



[From Summer 1997]

## **Butterflies On The Rise**

There is more to watch in spring than just the bird migration and flowers blooming. Smaller creatures are also beginning their journey through life. One group in particular is the Lepidoptera.

Butterflies belong to the Kingdom Animalia, Phylum Arthropoda, Class Insecta, Order Lepidoptera. One physical characteristic that separates insects from most other animals is that most insects have wings - but how many wings? Houseflies, mosquitoes, tsetse flies and all other true flies have two wings. Butterflies, moths, dragon-flies, wasps, and bees have four wings.

Insect wings are different from others in that they are separate, independent extensions of the body wall, not modified arms (as for birds and bats). It is estimated that houseflies beat their wings up and down 200 times per second, and that mosquitoes beat their wings about 1,000 times per second. The buzzing of a fly or a high pitched whine of a mosquito are the result of the rapid beating of their wings in the air. Butterflies with large wings and light bodies may beat their wings only 4 to 20 times per second.

If you see a small butterfly and a big butterfly do you think that the small butterfly hasn't grown up yet? Well, you'd be wrong. If you see any species of butterfly, then it is full grown. If insects are flying around, they will not grow any larger.

Butterflies and moths are the second largest order of insects, consisting of over 100,000 known species, with thousands still not yet described. Approximately 12,000 known species of butterflies and moths live in the United States.

Butterflies and moths exhibit complex metamorphosis through four distinct stages: egg, larva, pupa, and adult. Butterflies begin their life as an egg, laid either singularly or in a

cluster depending on the species. A very tiny caterpillar emerges, often consuming its egg shell, and begins feeding on its host plant. Some scientists have claimed that if a six-pound human infant gained weight at the same rate as a caterpillar, at the end of two weeks the baby would weigh 8 tons.

For example, after hatching out of an egg the size of a pin head, the Monarch caterpillar proceeds to eat the egg shell. Then it begins to eat milkweed plant - and eat, and eat, and eat. In two weeks, the caterpillar, at two inches long, is now 2,700 times bigger than it was when it hatched from the egg! Caterpillars must crawl out of their skin or molt, usually around five times, before changing into a pupa. Finally, an adult butterfly emerges, spreads its wings and flies away.

Most adult butterflies and moths live solely on nectar. Fats and proteins are acquired by caterpillars and stored for later use as adults. The extra food supply that caterpillars must store is so heavy that these gluttonous eaters need five or so sets of their abdominal prolegs to support their bodies. Nearly all caterpillars consume an enormous quantity of plants. In turn, caterpillars serve as food for tens of thousands of animals that prey on them. If caterpillars were to disappear from the earth, unimaginable problems would be caused for all creatures linked together in the web of life.

#### Differences Between Butterflies and Moths

##### Butterflies:

- Have club-like antenna
- Usually have slim bodies
- Rest with their wings erect and full, like a sail
- Are active during the day
- Don't spin silk
- Caterpillars form a hardened chrysalis

##### Moths:

- Have feathery or hairy-like antenna
- Have stout bodies, usually hairy
- Rest with wings laid back or spread out flat
- Are active at night
- Spin silk
- Caterpillar makes soft cocoon

*Ray Paterra, Intern  
Eastern Shore of Virginia NWR*