The Mouseion

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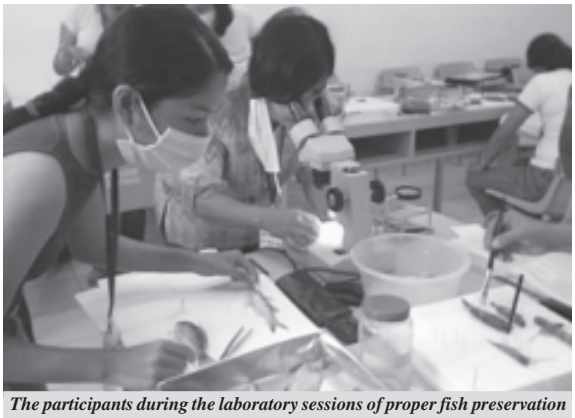
UPV-MNS joins Taxo Workshop

by S. S. Santander



The participants during the laboratory sessions of proper fish preservation and accurate identification.

The UPV Museum of Natural Sciences joined the "Fish Taxonomy Workshop" organized by UPV Ocean Biolab headed by Dr. Wilfredo Campos last Dec 4-8, 2006 at the Graduate and Continuing Education Building, University of the Philippines in the Visayas, Iloilo City Campus.

During the five-day workshop, fish taxonomy experts presented their researches regarding the revisions on taxonomic nomenclature of some finfishes that includes the genus *Inegocia*, the *Leiognathus gerroides* complex, the threadfins (Perciformes: Polynemidae), and the eel-tail catfish genus *Plotosus*. Feeding guilds, food and feeding habits, and biodiversity and conservation values of seagrass fish species were also featured. Added to these are papers on ocean sunfishes, mudskipper, Napoleon wrass, reef fish diversity, including the fish reference collection of LIPI-Bitung, Indonesia.

The Fishworld SEAFDEC AQD and UPV-MNS were also visited in the said workshop in order to expose the participants to the local fish museum. Practical side of the workshop was applied during a trip to a fish landing in Banate, Iloilo. The fish gathered from the said activity were used for the laboratory sessions of the workshop. In the laboratory session, the participating scientists from the different universities of Japan, Indonesia, Malaysia, Thailand, Vietnam, and Philippines shared their knowledge on the techniques of preserving the collected specimens. A lecture and actual demonstration of fish photography were also made.

The workshop that was sponsored by the Japan Society for the Promotion of Science (JSPS) was attended by the Faculty and researchers from the UPV College of Arts and Sciences, Division of Biological Sciences and the College of Fisheries and Ocean Sciences, SEAFDEC-AQD and BFAR VI. Ms. Soledad S. Garibay and Ms. Sheryll S. Santander of the UPV-MNS were among those who participated in the workshop.

The knowledge gained from the workshop will surely help the participants in their taxonomic works especially at the office of the museum.

PH 8325 back to the wild

A slightly injured "pawikan" was turned over to UPV-CFOS by Brgy. Captain, Fernando Libo-on after it was accidentally hooked to the long-line of a local fisherman last November 12, 2006 at Brgy. Tabunacan, Miagao, Iloilo.

Known as the green sea turtle and scientifically identified as *Chelonia mydas,* "Pawikan" is considered endangered under the Convention of International Trade of Endangered Species of Wild Fauna and Flora (CITES) Red List 2000.

After a collaborative effort with the Department of Environment and Natural Resources Region VI representatives, Mr. Christopher L. Lastica and Ms. Llane A. Orate, the endangered turtle was released to the wild in the afternoon of November 13, 2006. The turtle was tagged as PH 8325.

Coral Reefs: Our living Treasures

by S. S. Santander

The Philippine archipelago, consisting of 7,100 islands is one of the most megadiverse countries in terms of marine organisms such as corals. However, this living treasure is also one of the most highly threatened. With the hope of educating the public of this fact, UPV-MNS featured an exhibit titled, "Coral Reefs: our living treasures", last August 22 to September 8, 2006, at the Museum lobby.

The exhibit featured posters on coral and coral reef biology plus the reef coverage here in the country. The exhibit also included Film shows of "Muro-ami" and "Finding Nemo" and a documentary film titled, "Philippine Coral Reefs: Resource at Risks". The display of coral biological samples from the museum collection plus some samples from UPV Taklong Marine Biological Station and CFOS- Institute of Marine Fisheries and Oceanology completed the exhibit on coral reefs.

