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A Great Summer for Monarchs

September is migration time. Not just for birds but for also for the star of the insect world, the monarch butterfly. Reports from all over North America seem to indicate that this has been an excellent summer for monarch reproduction. The number of monarchs recorded on butterfly counts, for example, is much higher than last year. In the Peterborough area, 173 monarchs were tallied on the one day count this summer compared to only 19 a year ago.

2004 was a disastrous year for this beautiful orange, white and black butterfly. Winter storms on their Mexican wintering grounds had reduced the population to very low levels. This was followed by a cool, damp summer that was unfavourable to reproduction. Consequently, the winter of 2005 saw the lowest overwintering population recorded to date. This summer, however, the population appears to have rebounded and the number of monarchs migrating south should be back up to average levels.

Like all butterflies, monarchs undergo complete metamorphosis. Life begins as a tiny egg, laid on a milkweed plant. Female monarchs typically lay hundreds of eggs. A black, yellow and white caterpillar, about two millimetres in length, hatches from the egg and ravenously devours milkweed leaves for the next 10 to 14 days. In the process, it sheds its skin five times and grows to about 2700 times its hatchling weight. The caterpillar then weaves a tiny, black silk pad from which it suspends itself in the shape of the letter J. It then casts off its skin a last time by performing a kind of twisting motion. When the skin finally drops to the ground, a beautiful lime green chrysalis, also known as a pupa, is revealed. Over the next 10 to 15 days, the pupal skin gradually becomes transparent, and you can clearly see the adult butterfly developing inside. Finally, the pupal skin cracks and the butterfly emerges. It then spends the next hour or so "inflating" its wings with fluid before it flies away

Faced with the prospect of cold weather and no food, most butterflies have evolved to overwinter as an egg or chrysalis. Not the monarch. They are unique in the butterfly world in that they undertake a two-way migration. Although there can be two or three generations of monarchs born in a single summer, only the last generation migrates south. The shorter days of late summer triggers the onset of migration, while the fuel for the trip is supplied by the nectar of asters, goldenrods and other late-summer flowers. The migratory generation will not reproduce until the following spring.

Although they fly alone during the day, monarchs gather in large numbers at night, particularly in peninsulas along the Great Lakes such as Presqu'ile, Point Pelee and the Leslie Street Spit in Toronto. They are hesitant about flying across the open water of Lake Ontario until they have the proper weather conditions such as a tail wind from the north. When flying over land, it is thought that monarchs also take advantage of columns of rising air to climb to great heights and then glide southward down to the next thermal, in a manner similar to hawks.

After a flight of about 3700 kilometres, the butterflies arrive in the mountains of the Trans-Volcanic Plateau of central Mexico, usually in early November. The location of the wintering grounds was a complete mystery until 1975. It was discovered by a Canadian, Dr. Fred Urquhart of the University of Toronto, who undertook a massive monitoring effort by using paper wing tags bearing a return address. People all over the southern states and northern Mexico soon began to find tag-bearing monarchs and returned the tag to the University of Toronto, along with the date and

location. By following these leads, Urquhart was finally able to locate the wintering grounds. Monarchs are still being tagged at Presqu'ile each summer as part of a research project to better understand the butterfly's migration patterns.

We now know that monarchs spend the winter in a handful of tiny patches of Oyamel fir forest, most only several acres in size, high up in the mountains west of Mexico City. They literally blanket the trees by the millions. Here they find everything they need for winter survival: cool, but not freezing temperatures, moisture in the form of fog and clouds and thick forests to protect them from damaging wind and storms. The monarchs are dormant for most of the winter but will take short flights on warm days.

They leave their Mexican roosts in early March and head north, laying eggs on milkweed along the way. Before they die, they will have once again recolonized the southern U.S. with a new generation of monarchs. It is these individuals, the offspring of those who journeyed south in the fall, that arrive back in the Kawarthas in early June.

As most people are well aware, monarchs continue to be threatened on both their summer and winter territories. These threats mostly take the form of habitat destruction. In Canada and the U.S., housing developments and urban sprawl are eating up close to 3000 acres a day. In addition, the use of herbicide-resistant corn and soybeans has resulted in the loss of at least 80 million acres of monarch habitat. In the past, milkweed could continue to grow in corn and soybean fields because it was resistant to tilling. However, milkweed is not resistant to herbicides. Countless monarchs are also struck and killed by the huge number of vehicles on our roads these days.

On the Mexican wintering grounds, monarchs are even more vulnerable. First of all, the butterflies are concentrated in only few tiny sites. The people living in these areas are poor and many depend on logging for a living. People can make a lot of money selling logs. Although the wintering sites themselves are protected, the forests that constitute buffer zones around the reserves continue to be thinned out. Like holes in a winter coat, potentially lethal rains, snow and sleet are increasingly able to reach the monarchs and can sometimes kill millions. In many ways, the future of the monarch depends on solving the economic problems of the people living in the vicinity of the reserves. Ecotourism alone has not proven successful.

What we don't know about the monarch is probably just as fascinating as what we do know. For example, how is it that an insect traveling on its own and with a brain the size of a pinhead can find its way to a few mountain tops 3700 km away? There's probably a good chance that we'll never be able to fully answer questions like this which, in my opinion, only adds to the monarch's appeal.

What to Watch for This Week:

The Harvest Moon, the full moon closest to the fall equinox, will occur this coming Friday, September 17. For several days in a row, the moon will rise close to the same time each evening and will appear to linger on the horizon as it follows a shallow angle up into the sky. Too busy farmers, these moonlit evenings are still a much-appreciated bonus of light.

A neighbour of mine in the west end of Peterborough is caring for a white homing pigeon (unbanded) that arrived in his yard about a month ago and decided to stay. It is quite tame. If you know anything about this pigeon, please call 745-3146.

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