THE VIP VOICE

AUGUST-SEPTEMBER 2000
THE NEWSLETTER OF
CABRILLO VOLUNTEERS

Dear Volunteers:

I hope you won't be totally shocked that this copy of the "Voice" is coming out a bit early. There are lots of reasons for this—the most important being the tremendous cooperation of all those folks who wrote articles promptly, put them on discs and got them either to me or to Mary Beth. It's terrific to have Mary Beth, our volunteer coordinator, cracking the whip and everyone came through with flying colors. Thanks, MB.

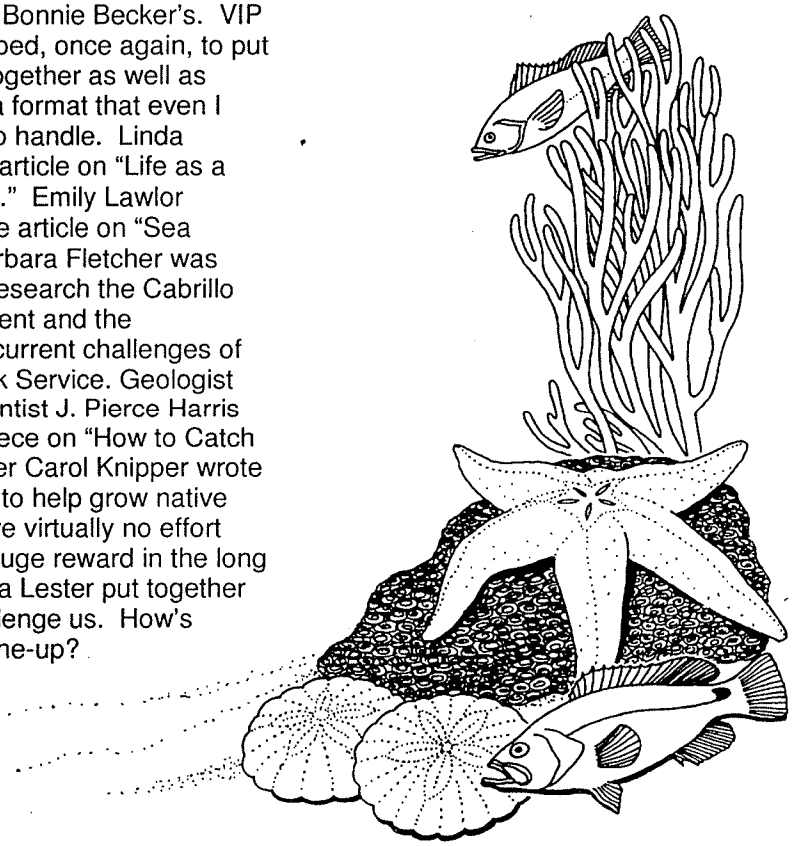
There are many people to thank for this issue of the voice. You're all important and I want to see that credit is given where credit is due. There were the articles we have come to count on in each issue such as Ranger Mary Beth Vygrala's and Marine Biologist Bonnie Becker's. VIP Mike Nelson helped, once again, to put this newsletter together as well as coming up with a format that even I should be able to handle. Linda Masys wrote an article on "Life as a Lighthouse Lady." Emily Lawlor researched a fine article on "Sea Anemones." Barbara Fletcher was kind enough to research the Cabrillo National Monument and the beginnings and current challenges of the National Park Service. Geologist and general scientist J. Pierce Harris put together a piece on "How to Catch a Lizard." Ranger Carol Knipper wrote a piece on ways to help grow native plants that involve virtually no effort and provides a huge reward in the long run. And Ramona Lester put together a puzzle to challenge us. How's that for a great line-up?

As the saying goes, "It is far more impressive when others discover your good qualities." The happiest part about volunteering at Cabrillo National Monument, besides the feeling that you can help the ecosystem you love, is that there are so many folks with good qualities who don't brag about them.

I hope you will join in the spirit and write an article about your special interest(s) for the "VIP Voice." We have gotten many, many comments about the quality of a newsletter that is basically written BY the people for whom it is written.

Thank you all for everything you do.

Lynn Moss



IN THIS ISSUE

SEA ANEMONES
by Emily Lawlor

Sea Anemones.
You see them everywhere in our Cabrillo tidepools. They are often mistaken for plants or "squishy shells." I am sure you have amazed numerous people when they find out that the squishy carpet is actually alive. As you will see, they are even more than that. These seemingly simple creatures are more complex than one would imagine. I have compiled some interesting facts on the aggregated anemone that I hope will be of some use to you and will help you make someone's visit even more enhanced.

