

ELEMENTARY SCIENCE SECTION

A VISIT TO THE MANILA AQUARIUM

By SILVINO V. EPISTOLA *

ONE of the most interesting places in Manila, or perhaps in the Philippines, is the Aquarium. It is located in a corner of the Old Wall near Calle General Luna within the bastion of the Real Gate of the old Walled City. An aquarium, you know, is a place where living fishes are on display in glass tanks filled with water.

Recently I went to the Aquarium and spent a very delightful morning visiting this well-kept museum. As I entered through an opening in the Old Wall I was thrilled. Every square foot of this place is of great historic interest. Cannon balls have whizzed over this very wall. Soldiers—Spanish, British, American, and Filipino—at different times have fought for its possession. What interesting scenes, what terrible deeds have been enacted in the shadow of these walls!

Such thoughts filled my mind as I looked at some of the old machinery on display at the entrance of the Aquarium. This machinery was used to raise and lower drawbridge gates at two of the en-

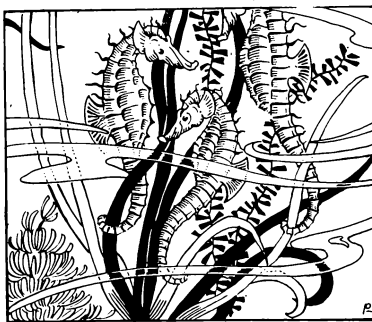
trances of the Old Wall. There, before my very eyes, was the windlass of the Real (Royal) Gate drawbridge. There is also the windlass of the Parian Gate drawbridge, and nearby are two of the posts of the drawbridge of the Real Gate. If those crude machines could speak, what stories they might tell of the wonderful processions of governors, army officers, government officials, bishops, and

priests, who have passed by those posts and windlasses.

I gladly paid my ten centavos for an admission card and entered the Aquarium through the turnstile. In front of me was one of the most charming gardens I have ever seen. In the center of this

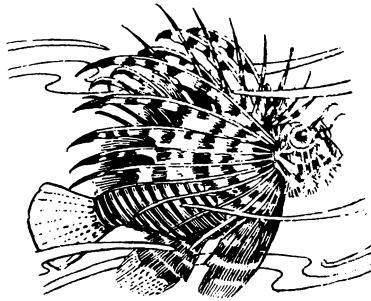
delightfully cool and beautiful spot is a circular concrete basin, 20 feet or more in diameter, filled with water in which pond lilies are growing. Green leaves of these lilies rest on the surface of the water, and here and there float the beautiful purple blossoms.

In this garden are also tropical trees under which are large cages of birds—pretty little love-birds or gorgeous green, blue, and red parrots. In some of the trees, or in nearby cages, are lively little



A Curious Fish—the Sea-Horse

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The scorpion fish has many frills.

monkeys jumping about and chattering in their comical manner.

I noticed also some specimens of giant clam shells, perhaps two feet in length. Such shells are so large that one is sometimes used for a baby's bathtub. The giant clam of the coral islands of the Pacific is the largest shellfish in the world. Such shells are found in the southern waters of the Philippines. The shells often weigh 400 pounds or more, and the clam is said to live from 60 to 100 years. What a pinch a live giant clam could give to one's hand or foot! Occasionally a person is held under water and drowned by this giant shellfish.

I looked above: there on the top of the Old Wall are to be seen artistic trellises and pergolas covered with the large, twisted, woody vines and gorgeous clusters of purple flowers of the bougainvillea, where one may rest and think about scenes which have taken place here during the past 300 years.

In this garden are a number of cages containing Philippine birds and animals. I noticed the Philippine mallard or wild

duck, the purple heron, and the interesting *calao* or hornbill.

The hornbill is found in Luzon. It is a large bird with an immense bill which is hollow and very light in weight. It has a loud, harsh cry, and its flying is laborious and noisy. Its food is mainly fruit and insects. The hornbill lives in holes in trees, plastered up with mud by the male until only a small opening remains. Through this he passes food to the female and to the young.

From a cageful of *mayas*—members of the finch family of birds—I heard sweet songs. There are also cages of parroquets, cockatoos, painted quail, and doves. I saw a number of specimens of the bleeding-heart pigeon, called by the Spaniards "*puña-lada*" which means "stabbed with a dagger," because the bird's white breast looks as if drops of red blood have stained the white feathers.



Leaf Fish

Scalare

In other cages may be seen the red jungle-fowl—an interesting bird of the tropics, many monkeys, several porcupines from Palawan, and a rare specimen, the bear-cat, also from Palawan.

After enjoying this beautiful garden and seeing the interesting birds and animals, I entered the Aquarium itself. The tanks of live swimming fishes are placed in rooms of the Old Wall. At intervals, too, there are native fishing boats which have been used by Filipino and Moro fishermen. The tanks of the Aquarium are faced with plate glass and are lighted by skylights. Each tank is supplied with fresh water and air.