This museum activity had served as an alternate class to various courses in the university.

ON FOCUS...

Snaggletooth

A visitor from the deep

Cornelio M. Selorio, Jr., MS Ocean Science

The Philippine water is considered as the center of the center of biodiversity. Thousands of organisms can be observed in its various habitats such as the seagrass and coral reef ecosystems. But beyond the depths of our waters lies another diverse population, the deep water fishes.

Deep water fishes do not stay to the ocean floors their entire lives. Strong current or their feeding behaviors make these organisms visit the surface. The strong current of Iloilo Strait is capable of this transport of deep water fishes to the surface and is also responsible for the occurrence of the strange looking fishes in the local catch.

Among the members of this deep water population is the Snaggletooth, *Astronesthes lucifer.* As the name suggest, this organism bears a long caniniform teeth, just like the fangs of a dog. The teeth is comb-like and slanting backward and protrudes beyond the head. Its body is black with silvery shin with the presence of photophores. These photophores are used to mimic other deep-sea organisms bearing photophores, either to escape from the predators or to attract its prey. This creature conceals its form by adapting to its dark environment. Snaggletooth is often collected together with sergestids or small shrimps. It usually goes with the sergestids to protect themselves from the hungry mouth of devouring predators.

Snaggletooth lives within the benthopelagic to mesopelagic zone of the ocean. Mesopelagic zone is the boundary of photic (an area of the ocean, where light is present) and aphotic zones (area of the ocean where light is absent). As migratory species, snaggletooth is an intermediate organism in the food web linking photic zones and aphotic zones' energy flow.

The appearance of a large number of snaggletooth on the surface indicates an absence or low population of the predator that usually feeds on them. This condition also shows an imbalance in the system.

Snaggletooth is not a well studied creature. Commonly they are discarded, if collected. Its monstrous appearance probably led to a very low commercial market value here in the Philippines. Perhaps studying the biology of this fish may help us understand its role in the ecosystem. Furthermore, its utilization will be known and discards will be lessened.

Snaggletooth may not be commercially important but we cannot discount the fact that it still plays a big role in the ecosystem. Snaggletooth remains as the intermediate linkage of the energy flow between the photic and aphotic zone.

Taklong Gets a Check-up

Victor Marco Emmanuel N. Ferriols, BS Fisheries III

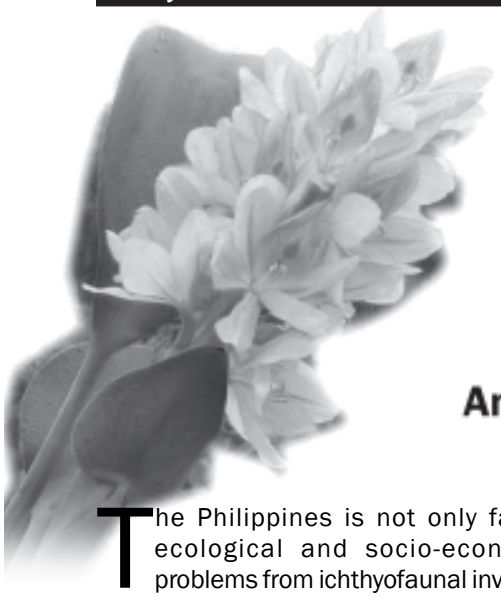
Roughly a few months after the MT Solar I sank off the coast of Guimaras resulting to one of the most devastating oil spills in Philippine history, Taklong Island still receives regular check-up from several BS Fisheries and BS Biology students along with other researchers and faculty members from UPV. As part of their respective classes, the students go on field trips to conduct several surveys ranging from ecological assessments to geographical plotting of affected sites.

Based on their observations, habitats such as the reefs, the sea grass beds and the mangrove forests were doing fairly well although it was quite evident that some of the sites in Taklong still bore the scars of the oil spill. This just goes to show how fragile such areas are. Despite several clean-ups (conducted by other UP students as well) and several months of natural healing, it would still take many more months (probably years) before the ravages of the oil spill totally disappear. This would mean that constant check-ups would be practical in order to determine the full extent of the effects of the oil spill.

