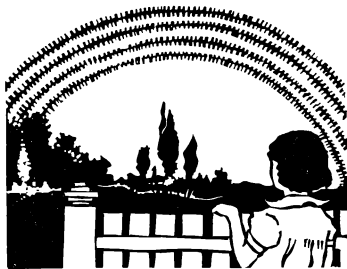


ELEMENTARY SCIENCE SECTION

THIS EARTH OF OURS



The Rainbow

*There are bridges on the rivers,
As pretty as you please;
But the bow that bridges heaven,
And overtops the trees,
And builds a road from earth to sky,
Is prettier far than these.*

We must all feel as the poet does who wrote "my heart leaps up when I behold a rainbow in the sky!", because there is nothing half so beautiful a creation of nature as this arch of colors that appears in the sky after a summer shower.

During these hot months before the coming of the real rainy season, we often have a sudden shower in the afternoon. As you have learned, much water evaporates into the air when the sun is hot and when this vapor of the clouds gets cold, it changes into drops of real water and fall as rain. We have all watched at one time or another an approaching thunderstorm as it rolled up heavily from the west with dull rumblings and clouds suddenly turned black, flashes of lightning and a cold wind to be followed by a deluge of rain.

Then when it had passed away and the sun came out again and everything looked fresh and clean, lo up there in the sky is the colorful smile of nature, the rainbow! Across the heavens it

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HOMES IN THE ANIMAL KINGDOM

Homes of Silk

How would you like to live in a silken home? But you perhaps say to yourself that such a luxury is only for the sons and daughters of kings and not for common people like the rest of us. It has never entered your mind, has it, that lowly creatures like spiders and caterpillars live in homes of silk!

Spiders spin silk. Some line the walls of their caves with silk. Some make wonderful traps of silk, their webs, in which to catch their food! Webs are most beautiful to look at in the early morning when there is a little dew on them so that the fine silken lines are easy to see. Some spiders spin firm silken bags in which to keep their eggs until they hatch. Have you never secured such a spider's bag and given it to your grandmother or old neighbor? Old people say it has medicinal value.



Some spiders spin silk to help them travel through the air. The silk is a sticky sort of fluid while it is in the spider's body but when it touches the air it hardens into silken fiber. That is why you cannot drop a spider to the ground; the instant you drop it a long silken thread emerges from its body and with the aid of this "life line" it swings easily to a place of safety.

But the creature that really stays for a time encased in its home of silk is the caterpillar when it is to turn into a pupa. Caterpillars as you

know hatch out of eggs that moths or butterflies lay, so they are really baby moths or butterflies although they do not look a bit like their fathers and mothers; instead they are ugly, fat worms.



Tent caterpillars spin a silken tent which serves for shelter at night and when the days are rainy. A tent caterpillar stays inside its tent while it molts or sheds its skin. A caterpillar does not have any bones to keep its body firm. The skin is the firmest part of the body and is a sort of skeleton which it wears on the outside. When its skin gets too tight, it splits open down the back like a rip in a seam, and then the caterpillar crawls out through the torn place. Its new skin stretches enough so that the caterpillar can grow one size larger before it needs to molt again. A caterpillar needs a quiet place while it is molting, and a tent is a very good home at such a time.

Caterpillars that do not live in tents often spin thin silk mats just before it is time for them to change their skins. They tangle the claws of their creeping feet into the fibers of the mats, and then they do not fall while they are molting.

There is one time in its life when almost every kind of caterpillars spins some silk and this is when it is ready to turn into a pupa. (Pupa is what an insect is called while it is resting and waiting for its wings to grow.) A pupa is a quiet helpless thing that cannot eat or spin or walk. When a caterpillar is about to become a pupa, it spins a cocoon where it waits for its wings to grow.

A cocoon is the silken room the caterpillar spins when it is through with its leaf-eating growing days and is ready to change into a moth.

