WHEN I SAY "JELLYFISH," I'LL bet all of you think you know what I'm talking about. Those of you who live in the saline portion of our tidewater region find jellyfish a depressing reality every summer, bringing an end -- or at least an interruption -- to swimming just when the Chesapeake area is at its most hot and humid. Most of us are sad to see them arrive early each summer, but they are nonetheless part of the passing scene in this great Bay.

References to one jellyfish, the "sea nettle," go far back in the Chesapeake literature. The Maryland Gazette of about 1755 reported a man who'd gone out on the Rappahannock flats and been stung to death by "sea nettles." One presumes it was either an anaphylactic shock reaction (such as some of us have to bee-sting venom) or that the poor guy panicked and drowned. Robert Barrie, cruising to Solomons Island in July of 1899, swam off Drum Point and was painfully stung, an incident he recalls vividly in his log.

But that's all I'll say for now about sea nettles, because there are at least a half dozen other kinds of jellyfish that one is liable to encounter in the Chesapeake Bay. Jellyfish occur at all times of year, and I've always found watching for them a fun way to bellwether the passing of the seasons.

In January or February of some years the careful, discerning eye can find the tiny medusae of *Nemopsis bachei* (which some taxonomists call *Bougainvillia*). They please me because they come just when the water's warm enough to go swimming. I'm sure the small animal plankton don't welcome this event like I do, because *Nemopsis*’s tiny tentacles are very efficient capturing devices. Fortunately, they are harmless to even the most sensitive human skin. *Nemopsis*’s tour of duty in the Bay is brief, and I usually see them for several weeks and then they are gone for another year.

As our boating season begins, the observant nighttime sailor will note bursts of bluish light in the prop-wash -- ample signal that some other jellyfish friends have arrived in numbers. These are the so-called "comb jellies," or ctenophores, biologically a very different group of organisms from the medusae discussed above. They use a different strategy for capturing food -- adhesive groups of sticky cells called colloblasts, rather than stinging cells ranged on tentacles. In Chesapeake Bay monitoring programs, scientists associate abundant ctenophores with sharp reductions in the numbers of tiny animal plankton in the water column.

The ctenophore we notice most at night is *Mnemiopsis leidyi*, which is brilliantly luminescent when disturbed or damaged, as in a boat wake, or even when we bump into one while swimming. I always feel comfortable swimming when there

Continued on page 7

* YEAR END APPEAL *

See Page 7
SHARK COPROLITES

Originally thought to be fossilized fir cones, shark coprolites (petrified dung) were discovered to be of animal origin early in the nineteenth century when a certain Mr. Konig of the British Museum noted a most peculiar smell, unlike any to be found in the plant kingdom, when he applied hydrochloric acid to the fossil.

A Miocene shark, like its modern counterpart, possessed a primitive digestive system. Its intestine was a short, cigar-shaped tube. Had there not been located inside the tube a strange, twisted membrane called a spiral valve, food would have swept through it with little chance of digestive action. The spiral valve served to increase the area of absorptive tissue and to slow the passage of food through the hindgut. Composed of a cellular tissue called epithelium, it assumed, with many variations, two basic shapes: a coiled cork-screw twist and a scroll-like roll. In more primitive sharks, like the sand and the spiny dogfish, it resembled a spiraling staircase or a series of elongated trumpets. The more complex mako and hammerhead have spiral valves possessing the rolls and folds of an antique scroll. Unabsorbed waste material passing through a spiral valve was molded to its particular form. When voided and eventually fossilized, a coprolite retained the characteristic bands and folds produced by its passage through the valvular intestine. An oval pellet deeply banded or grooved at one end is the product of a coiled valve, while the scroll-type valve produced a more elongated, rolled coprolite.

An enterospira is an internal cast of a valvular intestine. Rarely found, it is intriguing evidence of the morphological relationship that exists between fossil and modern-day sharks.

