Captain's Corner

You can be proud that you are a member of the South Carolina Marine Educators Association. Nationally, we are one of the largest marine educators associations. The activities of SCMEA have continued to expand in this past year, providing information on marine education opportunities to people across the state. This year promises to be even better, highlighted by our October conference in Hilton Head.

A significant accomplishment of SCMEA in the last year was by Phil Astwood, Secretary-Treasurer. Phil has compiled a list of roughly two thousand people in the state who have expressed an interest in marine education. With this list, information can be distributed more readily and we can continue to assess marine education needs and resources in the state. So often in the last two years, through SCMEA, educators who have created excellent marine education activities for their classes and audiences have come forward and taught other educators to use and create materials. With this new mailing list, SCMEA will be able to reach those with an interest in marine education and let them know of a forum for professional support of their interests.

The new newsletter format is thanks to Wendy Allen, who has enthusiastically become editor of the newsletter. Please let her know if you have comments on the new format or have topics that you would like to see reported in the newsletter.

Despite the ravages of the storm, the S. C. Wildlife and Marine Resources Department was an excellent host to the conference in May. Reports are that the conference was a great success and if anything, there was too much to do! Not a bad problem to have, although we are working to make the October conference a little less tightly stacked.

The "A B Seas" of this year's conference will be fun to learn in Hilton Head at the University of South Carolina's campus. Paula Keener, President-Elect, has put together a great program. A copy of the registration brochure has been included with this newsletter. If you haven't received yours, give a call to one of the Board members listed in the newsletter and we will be happy to send you one. Let others know of the conference, too! By providing you with a detailed agenda prior to the conference, we hope that your school or organization will be impressed with the program offerings and support your coming to the conference. We have also worked to keep the cost of registration to a minimum so that it is both affordable and fun! At this year's conference we will hold an auction to raise money to further the Association's marine education goals. It will take a few years to build up the account, but we then hope to have a grant or scholarship program to assist SCMEA marine educators in their professional development.

So, it has been and continues to be an exciting year for SCMEA. The reason for this is very simple, you, the members of this organization, are great marine educators! What we have needed in South Carolina, a forum for marine educators to learn about what others are doing and lend professional support for our activities, is here in SCMEA. Together, let's continue to make our work as marine educators great!

Rhett Wilson
SCMEA President
South Carolina Aquarium Update

They have done it. Working throughout the last year, the designers for the South Carolina Aquarium have put together plans for what promises to be one of the finest aquariums in the country. By this time next year, construction should be underway as we move toward the opening date a few years hence. A few years?!, you might ask. Well, designing and building an aquarium is not like designing and building most buildings. First there are the animals to think of, then how to handle hundreds of thousands of gallons of different types of water: fresh, salty, warm and chilly, not to mention building a building that can support all of that water with a design that people will note, acclaim, and enjoy. So, it takes a lot of thought and a good dose of time to ensure that it all comes out right.

The exhibit designers brought some exciting models to the most recent design meeting. Miniature walk through mountain streams and waterfalls, tiny tanks that give perspective to the glimpses into the deep ocean. As these tanks and designs continue to be refined, we will have some slide show presentations of the work to introduce and “walk” audiences through the facility, so keep this in mind for presentations to civic groups over the next few years. Later in 1992, when the education staff is hired and begins work, marine education activities will be developed for use with groups and in the classroom.

In working with marine educators in South Carolina over the last few years, and particularly with SCMEA members in the last two years, it has been exciting to see that South Carolina has such a strong group of marine and environmental educators. We are so fortunate in this state to have our incredibly diverse and beautiful environment, from the mountain streams to the Gulf stream, and we need to teach people to appreciate, care for and nourish this land and water. Working for years despite lack of funds, many educators have created excellent activities to teach classes and audiences about South Carolina’s environment. In recent years, there has been much more economic support for the development of science, environmental, and marine education. The South Carolina Aquarium will make South Carolina educators’, particularly marine educators’ tasks even easier and more enjoyable with its exhibits and programs.

As the plans for the South Carolina Aquarium move from concepts to drawings and models to construction, then to full scale operation, a whole world of aquatic environments that has been inaccessible to most will be at your fingertips. Teaching about adaptation? Send your students to some of the tanks in the aquarium that will show flounder hiding in the sand and pipefish nestled secretively in the corals! It will be worth the years of careful construction to make sure it all works just right!

