Walking along the beaches below Calvert Cliffs, one cannot help but notice the sedimentary layers containing hundreds of thousands of chalky white seashells. Remarkably, the fossils that are exposed represent only the tiniest sliver of the total number that is packed in layers extending inland for hundreds of square miles! Calvert County, St. Mary’s County, and beyond is underlain by trillions of fossils.

Among the fossils along Calvert Cliffs, some of the most remarkable are those that show pathology — animals that lived in spite of injuries or disease. Prehistoric pathologies are sometimes recorded as scars or deformities in the fossilized hard parts, such as seashells or bones. The study of fossilized pathologies (the field of paleopathology) provides evidence that, just like living organisms, extinct critters were also endowed with a powerful instinctive will to continue to exist in the face of adversity.

Splintered Shells...

You do not have to collect prehistoric seashells from Calvert Cliffs long before noticing individuals with pathologies, such as those in the Geoduck clam and the Chesapeake scallop seen in Figure 2 on page 6. Originally, their shells were partially broken either deliberately by an unsuccessful predator, or as a result of the vicissitudes of being tumbled about in the churning waters of a prehistoric hurricane.

Compression Fracture...

The fossilized remains of extinct whales and dolphins comprise the vast majority of bones that erode from Calvert Cliffs. Some of these bones show evidence of healing following a trauma, fracture, infection, disease, etc.

One of the best examples of healing following trauma is a single, relatively small whale vertebra from Calvert Cliffs (Figure 3 on page 6). X-ray images reveal the animal suffered a compression fracture of the type that can occur when an animal’s spine is bent violently too much. Trauma of this magnitude may have come from an impact with a giant white shark, *Carcharodon megalodon*, when it ambushed the small whale, or the whale may have experienced powerful muscle spasms induced by toxic shock. In spite of the severity of the fracture, the spunky animal survived, mending its shattered back to make the best of a dire situation.

I have called this principle, by which, each slight variation, if useful, is preserved, by the term of Natural Selection.

(Charles Darwin, *The Origin of Species*)
Cradle of Invasion: Yesterday, Today, and Tomorrow

This August we will host the ninth celebration of Cradle of Invasion. In the past, the focus has been on the amphibious training base that was established in Solomons to meet the urgent demands of World War II, and the battles fought throughout Europe and the Pacific by the marines and soldiers who trained there. This year we are expanding the focus of the three-day event to highlight the military’s involvement in, and impact on, Southern Maryland from WW II to the present, and into the future.

The event will offer an encampment that compares WW II-era marines with how enlisted men on overseas assignments live today. There will be an amphibious landing exercise, as well as modern equipment from NAVAL R on display. Key military contractors including BAE, Booze Allen Hamilton, Northrop Grumman, Lockheed Martin, Innovative Solutions, and Boeing will have state-of-the-art displays and demonstrations to show the public the cutting edge research and development they are involved in.

We are very excited about the new direction this event is taking, and encourage you to mark your calendars for August 6 to 8. For information, check our web site or call Sherry Reid at 410-326-2042, ext. 19. 📅

SUMMER STAFF CHANGES

There are a number of staff changes this summer, many of a temporary or seasonal nature. Marvin L. Coon is the mate on the Wm. B. Tennison; Lemuel Thomas is the weekend custodian; Vivian Aldridge will serve on the admissions desk as needed; Jennifer Pitts is the assistant registrar in the maritime history department; Traci Cimini, an assistant in the development department; Jennifer Gerholdt is a research intern in the paleontology department; and Neena Williams is a seasonal intern in the estuarine biology department.

The education department has a number of new faces, both permanent and seasonal. Ned Johnson and JoAnn Kery are new part time interpreters. Ned replaced Pat Murphy and JoAnn is replacing Sue Hamilton who is transitioning to volunteer status after sixteen years in education. Seasonal help includes Sarah Murray, a museum studies student from Radford College here as the education summer intern; Clare McClean, a student from St. Mary’s College doing a short internship to develop an activities book for the Discovery Room; and Julianna Kuhn and Kelly McCune, two high school students hired as summer camp aides. 🔴

USVMYG Traditional Watercraft Regatta Returns to Solomons

The weekend of September 22 to 24 will once again see Back Creek transformed as a grand flotilla representing the great sailing vessels of bygone days graces its waters. As in the past few years, the regatta, sponsored by the U. S. Vintage Model Yacht Group in cooperation with the Solomons Island Model Boat Club, will draw model-boat builders from across the country and will offer visitors the opportunity to see some of the masters of this honored craft at work — and to see their creations sailing majestically across the water. 🌳

Volunteer Spotlight (Continued from page 8)

The Group Achievement Award went to the Skate and Ray Exhibit volunteers. The volunteers in this group are very knowledgeable, dedicated, and are always ready and willing to share their knowledge with our visitors. Members include: Vivian Aldridge, Andrew Barr, Debbie Carlson, Harry Childers, Linda Densmore, Dan Grosso, Anne Harrison, Mary Hefflebower, Peggy Hovermale, Sue Hu, Dawn Jones, Jane Kostenko, Ed Kotzen, Rose Nelson, Denita Sanders, Judy Sherman, Margaret Stamper, Doris Sweet, and Don Sweeten. A cruise on the Wm. B. Tennison is in their future for receiving the award, and a beautiful plaque has already been placed in the Skate and Ray Exhibit area for all to view.

