



Butterflies are Free

by Doug Collicutt

What's so important about a kid witnessing a big black, white and yellow-striped caterpillar transform to a jade-green chrysalis; then waiting patiently to see the big black and orange butterfly pop out and fly off? It just involves the future of the planet, that's all. Far too many people are removed from the miracles of life



that abound in our own back yards. Just as so many have come to see food as something that comes in a cardboard box or in plastic wrap, and have lost contact with what sustains them, so too have they lost sight of the how the world works and how our actions upon it affect other living things.

The wonder and appreciation that only direct contact with another living thing can instil in a child has lasting effects. Caring, for other creatures and their - and our - environments will not develop properly without such exposure. We owe it to the future stewards of our planet to take the time and effort to make sure they don't miss out on all the small miracles that surround them.

Description

The monarch is one of Manitoba's largest butterflies, with a wingspan of up to 100 mm. The body of the butterfly is black with some white spots, the upper surfaces of the wings are orange with black veining. The wing margins are black with white spots. Males can be distinguished from the females by a black patch on their hind wings, called a stigmata. Underneath, the wings are a paler orange, almost beige, with the same black veining and borders. The caterpillar (larva) of monarchs is boldly patterned, too, with black, white and yellow banding.

Habitat

Just about anywhere you can find milkweed plants (Genus: *Asclepias*) and open meadows, you can find monarch butterflies. They frequent prairies, meadows and wetlands, but avoid thick forests. Food for the caterpillars (milkweeds) and for the

adults (flower nectar) are found mainly in grasslands and meadows, so that's where monarchs tend to be.

You can tell when the adult butterfly is going to emerge, because a day or so before it does, the chrysalis becomes translucent and you can see the dark butterfly body within.

Food

Food for adult monarch butterflies consists mainly of flower nectar. They fuel their great travels and reproductive efforts by sipping this sugary solution from obliging plants. The plants are, of course, taking advantage of the monarchs and other insects to do the job of pollination. As a large butterfly, monarchs tend to make use of larger flowers. Any flower that has available nectar could be visited by a monarch.

The most important food for monarchs is that which the caterpillars eat, milkweed (see "[If You Grow It, They Will Come](#)" below). Monarch caterpillars, like the caterpillars of most butterflies and moths, have evolved fairly restrictive diets. Monarch caterpillars eat the flowers and leaves, and sometimes the seed pods, of milkweed plants and that's about it. They are one of the few caterpillars that eat members of the milkweed family. These plants contain a thick, foul-tasting milky liquid (hence the name) that flows into areas of the plant that have been damaged (eaten or broken). This liquid is primarily intended as a deterrent to insects eating the plant. Monarchs can get partly around this defense, by chewing holes in the base of the main veins of leaves before they eat them, thus preventing excess "milk" from pouring into the leaf.

Life cycle

The life cycle of monarchs involves what is termed "complete metamorphosis". That is, they pass through four distinct stages that include: egg, larva (caterpillar), pupa (chrysalis) and winged adult. Complete metamorphosis involves the transformation from the larval to the adult stage via a resting or pupal stage.

In Mexican wintering grounds and along the migration route back to Manitoba, the male and female butterflies will mate. After a brief aerial

Lead Photo: Kimberlee McBride

courtship, they mate by joining the tips of their abdomens together and the male passes sperm to the female. Mated pairs stay joined for several hours and can even fly off together if disturbed. In this case only one adult will fly and the other will be carried.

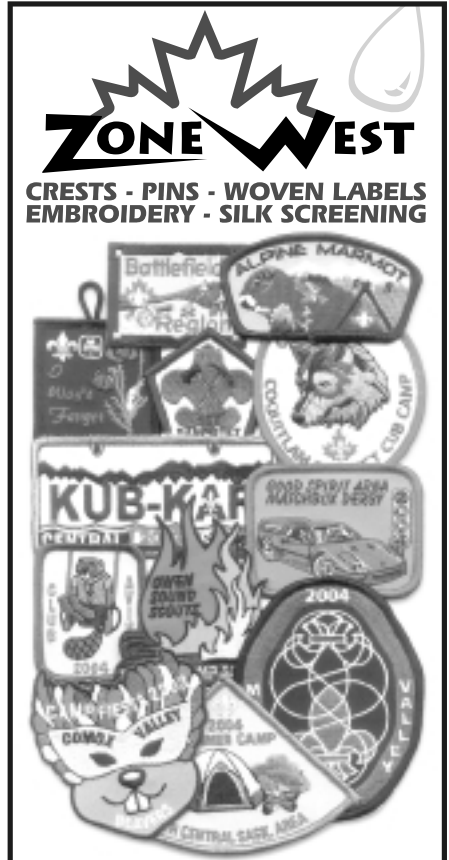
When their eggs are ready to be laid, females search out milkweed plants on which to lay them. They find their way unerringly to milkweeds, most likely navigating by scent until they find a patch. The eggs are laid, singly, on the undersides of leaves or flower buds. A female may lay several eggs individually throughout a patch of milkweed, then will fly off to find more plants. One female may lay hundreds of eggs over her lifetime.