Aggregated anemones are polyps, which have a flattened foot called a pedal disk that allows them to move by gliding snail-like along the substratum. They have a simple bag-like body called a gastrovascular cavity, which is lined with cilia that allows food, oxygen, and wastes to come in and exit the single opening. The photosynthetic unicellular algae zooxanthellae and zoochlorellae account for their olive green color.

The aggregated anemone possesses tentacles as a means of protection and as a way to catch prey. Each tentacle has a specialized structure, or acrorhagi, which consists of inflated sacs loaded with stinging cells called nematocysts. Each nematocyst contains a coiled, whip-like, barbed filament that is used to pierce the predator or prey. At the top of the nematocyst is a toxin called a cnidocil or tiny hair-like "trigger" that senses pressure and triggers the nematocyst to uncoil and injects the poison into the other animal. Hundreds of stinging cells may be released at once, which serves as a potent weapon against smaller victims. However, when a member of the same clone brushes against an anemone, a chemical called pheromone is released and the tentacles retract. A clone is a group of genetically identical animals living together that were produced by asexual reproduction. A species, on the other hand, are a group of individuals that share a lot of the same genetics and can breed to produce fertile offspring. Some non-stinging cells are also present and aid in holding the prey while the tentacles push the victim into the mouth. Some of their enemies (things that eat them) include flounder, haddock, eels, some sea stars, sea spiders, and nudibranchs. Aggregated anemones have superb digestive enzymes; therefore they eat almost anything and in large amounts; such as fish, shrimp, isopods, amphipods, and plankton.

The aggregated anemone reproduces both sexually as well as asexually. In the summer and fall, both males and females release gametes (reproductive cells) to be fertilized in the water. This results in new combinations of genes in larvae that disperse away from its parents to live in a new territory. If it is successful, once it has matured, and usually between September to March, it reproduces asexually by longitudinal fission (division into new organisms) or budding (offspring form from an outgrowth of the parent's body.) This is done several times and, thus, develops a clone group of genetically identical individuals. These anemones have the same color pattern and all the individuals that develop gonads (organ or gland where gametes are produced) are of the same gender. Often times, two clones are formed on the same rock (as is seen in the zone 2 area) and a distinct line of bare rock called the "war zone" is formed where a constant battle takes place. The bordering anemones of the two clones fight each other, resulting in both of their deaths, causing the line of bare rock in between.

Aggregated anemones exhibit interference competition as they compete with other colonies for space. Anemones on the borders of the clone groups, called "warriors," will aggressively sting non-clonemates with their nematocysts to protect those in its colony. These warriors appear to be smaller and seem to lack gonads. They also tend to possess more fighting tentacles (acrorhagi) than their larger clonemates in the center of the aggregation. Those anemones were named "reproductives" since they possess an abundance of gonads and take on the responsibility of reproduction.

There are five stages in the aggressive behavior of the aggregated anemone according to the experimentation of Frances Lisbeth.
These include: 1) <u>stimulation</u> (irritation), when two anemones repeatedly comeinto contact; 2) <u>inflation</u>, when acrorhagi

become turgid (swollen); 3) movement of application, when acrorhagi push towards source of stimulation; 4) application of ectoderm, damage is inflicted on another anemone; and 5) recovery, when the anemone returns to its normal position.

It has been found that anemones of different clones will always try to stay clear of each other, but when needed, will apply aggression. The aggressive response is said to function as territorial behavior in this species. Each anemone from one clone can be distinctly distinguished from other clones since they have identical color patterns and all are the same gender. They also possess mutual tolerance for each other and no others. Anemones will do anything to maintain their much-needed space. Therefore, when two clones are competing for space on a single rock or, within close proximity, the bordering anemones (warriors) will attack each other and result in both of their deaths since they are unable to escape and will, thus, create an obvious line of bare rock. As you can see, anemones are wonderful creatures. The next time someone asks about those "squishy shells," you can tell them how very alive they really are. I hope that this information has been of some use to you and that it will encourage you to dig deeper. There is a wealth of information at our fingertips. To think that the simple anemone is so complex! And it is only a fragment of the beauty of our sacred tide pools.