The oil-contaminated mangrove area of Taklong Island, Guimaras

The University's role in the MT Solar I disaster does not simply end with the clean-ups. As an academic institution dedicated to research and conservation, the University continually monitors the conditions near and around Taklong Island. With efforts such as this, knowledge is not only gained on the long-term effects of the oil spill but on the natural healing processes of the environment as well. We become witnesses to both the destructive nature of man and the resiliency of the natural world.

This makes clear one basic yet constantly overlooked truth: our role as the stewards and protectors of our natural environment. With disasters such as this, we are harshly reminded of our duty to safeguard our environment not only for today, but more importantly for the future. The MT Solar I catastrophe was painful wake-up call. Let us not allow ourselves to slip back into the dreams of complacency and neglect.



WORLD'S WORST WATER WEED, Eichhornia crassipes:

An Invader Poorly Documented in Philippine Wetlands

Marianne Hubilla, UPV-CFOS and Ferenc Kis, PENRO-Agusan del Sur

The Philippines is not only facing ecological and socio-economic problems from ichthyofaunal invasion but also from floral invasion in its freshwater habitats. Invasive water weeds, like the water hyacinth, *Eichhornia crassipes* from South America has become naturalized in many tropical and sub-tropical areas worldwide, such as Africa, North and Central America, Australia, New Zealand, India, China and the Philippines.

The water hyacinth is a member of Family Pontederiaceae, a group of pickerelweed comprised of 35 known species belonging to seven genera. It varies in size from one-fourth of a meter to over a meter in height. It can be introduced sexually by seeds and asexually by budding and stolen production. This floating aquatic herb has spongy stems, green leaf blades, purple-blue flowers, capsulated fruits, and fibrous roots linking to the dangling roots of other plants to form a dense clump. The water hyacinth is known to be the "world's worst water weed" because of its ability to cover an entire waterways in a flash, causing water loss and boat traffic on rivers and lakes.

In the Philippines, the water hyacinth is commonly found in wetland areas like swamps, rivers, lakes and marshes. There are three major wetland areas of international importance in the country that are currently infested with water hyacinth. These are the Candaba Swamp in Central Luzon, the Agusan Marsh in Northeastern Mindanao, and the Liguasan Marsh in Southern Mindanao. The growing demand for water hyacinth in residential ponds and water gardening might have led to the importation of water hyacinth from other countries. However, the actual course of its spread in the three wetland areas is poorly documented and less attention has been given to this species by the aquatic and environmental sectors in the country. To initiate solutions for the problem, the best approach is to discuss the impacts of invasion and recommend possible mitigating measures to eliminate water hyacinth in Philippine wetlands.