Solomons-Built Yacht Returns Home

Nearly sixty years ago -- in 1928 -- the cutter Windward was designed by Philip L. Rhodes and built by the M. M. Davis and Son shipyard. For fifty-seven years she was a member of the Gibson Island Yacht Squadron, an unusually long period, if not a record. Now, this thirty-five foot yacht has been returned to Solomons to become a member of the fleet of Bay craft owned by the Calvert Marine Museum. The Windward was donated to CMM by the Port Tobacco Seaport, Inc., through the kindness of its president, Dr. Raymond H. Hartjen, who had received the yacht by donation several years ago and had begun her restoration.

The yacht is an excellent example of the craftsmanship of M. M. Davis and Son during the period that Clarence E. Davis was converting the shipyard from commercial vessels to one-design pleasure craft. Although the Windward is not seaworthy at present, a large percentage of her exterior yellow pine planking -- notable for extending the full length of the vessel without butt ends -- is still intact, and the cabin woodwork has never been replaced, nor has most of the original hardware. Only the deck has been fiberglassed in the past few years. The vessel is not on exhibit at the present time.

(Contributed by Geoffrey Footner)
**MUSEUM NEWS . . . . . . AND NOTES**

**New Faces at CMM**

A new member has been added to the CMM Board of Governors to fill an unexpired term. F. Ross Holland, Jr., who lives in Silver Spring, Maryland, formerly served as historian with the National Park Service before joining the project for the restoration of the Statue of Liberty and Ellis Island where he was director of preservation. He is a member of the National Task Force for Maritime Preservation; a member of NOAA’s USS Monitor Advisory Committee; founder and president of the National Foundation for Maritime Preservation; author of America’s Lighthouses as well as contributor on “Chesapeake Bay Lighthouses” to the *Bugeye Times*; and supporter of the museum and its programs.

The CMS position of Director of Development became vacant this summer with the resignation of Jennifer D’Elia who worked so successfully to complete the National Endowment for the Humanities’ Challenge Grant. Appointed to that position, after a careful review of candidates, has been Kay Klatt Musial, a veteran of government service, including work with the staff of the U.S. Senate Small Business Committee and as a top aide to a cabinet member. Kay holds a degree in business and management from the University of Maryland, and has had experience that will help CMM move forward in raising funds for the exhibits needed for the new exhibition building and for other programs to support museum activities.

Supporting Kay -- and responding to the Calvert Marine Society's membership drive -- is Deann F. Lesemann, who joined CMM in early spring as Membership/Development Secretary. Deann has had extensive experience to prepare her for working with our members and CMS records, and has served with the museum in a volunteer capacity in the past.

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**Progress Report on New Exhibition Building**

It was a wet spring and a hot summer, but work continued on the museum’s new exhibition building. Not as fast as hoped, but still with noticeable results, as can be seen in the accompanying photograph. The “noticeable results” were in the form of the masonry walls, clearly defining the shape and size of the building. Later in the construction process these masonry walls will be covered with vertical board and batten siding, giving the appearance of a frame building.

Other progress on the site has included much of the work for the stormwater management system, preliminary to the grading and installation of parking areas and paved walks. It had been expected, however, that by this date the new building would have been under roof, but delays in the delivery of the structural timbers held this back. With timbers now on the site, work will move forward with the framing, so visitors this fall may see what will appear to be -- from the outside -- a completed building.

As reported in earlier issues of the *Bugeye Times*, the present construction contract covers only the completion of the exterior shell of the building, along with most of the grading and paving on the grounds. Funds are in hand for the completion of the interior work -- but not including exhibits -- and planning is moving forward to go out for bids for this next contract phase. If bidding can be advertised soon, it may be possible to proceed with the next phase with only a minimal delay, providing the possibility of a completed building by next summer.