{NOTE FROM BONNIE BECKER}

". . . the book 'Life Between the Tides' is wrong when they describe the difference between aggregating anemones (*Anthopluera elegantissma*) and solitary anemones (*Anthopleura xanthogrammica*). The big solitary anemones we have at Cabrillo are actually the same species as the aggregating anemones – they are both *A. elegantissma* (it can grow big and solitary or small and aggregating – but it is still the same species). The picture in the book that says *A. xanthogrammica* is actually *A. elegantissma.* In fact, I don't think we have any *xanthogrammica* in the park. You cannot tell them apart by size – look for radiating lines on the disk. If it has lines, it is *elegantissma.* No lines, it is *xanthogrammica.*

Kingdom:	*Animalia*
Phylum:	*Cnidaria*
Class:	*Anthozoa*
Subclass:	*Zoantharia*
Order:	*Actinaria*
Family:	*Actiniidae*
Genus/Species:	*Anthopleura elegantissima*

References:

- *Animal Behavior,* **51**: 1233-1245 and *American Naturalist,* Vol. 14, No. 3, pp. 427-448; Ayre, David J., and Grosberg, Richard K.
- "Reef Aquariums: Coral Compatibility" from www.aquariumfish.com/library/articles.salt.as7.asp; Delbeek, Charles
- *Biology Bulletin.,***144**: 64-72; Francis, Lisbeth
- Seashore Life of California; Hinton, Sam
- *Science,* **189**: 386-388; Howe, N. R.
- Between Pacific Tides; Rickets, E., Calvin, J., Hedgpeth, J. and Phillips, d.

Hi Dedicated Volunteers!

Hope you are enjoying your summer so far. I'm sure that the tidepool folks are feeling a bit of withdrawal with the lack of good daytime lows to go play in the tidepools. Never fear, we have been out in the early mornings to do some summer research and the tidepools are doing quite well. If you do find yourself out there during a low tide, you might notice some yellow and red scrubbie sponges in the turf. They are not trash. They are being used as artificial turf to attract baby invertebrates for our summer study. We just put them out, and are going to collect them on August 1. I'll tell you about this project and our results in the next VIP Voice.

I'd rather use my space in this issue to tell you about a local marine event that has been in the global news a lot this month. Last spring I wrote an article in "The Explorer" about sargassum weed, an invasive algae we have in our tidepools. In that article, I stated that:

"The plant is not dominating the mid or lower intertidal, and we have yet to observe a serious negative impact from it. Currently, we feel its removal would not be worth the disturbance to native plants. So for now, we have accepted this weed as a temporary resident of our park."

Now San Diego has experienced a new, more dangerous seaweed invasion, this time by *Caulerpa taxifolia*, commonly called "caulerpa."

CAULERPA TAXIFOLIA
Bonnie Becker

Caulerpa was cloned by Europeans in the 1980s for use as a hardy but pretty aquarium plant. In a plotline worthy of a Mary Shelly novel, their creation got out of control. Not surprisingly, caulerpa got loose in the Mediterranean and, after years without management, the plant has spread like a "roll of astroturf". The problem is that the plant can grow very well in many environments, often overgrowing all of the plants and animals living on the bottom of the ocean. If you cut off a very small piece of the plant and let it go in the water, a whole new plant will grow. Therefore, it is extremely easy to spread it through boats, fishing nets, or anything else that travels away from the original patch. It is toxic to many animals, which will not eat it, and without grazing pressure, there is nothing to keep the plant in ecological balance. So in places like France, Spain, Monaco, and Italy, the entire marine ecosystem has gone from having a diversity of plants and animals to having a single one—their coastal zone is covered by a carpet of caulerpa.

In 1999, the US Government banned the possession of caulerpa in this country. But this month, a small patch of the seaweed was found in a lagoon in Carlsbad, presumably from an aquarium that was dumped down a drain. News of the discovery spread around the world quite quickly—this was the first sighting of this devastating algae outside of the Mediterranean.

{Continued on Page 12}

Both photographs (Shot in Mediterranean) by Alexandre Meinesz, University of Nice-Sophia Antipolis

ANNOUNCEMENTS TO ALL VIPs

1. On August 25, 2000, the National Park Service will celebrate its 87th birthday from 10 A.M. until 6 P.M. The Lighthouse tower will be open, an event that happens only twice a year. You won't want to miss it, especially if you have never been to the top of the tower. In the afternoon, there will be a birthday cake in the Visitor Center. Mary Beth needs volunteers to work in the Lighthouse and in the Visitor Center.
2. For those VIPs who volunteer in the tidepools as well as all those who go down when the tide is low enough, please check to make sure that no one is going into the Zone III area (the protected area). It's of special concern to us all that the studies the scientists are undertaking be in a completely undisturbed area. If people trudge through the area, the studies may, in fact, be inaccurate. So we ask that you keep an eye out. Your keen eyes are truly appreciated. Thanks!
3. A few of the rules that we must know when helping visitors enjoy the park:
   a) Stay on the trails for your safety and to protect fragile plants.
   b) Stay back from cliff edges as they are not at all stable.
   c) NOTHING (other than finfish) may be taken or used as bait in the park.
   d) Skate boards, roller blades and skates are prohibited in the park.
   e) Bicycling is allowed on paved roadways only.
   f) No smoking is allowed on the Bayside Trail, near the tidepools or in park buildings.
   g) Swimming, surfing and diving are prohibited within park boundaries (which extend 300 yards from the shore). This protects the intertidal ecosystem.
   h) Fishing is permitted with hook and line only in the tidepool area, in accordance with California state law. Only finfish may be taken and a California fishing license is required and must be worn in plain sight above the waist.
   i) Pets are allowed in the coastal area if they are on a leash that is no more than six feet long. In other parts of the park, they must be confined in a vehicle. Of course, service animals are exempted from this rule.