If you have any questions about the South Carolina Aquarium or thoughts about exhibits or programs, please get in touch with Rhet Wilson, 116 Meeting Street, Charleston, SC 29401, (803) 724-3784.
Spineless Wonders: Sea Squirts
by Fred James

This new column will be a regular feature devoted to my experiences with spineless creatures, otherwise known as invertebrates. It is important to realize that at least 99% of all the animals in the world are invertebrates! I have chosen to write about our distant relatives, sea squirts, in this opening column. If you have any comments or suggestions on what other "spineless wonders" you would like to see in this column, please let me know.

Sea squirts are animals that have been classified as Chordates but have recently been put in their own phylum by some invertebrate zoologists. No matter how you classify them, they are closely related to us. They vary in size from microscopic to several inches. They are solitary or colonial. Sea squirts are very common and any floating dock or pier will have them attached. I have been very successful keeping them in a saltwater aquarium.

Sea Squirts are filter feeders with an incumbent siphon that brings food in and an excurrent siphon that eliminates waste products (a good spot for an anus.) Their feeding activities can easily be demonstrated by using carmine granules to watch the flow of water through the sea squirt. You might try putting a light on them to see if they are sensitive to light. They are called sea squirts since they discharge water through their excurrent siphon when irritated. If you pick them up and squeeze them, they make great water pistols. They are also called ascidians which means little bag (of water!)

Sea squirts have been classified as members of the Phylum Chordata and subphylum Urochordata (Greek: oura = tail, + Latin: chorda = cord, + ata = characterized by) since the larval stage is a free-swimming larva called a tadpole larva. The adult is sessile and is covered by a remarkable non-living tunic (thus also called tunicates) which contains "cellulose." Thus, one of the ways we use to separate plants from animals does not hold true for sea squirts. In fact, in 1958, D.A. Hall and others reported on finding cellulose in human skin. Hall states "The discovery of cellulose in man’s skin recalls similar structures in the tunic of ascidians. Cellulose is more common in the aged, which may indicate a return to a primitive condition." Being a botanist by training I find this a fascinating possibility!

In the next column I will discuss a spineless creature that has teeth in its anus. That should give you something to chew on between now and then!

Dr. Fred James is a Biology professor at Presbyterian College, Clinton, SC 29325. Suggestions for future "Spineless Wonders" columns can be made in writing or call Fred at (803) 833-8402.

Illustration by Scott Kennedy
Educators SEAsoned at Conference

SCMEA's 2nd Annual Conference, "Seasoning Your Curriculum," rescheduled from its fall date due to the hurricane, was held May 4-6, 1990 at the Marine Resources Center at Fort Johnson near Charleston. The 110 participants began arriving Friday evening and had an opportunity to socialize during a welcoming reception at the Marine Center. Concurrent sessions began the next morning at 9:00 and included field excursions on the research vessel, "Anita," a beach study, and several indoor workshops packed full of useful information and activities. A fortifying lunch was followed by an inspiring keynote address on aquariums presented by Jim Lanier, Director of the North Carolina Aquarium at Fort Fisher. Jim's presentation provided insights into the tremendous educational impacts of aquariums and served to heighten our excitement for the aquarium planned for South Carolina. A SCMEA business meeting also followed lunch. New officers were elected (current officers are listed elsewhere in this newsletter), bylaws were adopted, and accomplishments since SCMEA's formation in the fall of 1988 were reviewed. The winner of the newsletter name contest was also announced. Despite the efforts of some individuals to "stuff" the contest box (individuals not to be disclosed), the name "Seascraps," submitted by Julie Cliff, received the most votes by conference participants. Julie was awarded a watercolor print for her winning contribution. The business meeting was adjourned and participants dispersed to afternoon field studies and workshops. Meanwhile, Doris Akers and other staff members of the Marine Center, were busy in the kitchen preparing a huge pot of Beaufort stew, later to be consumed down to the last morsel of shrimp. A morning boat excursion, an Aquatic WILD workshop, and a self-guided tour of Francis Beidler Audubon Sanctuary topped off the conference activities on Sunday morning. In summary, the good planning, excellent location, variety of quality workshops and field studies, and the beautifully prepared food, all combined to make this an exceptional conference, one that was well worth the wait.

"The A B Seas of Marine Education"

3rd Annual SCMEA Conference!