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**Famed Marine Artist Donates Prints to CMM**

Marine artist John P. MacLeod undertook last year to document the restored Solomons-built *Little Jennie*. Built in 1884 by James T. Marsh, the *Little Jennie* has been extensively restored by William Townsend Perks who sailed her in the Op Sail parade in New York in July 1986 and later that month brought her to Solomons for a courtesy visit, as described in the summer and fall 1986 issues of the *Bugeye Times*. Mr. MacLeod’s depiction of “Little Jennie Bugeye Coming Home to Solomons” is the third in his Bay series, the earlier two being “The Pride of Baltimore Passing Cedar Point” and “The Schooner Alexandria at Smith Point.” He has also done numerous waterfowl paintings and prints.

“Little Jennie” has been produced in a limited-edition print of 950 copies signed and numbered by the artist. Two hundred prints have been donated to CMM for its sale; three hundred have been donated to Operation Little Jennie; and 450 have been retained by the artist. Prints, which have an image size of nineteen and a half by twenty-eight inches, will be available at CMM early in October for sale at $125 each. Sales tax, postage, and handling will be extra. For further details, call CMM on (301) 326-2042.

Both CMM and Operation Little Jennie are deeply indebted to the generosity of John MacLeod for the donation of these prints which, when sold, will provide significant support for both groups.
Volunteer Julie Nisonger helps youngsters make silkscreen crabs while Curator of Education Liz Cornell demonstrates gyotaku, or fish printing. In classes at CMM, Calvert County outdoor education, and 4-H environmental camps, almost one thousand students learned about fish anatomy and gyotaku.

CMM photo by Joseph Mears

Southern Maryland Maritime Industries student Benjamin Dickerson displays the design he created with fish rubbings (gyotaku) and silkscreened crabs, plus freehand drawings, with the help of artist-in-residence Hollistaire Kuehnle.

CMM photo by Joseph Mears

MARCH–AUGUST 1987

Hollistaire Kuehnle, local author/illustrator and artist-in-residence for the Southern Maryland Maritime Industries project, reads from her original book Log of the Yancy Mallow which was created for this summer’s classes. This was the third year that the Town Creek Foundation has supported this project and CMM has already received the funds for 1988.

CMM photo by Joseph Mears

Classroom teacher Cindy Parouty had “hands-on” experience during University of Maryland graduate course MEES 498M “Field and Laboratory Techniques in Marine Science Education” this past June. The course and the Maryland meeting of the Mid-Atlantic Marine Education Association were sponsored by two SEARCH member institutions — the Chesapeake Biological Laboratory and CMM. CMM’s Curator of Education Liz Cornell organized and directed both projects.

CMM photo by Elizabeth Cornell

Layne Bergin presents discovery bags for examination by “Young Salts,” ages four through six, at CMM.

CMM photo by Elizabeth Cornell
SHOWCASE OF

MUSEUM ACTIVITIES

AT CMM

Dennis Pogue of Jefferson Patterson Park and
Museum, presents first place senior division science
fair winner Michael Younkers with his SEARCH cer-
tificate of recognition plus savings bond for “Are
Our Buffers Too Small?” Representatives from each
SEARCH member institution participated in the
judging, including CMM Curator of Education Liz
Cornell. The junior division winner was Kevin
Caparatto for “Sewage Treatment Plants and the En-
vironment.” Also, CMM awarded certificates and
prizes to encourage estuarine studies by young per-
sons. Winners for 1987 included: Michael Younkers,
first place, senior division; Dawn Mask, second
place, senior division, “Acid Rain and Rock Fish”; Kevin Caparatto, first place, junior division; Chris
Perrygo, second place, junior division, “Great Salt
Bay”; Haedeh Yazdani, third place, junior division,
“The Limiting Nutrients of Phytoplankton”; Stephen
Forrester, honorable mention, junior division, “Do
Non-Phosphate Detergents Really Help the Bay?”;
and Jerry Kramer, honorable mention, junior divi-
sion, “Stream Health.”

CMM photo by Elizabeth Cornell

Long-term interpreter, volunteer, and instructor
Dick Roming teaching marlinespike seamanship.
He will help visitors in making seasonal decorations
and holiday gifts during a winter craft workshop in
November (see calendar).