One of the first tanks near the entrance contains specimens of moonfish, so called from the crescent-shaped markings of the tails. A curious thing about moonfish is that they bring forth their young alive.

There are several tanks of groupers and sea-bass. These fish, called *lapu-lapu* in the Philippines, are highly prized for food because of the excellent flavor. They are considered one of the highest type of fish. As I looked at those handsomely shaped specimens, I thought how I would like to go fishing and catch eight or ten like them. One of them would make a good dinner. I read on the placard that there are many varieties of this fish, and that they are widely distributed in the Islands.

Another tank contains a most curious group of fishes known as sea-horses. Each is about six inches long, and the head is shaped exactly like a tiny horse's head. Each has a tail which curls around small branches of weeds; this is said to be the only fish which has a grasping tail. The body is encased in rigid plates and thorny spines. The eggs are carried by the male in a pouch in the

stomach like the kangaroo's until hatched. At times it swims upright with the aid of its single back fin, but usually it remains at rest with its tail curled around a bit of sea-weed to keep from being swept away. They are feeble swimmers. The sea-horse can be found in warm seas, and during the months of July, August, and September they are common in Manila Bay.

Another interesting display is a tank containing sharks. One of these, the spotted shark which frequents beaches, is harmless to man. It eats shell-fish and the like. With its teeth it is able to crush and grind the hardest mollusk's shell, or toughest crab.

There is also a gray shark. This species is fierce, and is very destructive of fishes and fishermen's nets. It is dreaded by all fishermen.

Sharks are common in all waters of the Philippines and neighboring countries. They are the beasts of prey of the sea. The skin (called "shagreen") makes a fine leather. Sharks are hunted in the Philippines for the sake of the oil in their great livers, and for their skin.

Farther on in a tank are the puffers or swell-fish (*botete*) which inflate their bodies by "puffing." This fish is common in the Philippines and is highly poisonous. Of course it is not good for food.

When I saw a tank containing mud-fish (*dalag*) I at once thought of the story of *Dadoy and the Fat Dalag* which was published in the May issue of *The Young Citizen*. This fish is common in slow streams, ponds, and rice fields. Because it has a modified lung, it can live for long periods out of water, according to the placard on the tank. Sometimes it

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MANILA AQUARIUM

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travels overland to other ponds. It is well known as a food fish in the Philippines.

Some very noticeable fish are the scalares which have long appendages on the upper and lower parts of their bodies. This fish is most attractive in appearance. It is sometimes called the "king" of fishes on account of its beauty and royal, dignified manner.

I was interested in looking at the climbing perch which also can live for a while out of water. This fish can crawl up trees for six or seven feet by using its fins. In the same way it can crawl on land.

A curious specimen on display is the archer fish (*cataba*). When it sees an insect on a leaf or a branch, it "shoots" from its mouth drops of water which bring the insect down. This fish is a very accurate marksman, I read on the placard of the tank.

I was interested in looking at a queer, rather pretty specimen known as the scorpion fish. It is striped and has many feather-like appendages or frills. It is dreaded by fishermen on account of its venomous spines.

In another of the tanks are several specimens of the

moray, a very long, slim fish which looks somewhat like a snake. It is a fierce, biting creature.

There is a pool of running water in one of the corners filled with a number of fine looking food fish. In another similar place there are some large turtles.

I saw several banded water snakes in one of the tanks. Although this snake is poisonous, it is caught in large numbers for its skin which is made into leather. This snake is found in all parts of the Philippines.

Other tanks contain specimens of dwarf gourami fish, surgeon fish, many mullets, some carp, many specimens of beautifully silvered tarpon, a leaf fish, so called because it is shaped like a leaf, and numerous other species.

Outside the Aquarium are some crocodiles and a monitor lizard (*bayawak*). This kind of lizard sometimes attains a length of two meters, and is thought to be semi-aquatic. It is found in swamps and along rivers.

I enjoyed my visit to the Aquarium very much, and advise every boy and girl who can possibly do so to go there if they have not already paid a visit to the place. It is well worth the time and effort.

VOLCANOES

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the air 20 miles by the violent explosion; some of the dust was carried by currents in the upper air completely around the earth.

The picture on the cover of this issue of *The Young Citizen* shows Mayon Volcano in eruption. A short history of Mayon Volcano will be found on page 144 of *The Young Citizen* for April, 1939.

POET OF THE PHILIPPINES

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this experience, although it was brief, he took keen interest in the many and various peoples of the canneries. There he worked side by side with Greeks, Italians, Mexicans, Koreans, Kanakas, Puerto Ricans, Chinese, Japanese, Americans, Alaskan Indians, Panamanians, Canadians, and Filipinos.

The money saved from his earnings in the salmon canneries enabled him to enter college. First he attended the University of Washington, and later the University of California at Los Angeles.

During Mr. Concepcion's attendance at the University of California he began to develop his latent ability as a writer. He became associated with the

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