member-at-Large, Co-Chair, Industry Committee

Martha's Vineyard Shellfish Group
P. O. Box 1552, Oak Bluffs, MA 02557
Phone/FAX (508) 693-0391
Email: MVSG@capecod.net

Dr. Jonathan Davis, 2004-2007 Member-at-Large, Co-Chair, Industry Committee

15425 Smoland Lane
Bainbridge Island, WA 98110
Phone (206) 842-0894; FAX (360) 765-3028
Email: jdavis@bainbridge.net

Dr. Danielle Kreeger, Chair, Past-Presidents, Elections and Awards Committees

Patrick Center for Environmental Research
Academy of Natural Sciences
1900 Ben Franklin Parkway
Philadelphia, PA 19103
Phone (215) 299-1184; FAX (215) 299-1079
Email: kreeger@acnatsci.org

Dr. Fu-Lin Chu, Co-Chair, Endowment / Student Awards Committee

VIMS School of Marine Science
College of William and Mary
P. O. Box 1346, 1208 Greate Road
Gloucester Point, VA 23062
Phone (804) 684-7349; FAX (804) 684-7186
Email: chu@vims.edu

Dr. G. Jay Parsons, Co-Chair, Publications Committee

Aquaculture Science Branch, Fisheries and Oceans
200 Kent St, Stn 12114
Ottawa, ON Canada K1A 0E6
Phone (613) 990-0278; FAX (613) 993-7665
Email: ParsonsJa@dfp-mpo.gc.ca

Ms. Teri King

Co-Chair, Membership Committee
Washington Sea Grant
University of Washington
P.O. Box 488, Shelton, WA 98584
Phone (360) 432-3054; FAX (360) 432-3055
Email: guatemala@u.washington.edu

Dr. John Scarpa, Co-Chair, Membership Committee

Harbor Branch Oceanographic Institution, Inc.
5600 U.S. 1 North
Ft. Pierce, FL 34946
Phone (772) 465-2400 x404; FAX (772) 460-1857
Email: jscarpa@hboi.edu

Ms. Nature McGinn, Chair, Student Recruits

Bodega Marine Lab
P.O. Box 247, Bodega Bay, CA 94923
Phone (707) 875-1973
E-mail: nameginn@ucdavis.edu

Mr. Richard Childers, Chair, Pacific Coast Section

Washington Dept. of Fish and Wildlife
Point Whitney Shellfish Lab
1000 Point Whitney Road
Brinnon, WA 98320
Phone (360) 796-4601 X400
Email: childrkc@dfw.wa.gov

Mr. George Abbe, Chair, A-B-F Committee

Estuarine Research Center
Academy of Natural Sciences
10545 Mackall Road, St. Leonard, MD 20685
Phone (410) 586-9709; FAX (410) 586-9705
Email: gabbe@moac.morgan.edu

Dr. John N. Kraeuter, Co-Chair, Publications Committee

Haskin Shellfish Research Laboratory
Rutgers University
6959 Miller Avenue
Port Norris, NJ 08349
Phone (856) 785 0074 x131; FAX: (856) 785-1544
Email: kraeuter@hsl.rutgers.edu

Dr. Maureen Krause, Co-Chair, Endowment / Student Awards Committee

Biology Dept. 114 ; Hofstra University
Hempstead NY 11549 USA
Phone (516) 463-6178 ; FAX: (516) 463-5112
Email: biomkk@hofstra.edu

Dr. Christopher V. Davis, Editor,

NSA Quarterly Newsletter
P.O. Box 302, 1957 Friendship Road,
Waldoboro, ME 04572
Phone/FAX (207) 832-6067 (call before faxing)
Email: cdavis@midcoast.com