Congratulations and thank you to all our volunteers who prove time and time again just how great our volunteer family really is and how important it is to the continuing success of the museum. 🔴
2005 Volunteers of the Year
Darryl Hansen and Anne Harrison

On Thursday, May 18, 2006, Darryl Hansen and Anne Harrison were presented with the 2005 Volunteers of the Year award. Both Darryl and Anne seemed surprised by the recognition but it could not have been given to two more deserving volunteers. They both bring a wealth of talent and commitment to the museum.

From September through December 2005 Darryl volunteered as the interim volunteer coordinator, keeping that program up and running through a transition period. Always looking for a challenge, he also began working with the Education Department on the Docent Training Program. Darryl completed the training and is already giving docent tours to our visitors. The CHESPAX program is another area to which Darryl devotes a lot of time – teaching seems to fit him extremely well. Always willing to lend a hand, you can count on him to help with anything you need.

Anne, with her irrepressible enthusiasm, spent a considerable amount of her 2005 volunteer time in the museum store. Visitors seem to enjoy their encounter with Anne because she is always cheerful and eager to help them make a selection. Dependable is a word that is often used to describe Anne: not only can you depend on her to report in as promised, but you can depend on a smile and a kind word each time you see her. The Maritime History Department is another area where Anne is dedicating her volunteer time, working on special projects such as the Antique Boat and Marine Engine Show.

The two award winners each received a plaque as well as a piece of jewelry that was graciously donated by Maertens Jewelers.

(See page 8 for more volunteer awards)

YEAR END APPEAL 2005-2006 DONORS
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(See page 8 for more volunteer awards)
Barbara Chaney (right), a trustee of the Eugene Chaney Foundation, presented a check on April 5 to CMM director Doug Alves and deputy director Sherrod Sturrock to sponsor the Solomons Maritime Folklife Festival in May.

CMM photo by Bob Hall

“Vikings” invaded CMM on April 29 when The Longship Company brought its replica small Viking square-sail ship into the boat basin.

CMM photo by Bob Hall

Solomons Maritime Folklife Festival, May 6

This new event drew a large audience of family members for a variety of activities.

Young participants enjoyed the sack race.
CMM photo by Bob Hall

Knot-tying was explained by CMM volunteer John Johnson.
CMM photo by Bob Hall

Model boat building, sponsored by the Patuxent Small Craft Guild.
CMM photo by Bob Hall

Retriever trials in the boat basin were under the direction of Gale Parks (left).
CMM photo by Bob Hall

The festival closed on May 6 with a concert by the U. S. Navy’s Band “Country Current.”
CMM photo by Bob Hall

“Vikings” invaded CMM on April 29 when The Longship Company brought its replica small Viking square-sail ship into the boat basin.
CMM photo by Bob Hall
Chesapeake Antique Boat and Marine Engine Show

This third annual event was part of the weekend of May 6 and 7.

CMM photo by Bob Hall

Waterside Music Series 2006

An enthusiastic audience greeted country singer Trace Adkins at the May 14 concert at CMM on the Washington Gas pavilion.

CMM photo by Bob Hall

DISCOVERY ROOM RE-OPENED

As announced in the spring issue, the renovation of the Discovery Room was completed in time for it to re-open on May 1, and a formal ceremony marking the completion of this work is set for June 16. Two photos from the Discovery Room were shown in the spring issue, and two additional views are shown here. Visitors in the coming months are sure to enjoy the improved features.

Volunteer Margaret Stamper (right) describes the live specimens that are featured in the touch tank, moved into the Discovery Room from the Estuarium.

CMM photo by Bob Hall

The former Discovery Room sandbox, always a favorite with young visitors, is now incorporated into a reconstruction of a Miocene cliff.

CMM photo by Bob Hall
Hard Knock Life

(Continued from page 1)

Arthritis...

As for surviving despite being disease-ridden, one of our best examples is the extinct baleen whale located at the entrance to CMM’s Paleontology Gallery in the exhibit entitled “Isabel’s Gift.” The neck vertebrae of this sleek whale show that it suffered from ankylosing spondylitis, arthritis of the spine that leads to the fusion, or lipping, of adjacent vertebrae. Ankylosing spondylitis affects injured and aging individuals; this condition is often progressive, developing over months and years.

Periostitis...

One of the more intriguing paleopathologies involves five fossilized partial dolphin rostra (upper jaws) from Calvert Cliffs (Figure 4). These curious pathologies are unlike any other fossil from the cliffs, for that matter anywhere else in the paleopathology field. All five rostra are believed to be from the same extinct dolphin species. To date, we have been unable to match these deformed and pathological dolphin snouts with any known fossil species from Calvert Cliffs or elsewhere. We don’t think this is because they are pathological, but rather because they truly represent the remains of an as yet unnamed Miocene dolphin species. The undeformed snout of this type of dolphin would have been more slender and gracile than in any known dolphin fossil from Calvert Cliffs (Figure 1 on page 1).