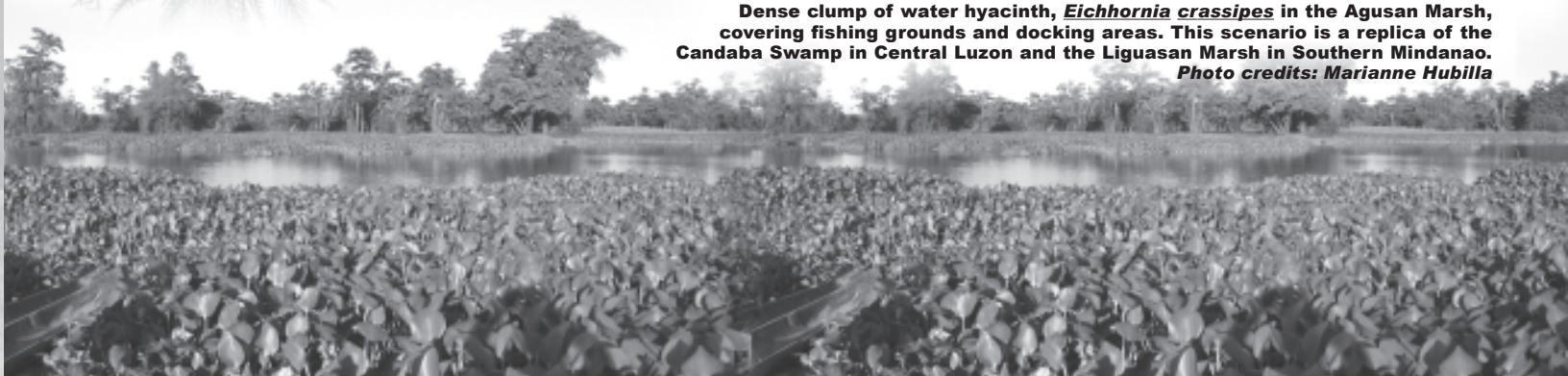
Ecological impacts

When a water hyacinth is introduced in freshwaters, it grows and produces young plants. This plant thrive in nutrient-enriched waters, and they multiply rapidly until they reach their maximum biomass. Wind movements and water currents contribute to their clumping and wide distribution. This then become a habitat for insects, invertebrates, aquatic reptiles and amphibians. However, the benefits it can give to these faunal groups are outshined by its serious ecological impacts.

The water hyacinth serves as a microhabitat for a variety of disease-carrying organisms such as snails, mosquitoes, fungi, bacteria and worms that are detrimental to humans and lower vertebrates. Examples of these diseases are schistosomiasis, dengue and typhoid fever, malaria, diarrhea and lymphatic filariasis. Since water hyacinth is a prolific herb, it can imbalance the aquatic ecosystem by inhabiting a large space and displacing the native floral species. Water loss is also attributed to their overcrowded population and resource competition among individual plants. On the other hand, the dense clump of water hyacinth reduces sunlight penetration, which slows down photosynthesis and lowers the oxygen content in water. This would eventually reduce the supply of food and decrease the number of local species. Thus, the water hyacinth can cause biodiversity loss and water quality deterioration.

Socio-economic impacts

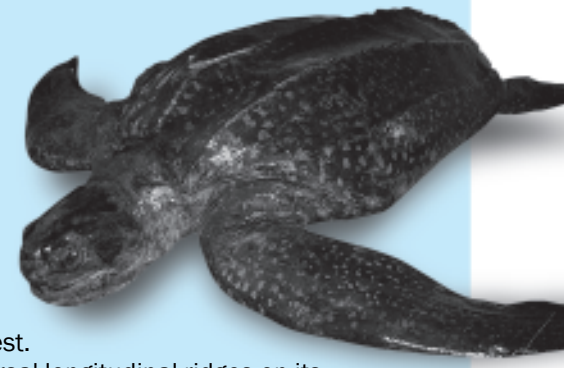
Water hyacinth can cause a variety of socio-economic problems. It becomes a nuisance to fishermen and transportation vessels because it clogs up waterways and blocks entrances to docking areas. It also covers fishing grounds, which affects the livelihood of inland fishermen. Aside from this, the water hyacinth has negative impacts on the water supply, hydroelectric and irrigation systems by sipping a large amount of water and causing water loss. Furthermore, in agricultural areas where the water hyacinth is introduced, it competes with crops for soil nutrients, resulting to the reduction in yield. All of these are severe problems for consumers – humans and other organisms. (*see Water weed...page 4)*



Dense clump of water hyacinth, *Eichhornia crassipes* in the Agusan Marsh, covering fishing grounds and docking areas. This scenario is a replica of the Candaba Swamp in Central Luzon and the Liguasan Marsh in Southern Mindanao.
Photo credits: Marianne Hubilla

UPV-MNS preserves a huge Leatherback Turtle

by S. S. Garibay



Last October 20, 2006, Mr. Denric Sadiasa, a representative of the Municipality of Malay, Aklan came to UPV-MNS to request for the stuffing of an approximately 500-kg, dead Leatherback Turtle. This is the first challenge to the museum to accept stuffing services for a huge turtle carcass.

For the purpose of preserving the turtle, which is the largest and one of the most endangered among the marine sea turtle species, the Museum accepted the request. The Leatherback Turtle can be distinguished among all sea turtles because of its dorsal longitudinal ridges on its carapace. Aside from this goal of preserving the turtle, the Museum also aims to expand its collaboration with other agencies and also to generate income.