All this information was taken from an article in the Summer/Fall 2000 issue of the "Cabrillo Journal.")

Rules can be issued in the most pleasant way possible explaining that they are there simply to protect the visitor and/or the ecosystem. It's always nice to hear that a volunteer helped someone understand the rule and clearly cared for our national treasure. The rangers hear that a great deal, and appreciate your tact and concern.

OUR NATIONAL PARK SERVICE
Barbara Fletcher

The Beginnings

The beginnings of the park service go as far back as 1872, when the Yellowstone National Park act set aside the first land for public enjoyment under federal administration. Almost 35 years later, on August 25, 1916, President Woodrow Wilson signed the National Park Service Organic Act, creating the National Park Service to protect both the 40 existing national parks and monuments and those yet to be established. Under the Department of the Interior, the role of the National Park Service is to "...conserve the scenery and natural and historic objects and the wildlife therein and to provide for the enjoyment for the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Growth

In 1933, an Executive order further expanded the system with 63 additional monuments and military sites from the War Department and Forest Service. It was further expanded in 1960, when Congress allocated money for the purchase of lands for the Cape Cod National Seashore. This was the first time that land was bought for use as a park, as opposed to federal lands or donations.

Cabrillo National Monument

Three years before the establishment of the Park Service, Cabrillo National Monument was established by proclamation of President Woodrow Wilson. It commemorates Juan Rodriguez Cabrillo, explorer of California in 1542. There are both historical and natural sites of value. In addition to Cabrillo, the monument also has the Point Loma Lighthouse, built in 1854, and the Fort Rosecrans military fortifications showing the continuing shoreside defense of the city. Natural treasures include the annual migration of gray whales, an extensive tidal pool zone, and coastal scrub ecosystem.

The NPS Today

The National Park System consists of 379 sites of natural, cultural or historical significance. These include 54 National Parks, 73 National Monuments, 77 National Historic Sites, 38 National Historic Monuments, and 28 National Memorials as well as battlefields, lakeshores, military parks, parkways, preserves, recreation areas, reserves, rivers, scenic trails, seashores, and other parks. All of these are accorded equal legal standing under the 1970 General Authorities Act, stating that "...though distinct in character,.. (these sites) are united into one national park system as cumulative expressions of a single national heritage."

Today's Challenges

Despite their protected status, the national park sites face many challenges today in their efforts to preserve precious resources. The sheer number of people visiting take their toll, due to the infrastructure required for food, lodging, automobiles, and the like. Differing concepts of recreational use impact the parks—the debate continues on the appropriateness of snow mobiles, personal watercraft and aircraft on parklands. Designation as a protected site does not insure protection or impact from surrounding areas: air pollution, mining, lumbering, and grazing on adjacent lands have also severely affected the park experience.

Ways to Help

With these challenges facing our parks today, there are still many things an individual can do to help.

1. "Take only pictures, leave only footprints." Minimize your impact on the park by staying on trails, picking up trash, not feeding or bother animals, or collecting souvenirs.
2. Leave your vehicle behind. To the greatest extent possible, use public or lower impact forms of transportation when you enjoy the parks.
3. Stop alien invasions. Be careful not to import non-native plants or wildlife. They can severely impact the very items the park is trying to conserve.