At this point, we believe these individuals suffered from periostitis, an inflammation affecting the periosteum. The periosteum is a thin layer of membranous tissue that surrounds bone (there are a few exceptions), and inflammation will raise it up off the bone in response to disturbance. New bone will then start to grow beneath the periosteum over the original bone; over time the bone becomes progressively swollen. Cycles of inflammation, separation of the periosteum from the bone, and deposition of new bone beneath can take place repeatedly, resulting in multiple layers of abnormal bone growth. In CAT-scan images, this recurring secondary bone growth looks similar to the concentric layers of a sectioned onion. In these partial snouts, most of the pathological bone is gnarled and swollen to roughly twice the size of the normal bone (Figure 4).

It is logical to conclude that a long and very slender snout is more susceptible to damage than a thicker, heartier one. Skulls of the extant dolphin species with the most slender snout, the La Plata dolphin (Pontoporia blainvillei), have a much higher incidence of snout injuries...
Life should not be a journey to the grave with the intention of arriving safely in an attractive and well preserved body, but rather to skid in sideways, chocolate in one hand, beer in the other, body thoroughly used up, totally worn out and screaming “WOO HOO what a ride!”

(Anonymous)
Volunteer Spotlight
The 2005 Volunteer Recognition Reception

By Sherry Reid, Volunteer Coordinator

What better way to celebrate International Museum Day than to recognize our own volunteer family for their accomplishments for 2005? The evening began with the awards ceremony in the CMM auditorium and moved under the Drum Point Lighthouse for a “good ole Southern Maryland cookout” with all the trimmings. Our “grill master” was an old friend, George “Nicky” Nichols, who did a wonderful job with the hamburgers and hot dogs. As usual, the staff pitched in to make the event very special for our volunteers by helping with the grill, setting up tables, serving food and drink, and helping in the clean up, as well as contributing the wonderful desserts we all enjoyed.

Director Doug Alves did a superb job acting as master of ceremonies. He began by giving us a brief overview of the museum and then thanking the volunteers for helping to make the museum the success it is today. Doug also had the privilege of introducing two of our Calvert County Commissioners, Gerald “Jerry” Clark and Wilson Parran. Both addressed the volunteers to thank them personally and on behalf of the Board of County Commissioners.

The actual awards portion of the program began by presenting certificates to volunteers who recorded 100 hours or more during 2005: Paul Adams, Janet Addiss, Len Addiss, Andrew Barr, Paul Berry, Bill Boxwell, Darlene Brindley, Veronica Caceres, Debbie Carlson, Harry Childers, Linda Densmore, Dan Grosso, Bob Hall, Darryl Hansen, Anne Harrison, Mary Heflebower, Dan Heflebower, Peggy Hovermale, Sue Hu, Dawn Jones, Frank King, Fritz Kleye, Ed Kotzen, Bill Lake, Al Lavish, Zelma Margelos, Buck McClellan, Ilse Metz, Shirley Mihursky, Herb Moore, Gale Parks, Dave Peterson, Bob Platt, Pam Platt, Bill Poffenbarger, Barbara Roberts, Sandy Roberts, Richard Rogers, Marilyn Ruark, Denita Sanders, Joe Showalter, Ruth Showalter, Ellis Seidenstricker, Judy Sherman, Ned Sprague, Margaret Stamper, Florence Strean, Alan Suydam, Nan Suydam, Doris Sweet, Paula Walker, Theodora Watts, Elnora Wease, James Wilson, Sandy Younger, and Tom Younger.

There were several volunteers who have recorded a cumulative total reaching the 1000 hours benchmarks. These volunteers were presented with a certificate, a new name badge that includes a star for each 1000 hours accumulated, and a gift from the museum store. The recipients for the 1000 hours award were Janet Addiss, Bob Platt, and Sandy Younger. Recipients for the 2000 hours award were Dan Grosso and Margaret Stamper. Pam Platt hit a milestone by accumulating 2500 hours. Doris Sweet has become a member of the 3000 hours volunteer group. Ruth Showalter was awarded for entering the 5000 hours volunteer group. Al Lavish hit a milestone by accumulating enough hours to join the 6000 hours group. A new member to the 8000 hours group is Paul Adams. Soon to have a big star for the 10000 hours group on the pace he is volunteering is the newest member of the 9000 hours volunteer group Bill Lake. Believe it or not we have a member for the 20000 hours club (of course at this point he is the only member of the club but I can see him having company before you know it) Paul Berry.

This year new categories were created, and the following volunteers were presented with certificates for their achievements: Yes Volunteer – Darryl Hansen and Shirley Mihursky; Enthusiastic Volunteer – Bill Lake; Service Volunteer – Anne Harrison; Sunshine Volunteer – Sandy Younger; Dependable Volunteer – Bill Lake; Talented Volunteer – Darryl Hansen; Speedy Volunteer – Ellis (“Ski”) Seidenstricker and Paula Walker; Long Term Volunteer – Sandy Roberts; Recruiter – Kay McClellan; Creativity – Tom Younger.

Continued on page 2