Tent caterpillars spin a silken tent which serves

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PLANTS ABOUT US

Plants and Their Enemies

Plants like men and animals have their enemies, too. Our enemies are diseases, other warlike human beings and our bad habits. Among animals the stronger and larger ones feed on the smaller and weaker. With plants there are a thousand things that threaten the well-being and even the life of every tree and shrub and lowly herb.

Too much heat or too little, works great harm to plants. Then there are wasting diseases caused by other tiny plants called fungi and bacteria. Many animals as horses and cows and goats live by grazing the herbage and grass or browsing the foliage of trees and shrubs. Of course they greatly injure the plants they feed upon and therefore many plants are in one way or another protected against such attacks. That is why some plants are guarded by sharp prickles, pointed thorns or fine hairs that burn when they get into the flesh. What plants do you know of are protected this way?

Besides the large grazing animals, there are smaller enemies—insects and the like, that injure plants by eating holes in their leaves, or by feeding upon the delicate petals of the flower. But there is hardly a plant that has not some clever way of its own for protecting itself against the enemies of its kind. After all an enemy, like

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DOVES FOR NANI

(Continued from page 142)

Then—then—in awed silence, the cage was opened! The pigeon stared at the door of freedom. A turn about the cage as if he did not believe his eyes and then out—out to the skies above and their island clouds. It sailed far—far away till it was lost in the blue hills beyond.

That night it rained. The wind rattled the leafless branches of the trees outside. Nani could not go to sleep. She thought of her brave pigeon, of the darkness, and the rain and the wind. It seemed as if it was she who was flying in this rainy night above a great, great sea to carry a message to her father.

When her mother called her to say her prayers, she responded eagerly. And when she went with Auntie to Quiapo Church the next Friday morning, she pleaded, "Please, please, dear God, don't let my pigeon fall into the sea."

Many days passed. Nani wondered what had happened to her messenger. Mother, too, like her was much worried because the postman brought them no letter.

Then one noon as Mother was sending her and Nonoy to their afternoon nap, a Halili truck stopped in front of their house. Mother peeped out of the window and suddenly ran out. They heard her joyful exclamations. Nonoy left the bed and Nani was about to follow

HOMES OF SILK

(Continued from page 155)

There must be time for the insect to be made over from a creeping caterpillar to a flying moth. This change takes place while it is a pupa.

The caterpillar does not wind the silk about itself as if it were a ball. It swings its head with a slow, steady motion, while the silk comes out of the opening through its lower lip as a very fine fiber. It holds its head up and guides the silk with its little hand-like feet that are near the head. Each kind of caterpillar makes its own kind of cocoon. When you go out this afternoon, try to look for a cocoon among the trees in your neighborhood. Do not disturb the sleeping owner for it has had a hard time building its home and it must be dreaming of future days when it shall fly as a golden butterfly among the flowers and green leaves.

him when someone rushed into the room.

She saw a tall man whose eyes held out all his love for her.

"Is this Nani?" he asked her as he gently kissed her. "I received your letter, Nani, and so here I am."

"Did he not fall into the sea?" she asked her Daddy later.

He shook his head and smiled at her. But he waited until she was asleep that night before he told Mother that the pigeon had flown to the ship that brought it and so was able to return again to him.

LEARNING NEW

(Continued from page 149)

II. Finding the correct words.

1. What words tell how the banca moved?
2. What words tell you that the bay was calm?
3. What word makes you see at what stage the moon was?
4. Find the words which tell how the companions sang.
5. Which word makes you see how the oarsmen paddled?
6. Say the word which makes you hear the sound of the water.
7. What name is given to the parts which prevent a banca from overturning?
8. We say that a banca *capsizes* when it overturns.
9. Answer number 7 again using another word in place of *overturning*.

III. Copy the new expressions you have learned. Use them in your own sentences. Use them in telling of your own experience about a ride in a banca.

KEY

- I. 3
5
7
8
10
- II. 1. glided smoothly
2. glassy surface
3. crescent
4. soft crooning
5. rhythmic strokes
6. splash
7. outriggers
9. The outriggers prevent a banca from capsizing.