{Continued on Page 12}

PLANT YOUR POINT!
by Carol Knipper,
Chief Ranger
Resource Management
and Visitor Protection

During the past several years, we've been working hard to remove exotic plants and trees from Cabrillo National Monument and the Point Loma Ecological Reserve. Removing these weeds will allow native plants to grow back and create a healthy habitat for the diverse species of native birds, mammals, snakes and lizards that make Point Loma their home. To help speed up this natural process, we need your help! We need you to nurture native plant seedlings to maturity. "Adopting" even a few pots with native plant seeds will make a huge difference in our efforts to restore the natural wonders of Point Loma. It's easy and fun! We will provide you, your family, co-workers and anyone else with pots, soil and native plant seeds. You simply water and watch them grow. Next winter, when these young plants are ready, we will invite everyone out to Cabrillo National Monument and the Point Loma Ecological Reserve to plant them. You will be an important part of your Point. Please call me at (619)523-4563 or e-mail me at carol_knipper@nps.gov and say, "I want to adopt native plants!" We will be happy to give you containers, soil and seeds to get your started. If you would love to help out but don't have a green thumb, you can donate $5 for each plant and we will have it grown for you. You may make your check out to National Park Service and write "Plant Adoption" on the check.

Thanks for your help and taking the time and effort to make Point Loma an even more beautiful place.

MUSINGS FROM
MARY BETH

A big welcome to the following new volunteers! Kimberly Fahlen will be working in interpretation doing talks at the Lighthouse. Genevieve Wolfe is doing costumed interpretation at the Lighthouse. Jacob McLaughlin and Lupe Marquez will both be working at the visitor center and working in interpretation. Michelle Ogden has taken on the task of helping in the library and also doing some intrepretation. Our veteran volunteers might want to pass on some of their wisdom and expertise to our new VIPs.

Speaking of veteran volunteers, the tidepool volunteers will be getting phone calls from both Chris Anderson and me very shortly. Chris wants input into the type of training you want for the fall tidepool training. You can reach Chris at (619) 523-4577. I will be calling all tidepool volunteers to get a verbal commitment for the next tidepool season. Remember the November to March commitment includes a minimum of two shifts per month with three shifts being recommended. If you cannot make the two shifts, then you will need to do three shifts the next month. We don't want Darrel Sims to have to cover all the shifts as much as we love to see his smiling face.

A note from safety committee chairman, Russ Williams:

All tidepool volunteers are reminded to not touch any hazardous materials or waste found in the tidepool area. Also, please advise visitors that they are not to touch hazardous material. Hazardous material items include batteries, explosive devices, medical wastes and fuel containers. These items could possibly injure you or someone else. If you find any of these items in the tidepools or any other area in the park, please notify the Visitor Protection ranger so that he or she can take proper action to dispose of the material in a safe manner.

We have a new member of the interpretation division. Susie Qashu (pronounced cashew) has transferred from Cumberland Islands National Seashore in Georgia as a National Park Service intake trainee. Susie will be an interp park ranger and will be stationed here through July, 2001. Thanks to all the volunteers who gave help and support to find Susie a somewhat affordable place to live. Stop by the library and say "hi" to our new interp.

SPECIAL VIP—
MIKE NELSON

Since I am, and always have been, a "people person," I find that one of the things I most enjoy is meeting the volunteers and writing about them. It goes without saying that these are good people. Volunteers are known to be caring individuals with a purpose in life. My greatest difficulty each month is getting a volunteer to consent to having an article written about him or her. It turns out that volunteers, in general, are not there for the limelight—they quietly go about caring for and unselfishly helping others. Mike Nelson is no exception. It took more than one of us to threaten to tie him down if he didn't cooperate.

Mike grew up in north central Nebraska on a farm with his two brothers and his mom and dad. His folks, who continue to live in Nebraska, celebrated their 50th anniversary last October. In high school, Mike was a member of the Drama Club and the Math Club. After high school, he went to the University of Nebraska, starting as an education major and later changing to computer science. In college, Mike was a member of the Navigators, a Christian organization, and today he is active in the Vineyard Christian Fellowship in El Cajon. He enjoys the other members and thinks it's "a blast."

Beginning in 1973, Mike spent four years in the Air Force at Mt. Laguna (in east county) as a radio repair technician. This gave him his first taste of San Diego, and it must have been a good taste because he is still here. In 1977 he returned to the University of Nebraska for two years at which point he moved back to San Diego. For ten years he found employment at the Walker Scott Department Store working in credit, bookkeeping and accounting. Later he became the Accounting Manager. When they shut their doors, Mike was the very last employee on their payroll.

For the last 8 years, he has worked for Aquanetics Systems as their webmaster, payroll officer, safety officer and their person in charge of product literature. He writes and edits their product brochures and handouts, and seems to love that part of the work at Aquanetics best of all. He also uses his writing and editing skills away from work. For example, I have just finished reading the Summer/Fall 2000 issue of the "Cabrillo Journal," and Mike's article on "The 37th Annual Cabrillo Festival" is wonderfully informative and beautifully written. In the last "Voice," Mike volunteered to format and help edit the edition as well as set up an ongoing format for us.

