SYMBIOSIS in Nature

Part 2: Showy Milkweed & Monarch Butterfly

SYMBIOSIS is the close, interdependent association of two organisms. Most symbiotic relationships are beneficial, but some can be harmful. Often overlooked, symbiosis is a very important part of nature. For example, if most plants didn't have fungus living on their roots, they would die from lack of water and nutrients.

There are several good examples of symbiosis in nature. Coral reefs with algae, mycorrhizae with fungae, and termites with trichonympha all have beneficial symbiotic relationships. They would not be able to survive without their vital symbiotes. Both organisms are better off because of the relationship.

Coral reefs have minuscule dinoflagellate algae living in their tissues. These photosynthetic protists produce food that the coral uses. The algae is provided a safe place to live, so both benefit from the relationship. Both play an important role in each others' survival.

[Excerpted from natureniche.tripod.com]

In this series, *Natural Life News* columnist, Elnora Old Coyote, illustrates three examples of symbiosis in Montana nature: **1) Lichen, Algae and Fungus; 2) Milkweed & the Monarch Butterfly; 3) Yucca & Wee Aphid**.

Elnora A.
Old Coyote

Milkweed pods,
after autumn,
are flights-of-fancy
thoughts, like
empty bird wings on straining stems, flown away.

The bird-body in winged and fragile fragments,
summer-ripened and dried for gentle going on the
wind, never returning to the preflight place.

Perhaps like feathered seeds, they fall and fill
again and some-
where, someday...

— SHOWY MILKWEED —

Asclepias speciosa Torr. — *Asclepiadaceae*
Milkweed Family

INDIAN NAMES:

Northern Cheyenne: MA' DONAI 'WOTSE
Seed pods: MESTAE HAAAAMESKON "owl spoons"
Crow: CHEETISBAXUPE (milkweed pods)
Gros Ventre: AHAAN TJIINICAN "wood-like"

Showy milkweed is a large plant, 2 to 3 foot high, spreading from an underground a thick, fleshy rhizomous root system. Stems are sturdy, somewhat hairy, bearing opposite, thick, elongated, heart-shaped leaves and many ball-like umbels of pink-purple flowers with white edges.

Each beautiful flower has a five-pointed star of horn-like pink stamens. Below the stamen-star are five petals bending back and downward. The sepals outside the petals are greenish, hood-like, lanceolate, and three times longer than the stamens.

The fruit is an enlarged pod, which splits down a ridge and releases the seeds, each borne on a long silky tuft of hairs which are easily carried away by autumn breezes.

— ECOLOGY —

Generally, showy milkweed grows at lower elevations in moist areas in the Rocky Mountains and Great Plains regions. Milkweed is often found along the road or garden edges and fences, along railroad tracks, ditch banks, and in moist meadows along stream banks and waste places.

The sap of showy milkweed is milky and oozes out even when only slightly injured and bubbles out where a break occurs in the stem or a tear or if a blossom is torn off. Due to the presence of cardiac glycosides, any species of milkweed have a poisonous quality for livestock, especially when too much is eaten. And yet for the monarch butterfly at caterpillar stage, this is a lifesaving device (see sidebar).

— FOOD —

The Crow people boiled the blossoms and poured off the bitter water, then ate milkweed blossoms

— Monarch Butterfly —

At the beginning of spring, the monarchs leave their winter homes and begin their southward journey. On the way, the female butterflies stop and lay their eggs on the underside of the leaves of milkweed plants. Shortly after, the females die. Thus monarchs are also known as "milkweed butterflies" as the caterpillars will only eat milkweed leaves, flowers and stems.

The caterpillars have rings of black, yellow and white on their bodies. Some milkweed plants are toxic. The caterpillars feeding on them accumulate the poisonous substance in their bodies. This toxin protects the butterfly from its predators. Birds learn to recognize the bright colors and patterns of the monarch butterfly and tend to avoid them.

The caterpillar feeds on the milkweed, then forms an emerald-green chrysalis. The butterfly emerges from the chrysalis after about two weeks. This offspring will continue to migrate and return to the same region where their parents once lived. Monarchs on the west side of the Rocky mountains travel to California, while those east of the Rockies travel to forests in the mountains of Mexico.

as a vegetable with seasonings, such as butter, salt and pepper. Sometimes they boiled the immature tops in water with soup or meat, thickened them with flour for a gravy. It is thought the flowers have a tenderizing effect on meat. Boiled down, because of a high sugar content the blossoms can be made into a thick syrup or a brown sugary substance.

Crows ate the silky tufts of hair off the seeds raw. Seeds and inner walls of the seed pod were eaten raw or cooked. The flower buds and flowers, when young and firm, the young sprouts and shoots 4 to 6 inches high, and young leaves all were boiled and eaten as greens or in soup with meat.

Many tribes broke the stems so the milky juice oozed out. They let the juice harden then chewed it for gum. Boys used the gum to make small wads to blow from a blow gun. They also chewed the fiber of mature stalks to make wads for their blow guns.

As a vegetable, the Northern Cheyenne people boiled the tops of the milkweed that tasted a little like asparagus just before blooming. Cheyennes also peeled the immature fruiting pods and ate the inner layers.

— Medicine —

The roots were the most frequently used part for medicinal purposes. In fall, after the pods split and the seeds fell out and blew away, big tuberous roots or foot-long pieces of thinner roots were dug, chopped into one-inch pieces and dried. They dried hard and tough.

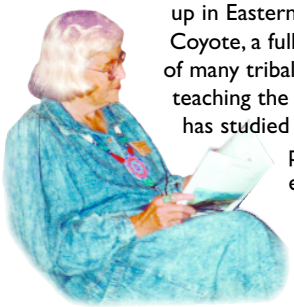
As a stimulant for urination, perspiration, or a diuretic, boiling a tablespoon of roots in a pint of water, and drinking 1/4 cup at a time four times a day was found to be effective.

A tea made from of a teaspoon of powdered root, boiled in a cup of water, softened bronchial mucus, dilated bronchial tubes and soothed raw lungs, also exciting expectoration. Too much would cause nausea and vomiting. Pulverized roots were also used for cuts, wounds and bruises. Blackfeet people chewed the root for sore throats.

Northern Cheyennes made eye medicine by boiling the top part of the plant, strained the decoction, and applying it to the eyes with a clean cloth, especially used for snow blindness. Flathead Indian people drank a boiled root tea to relieve stomach aches They also chewed the fresh roots.

— Ceremony —

For some tribes, Sundance Ceremonies only began when the milkweed flowered. The flowers were boiled and used as a food offering in the medicine lodges of the Northern Cheyenne people. ■



DR. ELNORA (STENERSEN) OLD COYOTE, age 87, grew up in Eastern Montana and married John M. Old Coyote, a full-blooded Crow Indian. With the help of many tribal people, she has been researching and teaching the use of native plants for many years. She has studied and written about over 300 Montana plants. Included here are her notes on ecology and folklore, and her original sketches and poems. Elnora lives in Huntley, Montana, and can be reached at (406) 348-2474.