CMM photo by Elizabeth Cornell

MEES 498M student John Doherty examines
cysters dredged aboard the R.V. Aquarius. Students
were able to interact with CBL faculty and to use
research equipment to take scientific samples from
the Patuxent River and Chesapeake Bay.

CMM photo by Elizabeth Cornell

Southern Maryland Maritime Industries' participants
examine fish: Adam Wehr and Wake D'Ela.

CMM photo by Joseph Mears

Mike Long, Peter Wilson, and Adam Wehr try their hands at using scientific equipment aboard the Wm. B. Ten-
nison: microscope and deep-well slides, Secchi disk, forel-ule color scale, benthiic grab, trawl net, Van Dorn
style water sample bottle, plankton net, filters, and identification guides. Hollisheir Kuehnle and Curator of
Education Liz Cornell assist these Southern Maryland Maritime Industries students.

CMM photo by Joseph Mears
WHALE FOSSIL ADDED TO CMM COLLECTIONS

Last April, amateur fossil collectors Debbie Vaill and Sidney Welles found parts of a whale skeleton in the Calvert Cliffs near Port Republic. After getting advice on removing the bones from the Cliffs without breaking them, and learning about techniques of hardening the bones while preparing them, Debbie and Sidney began the slow process of collecting the skeleton. By mid-July they had collected a good portion of the backbone (twenty-two vertebrae), numerous ribs, and lots of bones from both flippers. At that point their excavation was about three feet into the cliff side.

Since the paleontology exhibit in the new CMM building calls for several mounted skeletons, CMM personnel watched the progress of this "dig" with great interest. Examination of some of the remains showed that the skeleton was of a cetothere, a member of an extinct family of small baleen or toothless whales. (Baleen whales strain mouthfuls of water to remove small animals for food.) The presence of so many bones and many of the small flipper bones hinted that an entire skeleton might be present.

When the back end of the skull appeared at the back of the excavation, CMM staff and volunteers joined Debbie and Sidney at the site. By the time the six-foot long skull was collected -- running straight back into the cliff and requiring a nine-foot deep hole to remove it -- thirteen volunteers and five staff members had worked seven days on the job. Two hundred and fifty pounds of plaster, thirty yards of burlap and a supporting framework of two by fours were all transported to the site by borrowed boat in order to wrap the skull and keep the fragile material together. When it came time to flip the massive plaster jacket containing the wrapped and twined skull, eight people were unable to turn it and move it into another boat volunteered by the Scientists Cliffs community. This was finally accomplished with the engineering expertise of Mark Switzer, a crew from Scientists Cliffs, and a chain hoist. When the boat and skull finally arrived at shore, the boat was loaded onto a trailer, and skull, boat, and trailer were transported to the museum and left -- too heavy to lift off!

Cetotheres are common finds at Calvert Cliffs, although complete skulls are rare and partial skeletons even rarer. Approximately ten species of cetothere are known from Calvert Cliffs (at least fifty-nine are

Continued on page 7

HELP!

As construction on the new building progresses, CMM staff members are busy planning the new exhibits to be installed therein. The new building will contain separate areas for new permanent exhibits on each of CMM's three themes: paleontology, estuarine biology, and maritime history. The largest of the three exhibits will be devoted to maritime history and it is expected to be the first completed. Thanks to a grant from the National Endowment for the Humanities, plans for the maritime history exhibit are well underway.

The planning process has revealed several gaps in the collection and we are hoping that museum members will once again forage through their attics, garages, basements, and photo albums for the items listed below. Please spread the word to family and friends as well. Should you run across any of these items and wish to donate them, please contact Paula Johnson at the museum (326-2042). We will be most grateful for your help!