The eggs hatch after about 7-10 days, depending on the temperature (slower when colder). At hatching the caterpillars are only about 4 mm long, but like all caterpillars, they are eating machines and grow rapidly. The caterpillars will shed their skins four times, passing through five stages, called "instars". In two or three weeks they will reach full size, about 50 mm long, having increased in weight about 3000

fold! When they are ready to pupate they "go walkies" and leave the plants where they have been feeding to search out a safe place.

Once the caterpillar has found what it considers to be a safe place, usually under a leaf, branch or building overhang, it will spin a small silk pad and attach itself to the pad by its hind feet. The caterpillar then "goes J" and hangs upside down from the silk pad. About a day later it sheds its skin to enter the chrysalis (pupa). The metamorphosis occurring with the chrysalis can take from 7-21 days depending on the temperature. You can tell when the adult butterfly is going to emerge, because a day or so before it does, the chrysalis becomes translucent and you can see the dark butterfly body within. I have found chrysalises in the oddest places!

Adult butterflies emerge from the chrysalis with shriveled wings and squat, puffy bodies. They will hang beneath the chrysalis remains and pump fluid into the wings to inflate them. Newly emerged butterflies secrete an unpleasant smelling liquid, called "meconium," that contains the waste materials from the chrysalis



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Okay, now what do I do?



Photo: Brian Shurtliff

stage. After a couple of hours the butterfly's wings will be fully formed and dried, and it will be able to fly off in search of food and a mate.

If You Grow It, They Will Come.

If you really want to do something for monarch butterflies, grow some milkweed! My house in Winnipeg is 1 km from the nearest natural habitat

containing milkweed plants, yet each year several female monarchs will find the patches of milkweeds I grow in my gardens, specifically for them. I have counted as many as 25 adult monarchs that were raised and hatched from my garden! Only in years where monarchs have been almost absent from Manitoba in general, has my garden failed to produce several new adults.

Remember – if your group goes on a hike or other summer activity, be sure to keep an eye out for these colourful, fascinating flying friends. ^
 – *Doug Collicutt is an independent biologist working in Manitoba. For more great outdoor information for all seasons, check out www.naturenorthzine.com.*



Butterfly Mobile!

Supplies:

- o Construction paper in various colours
- o Pencil
- o Scissors
- o Yarn or string
- o Glue
- o Paper plate
- o Markers, crayons, or paint
- o Stapler or tape

What to do:

Draw a spiral on a paper plate. Cut along the line. Decorate the paper plate using markers, crayons, or paint.

Using green construction paper, draw a leaf and cut it out. Either draw tiny butterfly eggs on it or glue on tiny paper circles (either cut them out or use a hole punch to make some). A cluster of butterfly eggs are usually laid on the underside of a leaf; the eggs are white or yellow or greenish, and are circular to oval.

Draw and cut out a caterpillar (the egg hatches into a caterpillar, which spends its entire time eating leaves). Decorate it.

Draw and cut out a pupa (the stage during which the caterpillar makes a protective case around itself and turns into a butterfly). Decorate it.

To make butterfly wings, fold a small piece of paper in half, and draw half a butterfly along the fold line.

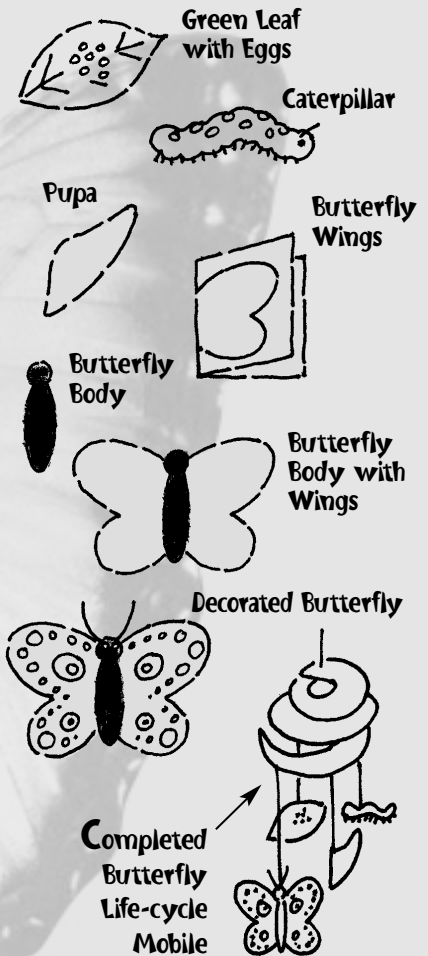
Using dark paper, make a body for your butterfly (it's basically a long oval with a circular head).

Glue the body to the wings and decorate your butterfly.

Staple or tape the stages in the butterfly's life cycle to string and then to the paper plate.

Attach another short length of string to the plate; it will be used to hang the mobile up.

You now have a great butterfly life-cycle mobile.



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