Mike began coming to the Cabrillo National Monument in 1975 for recreation and because he enjoyed taking pictures. He was interested in the living history involved in the heritage of the park, especially the Lighthouse. He spent time talking with Sandra Turner, a volunteer working in the Lighthouse, and she urged him to become a VIP. It wasn't long before George Herring got Mike even more interested and involved in the living history of the Cabrillo National Monument and the development of Southern California in general and San Diego in particular. In October of 1999, Mike became a VIP thereby truly making a commitment to his avocation. For a fascinating oral history, let Mike tell you how San Diego became a real focus in coming into the Union as a strategic port for ships and trade. According to Mike, the Lighthouse was like a beacon that acted as a "lighted billboard" or stopping point for traders going north up the California coast. He is an enthusiastic storyteller who captivates people regarding things historical in our terrific National

{Continued on Page 12}

LIFE AS A LIGHTHOUSE LADY
by Linda Masys

What fun it is to put on a long 1880s-style Victorian dress and sit in a rocker in the kitchen of Old Point Loma Lighthouse for a few hours each week and greet visitors and tell them a bit about how it was to live at Old Point Loma Lighthouse when it was still a working lighthouse! Since I can't live in a lighthouse right now, this is the next best thing!!

I began my interest in lighthouses when I lived on the Chesapeake Bay in 1991; lighthouses weren't as popular back then as they are now. I started a small collection of lighthouses but my real dream was (and still is!) to live in one. When the opportunity came last year to participate in the living history program at Old Point Loma, I was thrilled. There are several of us ladies who do this, and what started out as a summer project has now turned into a year-round program.

After we ladies get into costume, we set up "housekeeping" in the kitchen of Old Point Loma Lighthouse. We open the big glass viewing door to the kitchen and drape a rope across the doorway, allowing visitors a clear view into the kitchen area while keeping them from touching the antique furnishings. We place the rocking chair by the kitchen stove, put a small side table next to it and often adorn it with a doily and a small container of fresh flowers. We also often put out a plate of apples on another table in the room to give it that homey, lived-in look, and visitors really do notice and some will even ask if we live there! Then we know we're successful in creating the atmosphere we want!! While rocking, we work on a craft like the ladies of the 19th century would have done. I have been crocheting an afghan (one I started about 15 years ago, not a lot of time to work on this except when I'm sitting in the lighthouse) and visitors are always impressed with that handiwork. I'm always glad they can't get a real close look lest they discover my multiple mistakes!

It is very interesting hearing visitors' comments when they enter. Most do not know anyone is sitting in the kitchen so they say whatever is on their minds; some are quite startled to see a live person there and seem to need to confirm to themselves we are neither mannequins nor ghosts! Every comment I have heard has been very positive. I feel like I'm at "Lighthouseland," and this is the happiest place in San Diego! Visitors are most impressed with the way Old Point Loma Lighthouse is furnished and how authentic it looks. Many want to move in right then! Most visitors are very inquisitive about the Israel Family, the last family to live at Old Point Loma when it was still a working lighthouse. For many, this is their first visit to a lighthouse anywhere; others have been to several and think this one is the best. I have to agree! Visitors come from all over our country and many foreign lands. Sometimes, they share stories about lighthouses in their areas. People of all ages seem to enjoy the experience of stepping back to the 1880s during their tour of the house. I am honored to be able to share this bit of history with all our visitors and look forward to each opportunity to sit in Old Point Loma Lighthouse. When I am there, I do feel like it's MY house and when there's a lull between visitors, the peacefulness and quiet do take one back to a much simpler time.

HOW TO CATCH
A LIZARD
By J. Pierce Harris

Do you know how to catch a polar bear? Well, catching lizards is similar. It's done the same way unwanted goods are sold in a supermarket. The impulse products and candy for entrapping kids are located at the check stands or along aisles you have to follow to get to the stuff you really came for. We make aisles that the Cabrillo National Monument's reptiles and amphibians have to follow to get where they want to go.

The aisles consist of a three-arm array of low fabric fences. The fences are about as tall as a table tennis net but each is about 10 meters long. There are three in each array, arranged in the shape of a Mercedes Benz emblem or a peace sign for you '60s' kids. For the tidepool people, they look like a three-armed brittle star. Each arm is about 120 degrees from the other. The arms are, however, rarely straight or exactly 120 degrees apart as we allow them to meander to conform to the terrain and avoid damaging vegetation.