Mr. Leonardo Mooc, a museum Administrative Aide who has training on taxidermy of big fishes, handled the stuffing procedure. Taxidermy is not an easy task. It is the art of mounting or reproducing animals for display or study that involves several steps to complete. This is a practice generally done with vertebrates but occasionally with invertebrates such as insects. Several modern methods had already been applied in some museums nowadays. The UPV-MNS method for the taxidermy Leatherback was based on the steps used in stuffing big fishes.

The duration of the procedures would depend on the size of the specimen to stuff. In this case, the stuffing of the Leatherback Turtle which measures 4.6 ft. was completed in a month and a half time, including the drying of the specimen.

The Leatherback Turtle is now housed at the office of the Municipality of Malay, Aklan after it was displayed at the Museum Lobby, Ground Floor, Library Building, UPV Miagao, Iloilo.

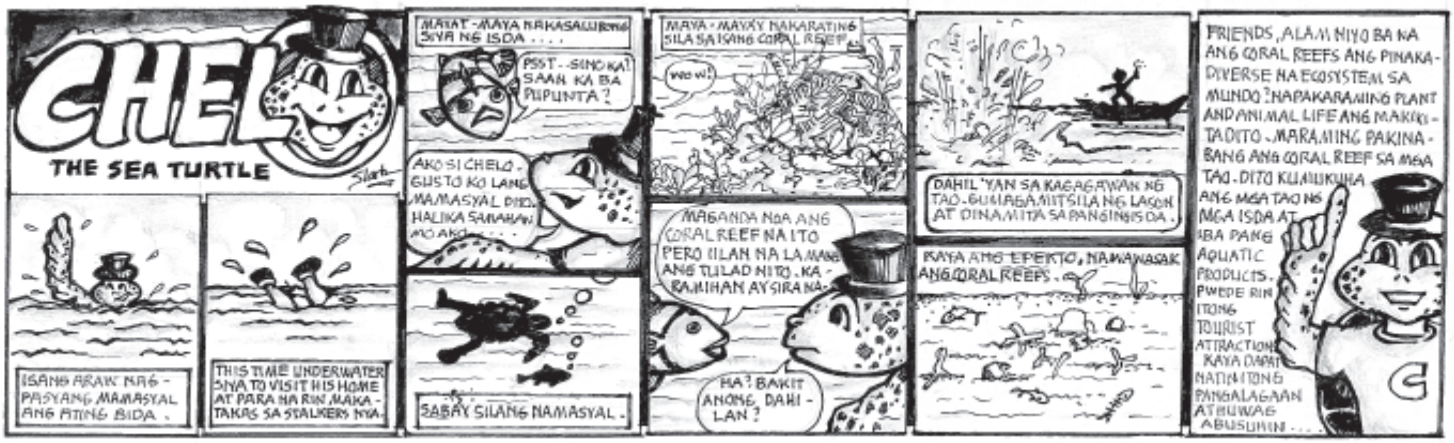
Water weed... *from page 3*

Possible control mechanisms

There are three known mechanisms of controlling the spread of the water hyacinth. These are physical, chemical and biological control. Physical control is the mechanical way of removing water hyacinth. It can be by hands and blade or with the aid of costly machinery like barges, dredgers and mowers. However, this mechanism is only a short-term remedy for solving the problem because it cannot cope up with very wide invasions. Chemical control or the use of herbicides is another way of eliminating water hyacinth. Most herbicides have unknown effects on human health and the environment, so its use is not highly recommended. Biological control or the use of water hyacinth's natural enemies, like insects and fungi, is the most highly recommended among the three control mechanisms. However, initiating biological control is a long process. Insects and fungi production to combat water hyacinth would take several years to produce, and this is probably the downside of this long-term remedy.

The best solution

Perhaps, the best way to effectively eliminate water hyacinth in Philippine wetlands without spending a fortune is to turn it into a useful weed. Water hyacinth has a high protein and energy content. In fact, it can be a potential ingredient for animal feeds. Its fibrous tissue in dry form can be used as raw materials for paper and fiber board production and in ropes, mats and baskets fabrication. Water hyacinth in decay form can be used as fertilizer. It is also popularly used in sewage treatment and water purification. These useful applications are potential livelihood for wetland communities infested with water hyacinth. Using these practical technologies would not only save the Philippine wetlands from biological pollution, but also provides livelihood opportunities for wetland inhabitants.



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