October 26-28, 1990

Hilton Head, SC

Come meet with marine educators from across the state for a weekend and learn how to set your classroom in motion . . . with the ocean! The South Carolina Marine Educators Association's third annual conference, "The A B Seas of Marine Education", will be held October 26-28 on Hilton Head Island. With the James M. Waddell Mariculture Research and Development Center, the Coastal Zone Education Center, and the beach in close proximity to the conference facility, field trip opportunities are fantastic, not to mention the opportunity to participate in exciting sessions offering hands-on activities to take back to your classroom. A new addition to this year's conference will be an auction of marine education items, including curriculum guides, posters and t-shirts. Who knows what else might wash up!

Information on how to make lodging arrangements is included in the conference brochure enclosed in this newsletter. Our last conference was nearly filled to capacity, so it is important that you send your registration form to Audrey Garland at Coastal Carolina College as soon as possible. If you need more information or additional conference brochures, please call Paula Keener at 762-5012 or Cammie Camp at 795-6350. Hope to see you in October!
Beach Sweep/River Sweep

September 15, 1990

Beach Sweep is back with a new, enlarged agenda. This year, the S.C. Marine Extension Program (SCMEP) and South Carolina Sea Grant Consortium is teaming up with the South Carolina Water Resources Commission and South Carolina Clean and Beautiful for a combined cleanup of the state’s inland and coastal waterways on Saturday, September 15. Beach Sweep/River Sweep is calling on all marine educators to join with their students in adopting a stretch of beach or a section of lake or riverbank.

Beach Sweep/River Sweep will be the largest one-day cleanup in South Carolina’s history, and will demonstrate the interconnection of our state’s waterways.

"Sweepers" will even go one step further—they will recycle what materials can be most easily recycled in their local communities. As in past years, volunteers on the beaches will also record the trash they collect on special data cards to be sent to the national marine debris database in Washington, D.C.

Beach Sweep/River Sweep offers multidisciplinary, hands-on learning. Marine educators are urged to sign up as zone captains and lead their students in participating. For more information about Beach Sweep, contact:

Virginia Beach
S.C. Sea Grant Consortium
287 Meeting St.
Charleston, SC 29401
(803) 727-2078.

For more information on River Sweep, contact:

Karen Smith
S.C. Water Resources Commission
1201 Main St., Suite 1100
Columbia, SC 29201
(803) 737-0800.

New Marine Camp a Success

Marine Science Camp, sponsored by the Clemson Cooperative Extension Service and 4-H, has quickly become one of the most popular summer programs for South Carolina’s youth. During July 8-13, 216 young people, ages 9-12, from across the state attended the marine camp in Cherry Grove. This was the second year for the camp and demand far exceeded the number of children who could be accommodated. Campers participated in a variety of activities covering a wide range of marine topics including: beach and marsh ecology, water quality and safety, recreational fishing, fish conservation, and marine crafts. They also participated in a guided boat tour of the adjacent estuary. Clemson 4-H personnel and volunteers provided the instruction during the week. Personnel with the South Carolina Wildlife and Marine Resources Department and the South Carolina Coastal Council also assisted with planning and instruction for the camp. For more information about this successful program, contact:

Beth Day
Clemson Extension Service
PO Box 1005
Conway, SC 29526
(803) 248-2267

The South Carolina Earth Science Resource Mobilization Project

A unique partnership has formed between the University of South Carolina, the South Carolina State Geologist’s Office, the Mining Association of South Carolina, and the South Carolina Earth Science Teachers’ Association. This partnership has two primary goals. First, it intends to identify, mobilize, and where necessary, develop teaching resources within the state which will serve to strengthen the teaching of the earth sciences at all levels. Second, the partnership will select and prepare a cadre of 15 Earth Science Teacher Resource Agents (ESTRAs) who will be primarily responsible for distributing these materials to their peers. The program is funded by a grant from the National Science Foundation and contributions from the partners.