In the center of each array, a five gallon bucket is buried to the rim and two more buckets are buried along each fence arm, one at the end and one about in the middle. In addition, aviary wire cylinders with funnel openings at each end are located next to and parallel to the fence of each arm for catching snakes who should happen by. A lizard or snake, like you in the grocery store, encounters our fence and turns right or left to find a way past and sometimes falls into the bucket or crawls into the wire cylinder where (most of the time) it is trapped until we release it. There are seventeen of these arrays with ten traps each in the Point Loma Ecological Reserve; nine of the arrays (ninety traps) are located at Cabrillo National Monument.

Sampling sessions (trappings) are conducted several times a year. Each session lasts ten days, during which the traps are checked every morning; the animals are identified, weighed, measured and released. During sampling sessions, the bucket trap is shaded with its lid flipped over and resting on three small wooden pegs attached to the lid. The wire snake traps are shaded with cedar shingles. Shade is important because reptiles and amphibians do not control their body temperature the way we do. They can overheat quickly if left in the sun. Two small PVC pipes are placed in each trap to provide trapped animals shelter and protection from weather and predators and damp sponges add moisture. When we are not sampling, the bucket traps are closed with their lids in the normal position and weighted with rocks, and the wire snake traps are dismantled to avoid inadvertently trapping creatures between sessions.

All this is being done to obtain a biological inventory of the Point Loma Ecological Reserve, which includes Cabrillo National Monument. The location of the arrays has been carefully mapped and the data stored so that later studies can be conducted and comparisons made. The results of this inventory will help Dr. Robert Fisher, the Principal Investigator of the study, US Geological Survey, design our long-term ecological monitoring program for reptiles and amphibians. Another thing we've learned is that of the 19 reptile and amphibian species which lived on Point Loma 70 years ago, seven have disappeared.

What do we catch? About five species of lizards, three species of snakes and one amphibian are com-monly caught. In addition, a multitude of invertebrates and mammals end up in the traps. Common invertebrates are beetles, spiders, centipedes and scorpions. Mammals are, for the most part, voles, mice and shrews. Will any of our captives bite? Yes, most will if frightened; however, careful handling and a sharp eye for scorpions keep injuries to a minimum. Occasionally a rattlesnake is caught and the lab at SDSU sends an expert to manage it. The most common bites are from alligator lizards, *Elgaria multi-carinatus,* which have a well-deserved reputation for being aggressive. The most passive of the lizards are the western fence lizards, *Sceloporus occidentalis* and side-blotched lizards, *Uta stansburiana.* How do you tell an alligator lizard from, say, a western fence lizard or a side-blotched? Easy. The alligator lizard will be the one fiercely hanging onto your finger.

RAMONA'S PUZZLE PAGE
with thanks to Ramona Lester

Each of the works in the left hand column can be found in the table of letters. See how many you can check off. Have fun!

AGGREGATE
ALASKA
ANEMONE
BASAL DISC
BODY WALL
BROODING
BROWN
CALIFORNIA
CAMOUFLAGED
CARNIVORES
CLOSED
COLONIES
COLORS
CREVICES
DELICATE
DESICCATION
DIGESTIVE
EDGES
EGGS
EXPAND
ATTACH
EXPOSED
EXTEND
FLOWER
FLOWING
FOOD
GIANT
GRAB
GREEN
HERMIT CRABS
INTERTIDAL
JADE
KILLS
LIVING CARPET
LOW TIDE
MOUTH
NEMATOCYSTS
OCEAN
OPEN
ORAL DISC
ORANGE
PARALYZE
POISON TUBERCLES
PROTECTIVE COVERING
RADIATING STRIPES
RED
ROCKS
SHELLS
SMALL
SMOOTH BOULDERS
SOLITARY
SQUIRTS
STICKY
STOMACH
SUCTION

Unscramble the following:

