

The Outside Story



Flight of the Flunker Moth By: Declan McCabe

In early November, I flicked on the porch light and took out the trash. In the brief time it took, a couple of late-season moths found their way to my porch light, and as I slipped through the back door, one of them joined me inside. I cupped my uninvited guest under a drinking glass and took him out for liberation; and “him” turned out to be correct.

Before the release, I couldn’t resist a closer look. It was unmistakable: a “flunker moth.” But don’t expend energy on a Google search; it will come up empty because the term is a Vermont original coined perhaps by the venerable Dr. Ross Bell or by students in his Field Zoology course which I had the privilege to take in the 1990s.

The more Googleable term is winter moth, the common name for *Operophtera brumata*, one of a few late fall or early winter flying moths. (This is confusing since *Operophtera bruceata*, also known as Bruce spanworm or hunter’s moth, also flies

this time of year and is also commonly called winter moth; this illustrates why scientists favor Latin names.) Insect flight requires warm muscles and few can muster the energy to remain airborne in chilly November air. Winter moths are only barely an exception to the pattern: the females don’t fly at all. If you are not going to fly, then it makes little evolutionary sense to expend resources on wings, and so the females are wingless or nearly so.

To get around, female winter moths crawl up tree trunks from forest-floor leaf litter. There they release pheromones that act as Chanel No°5 for male winter moths. On warm winter nights, the male moths fly short distances to find females. On cold nights when their wings fail them, males are not above hoofing it up a tree to find a mate. When they do fly, they don’t venture far. In one study, researchers released 800 male *O. brumata* moths and after two whole days, only a third of them made it past 33 feet.

The *O. brumata* winter moths are an invasive species, native to Europe and the Far East, and can become a problem for native trees. We know that invasive species invade in part through rapid dispersal. So how does a species with nearly flightless males and totally flightless females spread? To answer this question, let’s explore the rest of the life cycle.

Most grade-school students can tell us the basics of a moth or butterfly life cycle. A caterpillar hatches from an egg, grows, and forms a pupa, from which the adult emerges. We know that in this case the adults do not disperse, and it is rare for eggs or pupae to disperse, so it must be the caterpillar. Caterpillars can hardly be considered

world class sprinters, and marching across open ground to the next tree seems a foolhardy choice. And so, borrowing a page from *Charlotte's Web*, winter moth caterpillars hatch and then spin out strands of silk that carry them for hundreds of yards on the wind.

When they land on a suitable tree, they crawl up and feast on fresh young leaves for about six weeks. When they have grown to full size, they rappel from the tree tops on silk strands and pupate in the soil. They emerge as adults in late fall or early winter to complete their life cycle.

When I found my stray moth, why did I immediately think flunker moth? Excellent educators often encourage budding zoologists to become familiar with as much of the animal kingdom as possible by requiring student to collect as many specimens as they can. And so, when I took Professor Bell's course, I dutifully collected, pinned, labeled, and identified a collection, as had many Field Zoology students before me. Points were awarded for diversity. Each new family, genus, or species garnered higher points; new specimens of previously collected species were worth far less.

On the first day of class, Professor Bell explained that successful students should go out on that very day and collect. Early collection was essential in Vermont because if we left it until October, there'd be far fewer species out and about. And if, perish the thought, we postponed our work until November, we'd end up with a drawer filled with nondescript brownish moths flying in formation on their pins ... and we would flunk. And so for me, winter moths will forever be flunker moths.

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