- trophies, photographs, flags
- trophies, ribbons, memorabilia
- World War II era uniform and helmet worn at Amphibious Training Base in Solomons
- World War II uniform and helmet worn at Patuxent Naval Air Station
- World War II era photographs of the Patuxent River and Solomons (including USO club)
- trophies, photographs, flags from yacht races or celebrations held on the Patuxent
- tobacco prize (one that is set up vertically)
- anything from the Isaac Solomon cannery: oyster can, photograph, etc.
- Weems Steamboat Company memorabilia
- wooden boxes used for shipping freight via steamboat
- pre-World War II artifacts, photographs from Solomons
- pre-World War II uniform and helmet worn at Patuxent Naval Air Station
- trophies, photographs from Solomons
- hogshead (used for shipping tobacco)
- tobacco prize (one that is set up vertically)
- anything from the Isaac Solomon cannery: oyster can, photograph, etc.
- Weems Steamboat Company memorabilia
- wooden boxes used for shipping freight via steamboat
- pre-World War II artifacts, photographs from Solomons
- World War II uniform and helmet worn at Amphibious Training Base in Solomons
- World War II uniform and helmet worn at Patuxent Naval Air Station
- World War II era photographs of the Patuxent River and Solomons (including USO club)
- trophies, ribbons, memorabilia
- power boat races
- trophies, photographs, flags from yacht races or celebrations held on the Patuxent

Illustrations on page 7 from Life in the Chesapeake Bay by Alice Jane Lippson and Robert L. Lippson. Reprinted by permission.

JELLYFISH ... Continued from page 1

are lots of Mnemiopsis in the water because they are a favorite food item for our most unpleasant jellyfish denizen, the sea nettle Chrysaora quinquecirrha. When there are lots of ctenophores around, you can be pretty sure the jellyfish aren't there yet. A hungry nettle's been known to polish off five Mnemiopsis in an hour!

We've said enough about sea nettles earlier in the article, except that in some summers, when we get an unusual amount of rain, they will abruptly disappear and we can swim again without fear in the Bay. Under such circumstances, you'll often see the Mnemiopsis, unburdened temporarily by predator pressure, resurge in numbers. Poor Mnemiopsis: they never get away with the good life for long because, in September, another ctenophore, Beroe ovata, begins working up the Bay, and a prime item in its diet is (you guessed it) Mnemiopsis! There was an interesting scientific paper (with accompanying photos) a few years ago where Beroe was shown feeding on Mnemiopsis, but only biting off one of the two big body lobes, so the prey organism could regenerate and someday be subject to being a meal again! The literati among you may remember such a reference in Voltaire's "Candide."

In late summer, biological systems in the Chesapeake begin to wind down. Freshwater run-off may have been low during the summer, and salinity increases as saltier water moves north from the lower Bay. September, and saltier water, usually brings me another bellwether, another jellyfish, this time the big "moon jellies," Aurelia aurita, with their characteristic four-lobed central pattern, superimposed on a fleshy transparent disk, often a foot or more (thirty centimeters) in diameter. Aurelia, for me, signals autumn and the point at which the Chesapeake's seasonal cycle begins to turn again.

Watch the Chesapeake yourself as the year rolls by. Get to know the differences among these soft-bodied Bay inhabitants and, with all the problems "nettles" cause us, appreciate the interrelationships among these six very different, very similar life forms. You'll enjoy the Bay more for taking the time.

WHALE FOSSIL ... Continued from page 6

known worldwide. Much research needs to be done with this group, for many species are poorly known and many species undoubtedly will be discovered.

The new fossil whale is close in size to the largest cetothere found so far from Calvert Cliffs. (The specimen will need to be cleaned to determine whether it is larger than the current record holder collected in 1929 and 1931.) The earlier specimen was estimated to be at least twenty-two feet in length, so our new one would be about that size. When eight people could not lift the skull, it was hard to believe that this was a small whale by modern standards. The modern blue whale, by contrast, reaches one hundred feet in length, whereas the most common cetothere from Calvert Cliffs is estimated to be a mere fourteen feet in length.