UOLCORFL
_____

EAS
____

ONSNEAEM
_____

S	E	R	O	V	I	N	R	A	C	E	T	A	G	E	R	G	G	A
A	I	N	R	O	F	I	L	A	C	O	L	O	N	I	E	S	C	E
E	D	A	J	P	S	E	L	C	A	T	N	E	T	S	N	O	A	P
S	E	B	A	R	C	T	I	M	R	E	H	S	R	O	L	O	C	S
T	G	E	D	I	T	W	O	L	O	X	D	E	S	O	P	X	E	T
I	A	N	R	O	C	K	S	M	C	L	S	T	R	I	U	Q	S	S
C	L	S	I	B	O	E	P	L	A	Y	R	D	N	A	P	X	E	Y
K	F	L	F	R	X	F	S	S	U	C	T	I	O	N	S	P	P	C
Y	U	L	L	L	E	N	M	K	Y	F	H	I	F	E	O	X	I	O
T	O	E	O	E	Y	V	O	U	N	D	E	R	W	A	T	E	R	T
E	M	H	W	W	T	B	O	D	Y	W	A	L	L	I	K	A	T	A
P	A	S	I	A	E	I	T	C	R	B	O	A	N	J	N	Y	S	M
R	C	J	N	S	S	R	H	M	E	X	R	T	L	G	P	Q	G	E
A	M	G	G	O	M	M	B	W	T	V	E	X	E	A	K	R	N	N
C	S	I	D	L	A	R	O	P	Z	R	I	X	T	C	S	O	I	E
G	R	A	B	I	L	C	U	U	T	T	Y	T	T	M	H	K	T	Z
N	S	N	D	T	L	O	L	I	T	I	X	S	C	E	J	F	A	Y
I	E	T	Y	A	M	U	D	M	L	H	G	R	E	E	N	A	I	L
V	T	X	N	R	N	A	E	C	O	O	L	O	N	G	T	D	D	A
I	A	P	T	Y	L	S	R	D	O	Y	P	B	C	G	D	O	A	R
L	C	L	O	S	E	D	S	E	P	L	H	E	P	S	M	E	R	A
K	I	L	L	S	E	L	C	R	E	B	U	T	N	O	S	I	O	P
P	L	O	H	C	A	T	T	A	E	N	O	M	E	N	A	B	O	D
A	E	V	I	T	S	E	G	I	D	T	G	N	I	D	O	O	R	B
D	E	S	I	C	C	A	T	I	O	N	S	E	C	I	V	E	R	C
R	L	T	N	C	S	I	D	L	A	S	A	B	R	O	W	N	E	C

OUR NATIONAL PARK SERVICE
Continued

4. Volunteer! There are many avenues for actively helping the parks from trail clearing, interpretive work, administrative aids, and much more.
5. Vote. Urge your candidates and elected officials to protect the parks.

With care today, our children and grandchildren will have our National Parks to cherish and enjoy for years to come.

CAULERPA TAXIFOLIA
Continued

People snapped into action immediately. The area has been blocked off, treated with chlorine, and the plant is being carefully removed. All reports indicate that the removal is proceeding successfully and the immediate threat is gone.

But the consequences of a possible caulerpa invasion are so great that we cannot ignore the long-term threat of another invasion. This event was a wake-up call for San Diego county and, in some sense, for the world. Our coastal habitats, already weakened by various human activities over the past century, are left vulnerable to invasions. The dumping of a single fish tank could have caused the destruction of the coastal zone that we all love, depend on, and work so hard to protect. Education, such as the interpretation you do in our tidepools and visitor center every year, is our best defense against such a catastrophe. I cannot stress enough how important your work is, and what a difference you make. Thank you, thank you, thank you.

Obviously, we would like you to keep your eye out for caulerpa in our tidepools. It is a bright green plant (bright like Ulva, the sea lettuce) that looks like feathers growing off of stems and runners. If you see something that you think is this plant, DO NOT REMOVE IT. Call a ranger and ask them to call me. If you are interested, you can contact me for more info about this algae. You can also check out how serious this is online (an article in CNN):
http://www.cnn.com/2000/NATURE/07/07/invader.algae.reut/index.html

Hope all is well and I look forward to seeing you again!

Cheers,
Bonnie

SPECIAL VIP—
MIKE NELSON
Continued

Monument. He currently works the desk on Sundays, helps George Herring with the website and is often resident photographer. He claims not to be "a people person;" however, that's not really the case. For example, once I saw him take the crossbow and Spanish helmets down to demonstrate them to two children and their dad. Their eyes lit up as he showed them how to prepare the crossbow for firing and let them put the helmets on before they simulated firing the bow. The kids left saying, "That was so-o-o-o-o cool!" and their father was equally impressed. How better to interest the young and old alike than through person-to-person contact?

To a new volunteer, Mike would simply say, "come for the fun!" He believes the "...park gives us the ability to link our past with our future," and feels that by knowing and understanding our past we can live better in the present and prepare for our future.

As a personal philosophy, he says he "has done a lot and seen a lot, and character is what it's all about." Mike thinks if you work on the kind of person you want to be, you will be able to do anything. It seems terribly obvious to me that Mike Nelson is the kind of person anyone would enjoy knowing and being with, and if he literally can't do everything, there's certainly not much he can't do. Cabrillo National Monument is fortunate to have Mike Nelson as a person who both comes to the park as his "refuge" and to help. If you don't already know him, make a point to meet him. You'll be glad you did.