

## Urban Nature Watch for TerraGreen by Sanjay Sondhi

Published in Sep 2010



### The Mysterious World of Moths

The world of natural history has been a continuous source of wonder for me. My interest in nature started as a young boy, when I would curiously look at creepy-crawlies in my home garden. Subsequently, as a college student in IIT-Kanpur, I started bird watching. Anything to get away from the tedium of studies! Watching birds led to an interest in other creatures-mammals, butterflies, amphibians and reptiles. Since then, the natural world has always been cooking up something new to pique my curiosity!

A group of creatures about which I have only limited knowledge is moths. Recently, I decide to learn a little bit about these intriguing insects. India is home to more than 10,000 species of moths (versus 1500 species of butterflies). Despite this, perhaps on account of their nocturnal habits, moths are not well studied in India. The most comprehensive books on moths of India were written by an Englishman, G. F Hampson. His work, part of the Fauna of British India series, was published more than a century ago! Between 1892 and 1896, Hampson wrote four books on moths. A fifth volume was added to this in 1937, by Bell and Scott. These five volumes are still the most complete works on moths of India, written decades ago!

Recently, I came across large golden-yellow moth, which fluttered clumsily near a light bulb. The Golden Emperor Moth *Loepa katinka*, is exquisite. More than three inches across, it has four pink eye-spots. These eye-spots appear to peer out at you, and are intended to confuse potential predators, who get fooled into thinking that a large creature is peering at them!



The Golden Emperor Moth belongs to group of large moths called Saturniidae or Saturnids. This group of moths includes many large moths including the world's largest moth, the Atlas Moth *Attacus atlas*. The Golden Emperor Moth can be found throughout the Himalayan foothills and has recently been recorded in South India . They can often be seen in the outskirts of cities, which are surrounded by forest, fluttering near light bulbs, especially during the rainy season.

The Golden Emperor Moth, like many other Saturnids, lacks any proboscis (the moth's mouth parts) and hence does not feed at all! All the energy for the moth comes from the food that it eats as a caterpillar. Once the moth emerges from its cocoon, it has a very short adult life, of only about a week, after which it dies. The moth lives only to breed. Its large, feathery antennae have sensory organs, that allow the moth to smell a potential mate from a long distance away. Males have larger and more sensitive antennae, and it is believed that they can sense a female from a few kilometers away!

Observing moths is easy, as they are attracted to light. For the last few nights, I have kept the light on in the balcony of our first floor bedroom. Loads of moths have been coming to the light, and I have had a ball photographing them. Risky business this, because I have Anchal, my wife to contend with! She does not relish the fact that I am up well beyond midnight, photographing moths outside her bedroom. Add to this a blinding camera flash, every time I take a photograph, doing its utmost to keep her awake, and I am really courting trouble!

This brings me to another interesting question-have you ever wondered why moths are attracted to light? Theories attempting to answer this abound. An old theory believed that moths use the moon as a reference to navigate in a straight line, and hence confuse lights with the moon. Others believe that while moths do confuse the light for the moon, but are attracted to lights, because flying towards the moon, means flying into open space, and hence away from predators. Yet another theory surmises that moths are not really attracted to light, but circle around "Mach bands" which are optical illusions that show an area of darkness around a bright light. The astounding fact is-we really don't know for certain why moths come to lights! Its mysteries such as these that keeps me ever interested in nature.

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Urban Nature Watch appears in TerraGreen, TERI's ([www.terin.org](http://www.terin.org)) monthly magazine.