It is hoped that enough of the skeleton has been recovered to construct a free-standing mount for exhibit. Unfortunately, the tail vertebrae did not show up, and the lower jaws were not definitely seen, but the latter may be under the skull. Museum staff are now hunting for a porpoise skeleton to keep the cetothere company in the new exhibit.

(Contributed by David Bohaska)

THE YEAR-END APPEAL --
A CHANCE TO ENRICH CMM COLLECTIONS AND PROGRAMS

Again this year in early October all members of the Calvert Marine Society and other supporters of the museum will receive a letter asking for donations to the CMM Year-End Appeal. There have been so many new developments at CMM in 1987 -- most notably the construction of the new exhibition building -- that there is a greater-than-ever need for funds beyond those planned to meet the daily operational and capital demands of the museum. Too often there are opportunities to enrich the collections or programs that could not be foreseen, and funds raised during the annual Year-End Appeal provide the means of seizing these special opportunities, as well as to meet otherwise unbudgeted costs for conservation, education, publications, research, and so forth.

• A year-end gift is an unrestricted donation to be used at the discretion of the museum for programmatic needs and unforeseen opportunities.
• A year-end gift is tax deductible as provided by law.
• A year-end gift is not a capital gift nor a gift to the endowment fund.

A YEAR-END GIFT IS NOT A MEMBERSHIP FEE, NOR DOES IT BRING PERSONAL BENEFITS TO THE GIVER OTHER THAN RECOGNITION. IT DOES BENEFIT THE GIVER BY KEEPING THE MUSEUM A CENTER FOR ENRICHMENT AND ENJOYMENT.

1986 YEAR-END GIVING
241 gifts, $10,542
* 1987 *
* YEAR-END GIVING GOAL *
400 gifts, $15,000

1987 YEAR-END GIVING
241 gifts, $10,542
* 1987 *
* YEAR-END GIVING GOAL *
400 gifts, $15,000
VOLUNTEER SPOTLIGHT
Margaret Moran and the Museum Store

"If it's Wednesday afternoon, it's Mrs. Moran."
This familiar scheduling refrain has been heard often since Margaret Graham Moran first became a CMM volunteer in 1977. That was the same year as her retirement from the Chesapeake Biological Laboratory with seventeen years of service as secretary to the director. Admits Margaret, "I successfully managed not to learn any biology while I was there." For the past ten years, that fact has not prevented Margaret Moran from becoming one of the nicest members of the volunteer staff and, according to manager Dee Danzig, one of the most faithful of the museum store volunteers.

Establishing Wednesday afternoon as her time slot, Margaret remembers in the early days there was no store cash register and everyone had to keep lists of what was sold each day. She recalls books on fossils and maritime history, along with jewelry, as being the best-sellers over the years. Her motives in volunteering had included getting out and meeting people and an interest in the cause of the museum.

Members interested in more information on this exotic trip opportunity should call Layne Bergin at the museum. Space is limited to fourteen passengers.

Margaret says she has enjoyed talking with visitors from all over the world and values her contacts with the nice people on the CMM staff.

With a clear understanding of her weekly duties, Margaret easily notes her first duty as: "sell stuff and take the cash for it." Other museum store activities are keeping the stock in order, helping with price marking, counting the number of daily visitors, and trying to answer questions about the museum and the community. On a personal level, Margaret generously volunteers her home's attractive grounds and beach for picnics and fossil field trips.

Margaret would encourage any potential volunteer who enjoys meeting people and contributing to the community to give the museum store a try. Every day is different. And, she adds, "It's not that hard a job."

Margaret Moran earned her place on the five-thousand-hour plaque in 1985. Does she plan to keep on with the volunteering? "It's gotten to be part of my schedule," says the Wednesday afternoon lady.

Members interested in more information on this exotic trip opportunity should call Layne Bergin at the museum. Space is limited to fourteen passengers.

At present, specific costs cannot be determined, but the trip, including group air fare from BWI, is not expected to exceed $2,800 per person.