

ELEMENTARY SCIENCE SECTION**THIS EARTH OF OURS**

HOW ROCKS ARE MADE



This earth of ours is like a huge story book. He who has keen and interested eyes can read many an enlightening tale to tell others or to keep for himself. Let us try to find out how rocks are made.

Under the seashores there are forming today thick beds of sand. The rivers bring the rock material down from the hills, and it is sorted and laid down. The moving water drops the heaviest particles near shore and carries the smaller ones farther out before letting them fall.

The hard water comes through limestone rocks adds lime in solution to the ocean water. All the shellfish of the sea, and the creatures with bony skeletons take in the bone-building, shell-making lime with their food. Generations of these inhabitants of the sea have died, and their shells and bones have accumulated and been transformed into thick beds of limestone on the ocean floor.

The fine dust that is blown into the ocean from the land, and that makes river water muddy accumulates on the sea bottom as banks of mud, which by the burden of later deposits is converted

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OUR INSECT FRIENDS AND FOES

THE PRAYING MANTIS



Let us wander a little farther into insect land. There is romance among these small neighbors that is as thrilling as the adventures of Robinson Crusoe in his far-away island. Of course, we know that some insects are among our most powerful enemies, but there are others that are man's greatest helpers.

We shall begin with an insect which appears to be the most pious of all its kind and bows itself upon its knees as though in prayer. The praying mantis. They are creatures of mystery reverence, fear. They are meek, slow-moving, with oddly alert faces. But whether they are saints or villains, few people actually know. I shall lay the evidence before you and let you draw your own conclusions.

The praying mantis has a hinge in the middle of its body and the part in front of it has the appearance of a giraffe-like neck. When the hinge bends in the middle, the front part of the mantis sits up straight. It can turn its head about as can a human being and look from side to side. It is the only insect in the world that can do this. The front legs are very long, so

big as to be quite out of proportion to the rest of its body, and have two well-developed elbows with barbs inside to help in gripping whatever they may seize.

The mantis is a cannibal. It would as quickly eat another mantis as some other creature. Bees, wasps, grasshoppers, are its most frequent victims. But the greatest crime of them all is committed by the female mantis on her mate. The females are larger and stronger than the males and when the latter seem to have lost their usefulness, the females eat them up.

The egg case of a praying mantis is an artistic, delicately sculptured creation. Down the middle of tree trunks these are attached and they give the appearance of a braid. When egg-laying time comes nature gives the mantis materials with which to work. These are secreted from its body and she develops a goodly quantity of froth. While this is still soft, she begins shaping her egg case. Then she places her eggs, some scores of them, and covers them with lighter material.

When this egg cluster hatch in the following June, the tiny creatures fall prey to many enemies. Many more are eaten than escape. It would seem that it might be that the massacre of their brothers and sisters when they first appeared had embittered the mantis, and that, through the rest of its life, it devoted itself to taking vengeance on the insect world.

Perhaps you have come to the conclusion that the mantis is blood thirsty, greedy, murderous. But on the contrary the mantis are man's friends. They eat nothing that is useful to him. They eat his enemies. They keep down the number of those insects that are harmful to him. They are important in maintaining that balance in nature which makes the world a pleasant place in which to live.

PLANTS ABOUT US

PHILIPPINE RESINS

Our forests contain a large number of trees and other plants which produce seed oils, resins, and gums. A number of such forest products are used locally, while a few enter into the foreign commerce of the Islands. The most important oil-producing plants, which can be regarded as strictly agricultural and never wild, are the coconut palm and peanut.

Some of the resinous products and seed oils from Philippine forests are used extensively in the preparation of paints and varnishes, while others are employed for medicinal purposes, illumination, and the manufacture of soaps.

Resins and gums are products obtained from the secretions of plants, but are more often secured by making cuts in the bark or trunk. Resins are formed by the evaporation of resinous juices which flow out naturally from the trunks of trees or when the trunks are cut. When they harden they are solid and do not dissolve in water but in alcohol or in oils. Resins can also be found as mineral resin which are products of dead vegetation. Gum resins are plant secretions and these are the substances that go into the making of your chewing and bubble gum.

Some of the common kinds of resins are almaciga and turpentine. Almaciga is used as incense in religious ceremonies, for torches, starting fires, caulking boats, as a smudge for mosquitoes. It is exported in great quantities and used chiefly in the manufacture of high grade varnish, in the making of leather and sealing wax.

Two kinds of pines found here are sources of turpentine. Turpentine collected from these trees has an appearance of crystallized honey and possesses a pleasant odor. We have many trees that yield resins in our forest in Mindanao, and they but wait the industrious hands of people for them to yield their stored-up wealth. May some of the young, eager eyes that read about them be spurred on by the ambition to go after these forest treasures.