This three-year project is divided into a large number of smaller projects which deal with individual aspects of the collection and distribution of resources. One of these projects involves the production of a directory of resources listing as many different resources as possible. This directory will include such things as guest speakers, books, field trip locations, software, maps, sample collections, laboratory equipment, tours and as many other items as can be found. Eventually, the directory will be available to all science teachers, but at the moment science teachers are being asked to help create it. If you know about any science teaching resources which you feel should be included in this directory, please contact:

Phil Astwood
Center for Science Education
University of South Carolina
Columbia, SC 29208
777-6920
Resource News

Three new slide programs on the environment are available from the South Carolina Marine Extension Program and Sea Grant for your community, church or school group: "CLEANING UP OUR ACT" explains the effects of garbage on the environment and how we can reduce, reuse and recycle what we normally throw away; "OUR VALUABLE WETLAND RESOURCES" describes the various types of wetlands in South Carolina and how man has impacted them; "HOW TO PLANT A DUNE" instructs viewers about how sand dunes are formed and how to stabilize them by planting native beach grasses. Each program includes a 20-minute slide presentation with script and accompanying information you can use at home and in your community. All programs can be borrowed without charge for presentation by a group leader or a SCMEP or Sea Grant staff person. Call or write now to schedule a presentation:

Beth Day
SCMEP
PO Box 1005
Conway, SC 29526
248-2267

or

Virginia Beach or Joelyn Swan
S.C. Sea Grant Consortium
287 Meeting St.
Charleston, SC 29401
(803) 727-2078

(The Bellefield Nature Center and several educational centers around the state have been supplied with a complimentary copy of CLEANING UP OUR ACT, thanks to a generous donation from the S.C. Wildlife Federation.)

Overwhelmed by garbage issues? RECYCLE, SOUTH CAROLINA! is a new, 28-page illustrated guide that lays out the facts about recycling, degradability and how South Carolinians can reduce waste and pull valuable resources out of the garbage heap. Published by the Governor's Office, S.C. Clean and Beautiful, S.C. Department of Health and S.C. Sea Grant, the publication outlines a step-by-step process for research and development of a recycling project. The book also includes a county-by-county guide to projects and materials recycled in your area and a comprehensive directory of suppliers of recycled products and available resources. To order a free copy of RECYCLE, SOUTH CAROLINA!, call 1-800-851-8899 or write:

The Governor's Office
Division of Energy, Agriculture and Natural Resources
1205 Pendleton St.
Columbia, SC 29201.

Continuing Education Opportunities

Graduate course, "Geology of Teachers" taught by Dr. Mike Catuna, College of Charleston, Aug. 22 - Nov. 20 (Weds.), 4:15-7:00pm. Cost $290. For information call:

Paula Forham
792-5613

And, of course, "The A B Seas of Marine Education," SCMEA's 3rd Annual Conference, Oct. 26-28, will be a wonderful learning opportunity! (See description elsewhere in this newsletter)
Become a Member of the
South Carolina Marine Educators Association

and join a group of dedicated teachers, naturalists, scientists and others interested in studying and teaching about the world of water, both fresh and salt. The Association provides a communication network for members to share information and ideas through newsletters and an annual statewide conference. Membership dues are $5.00 a year and include three newsletters, a discount on the registration fee for the annual conference, and an opportunity to interact with some of the most dynamic educators in the state!

Date: ______________________

Name ______________________

Home Address ______________________

Occupation ______________________

Place of Employment ______________________

Work Address ______________________

Home Phone Number ______________________

Work Phone Number ______________________

Are you currently a member of the National Marine Educators Association (NMEA)? ______yes ______no

Please send completed form with the $5.00 membership fee (make checks payable to SCMEA) to:

Phil Astwood, Secretary-Treasurer, SCMEA
Center for Science Education, University of South Carolina, Columbia, SC 29208

Join NMEA . . .

... and begin to network with educators around the country sharing a common love and concern for our water world. Membership benefits include a subscription to Current: The Journal of Marine Education; the newsletter, NMEA News; and registration discounts for some the best annual conferences you'll ever attend!

Name: ______________________

Address: ______________________

Occupation or Title: ______________________

(Street or PO Box) __________ (City) __________ (State) __________ (Zip) __________

Individual Memberships

___ Student - $15
___ Active, 1 year - $25
___ Active, 2 years - $48
___ Active, 3 years - $68

___ Associate - $40
___ Sustaining - $100 or more
___ Life - $300 or more
___ Patron - $500 or more

Institutional Memberships

___ Affiliate (includes libraries) - $35
___ Corporate - $250 or more

Are you currently a member of a regional chapter? ______yes ______no. If yes, which one? ______________________

Please make check payable to NMEA and mail to: National Marine Educators Association, PO Box 51215, Pacific Grove, CA 93950.