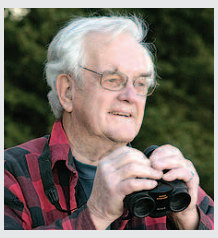

Tales from a
Sisters Naturalist
by Jim Anderson

Flies aren't just flies...

The tachinid fly is a humdinger of an insect. When a beautiful giant of the fly world came to rest on my wife, Sue's, back near the Chewucan River I whispered in her ear, "Don't move, there's a magnificent fly on your back, I need to photograph it."

Swat the next fly you see, hard enough to stun it but not kill it, and slap it under a magnifying glass.

The scientific order of flies is Diptera, which in Latin means, "two wings." In the world of science that's a huge "order" of insects that comprises the two-winged or true flies — in which the hindwings have been reduced to form balancing organs (halteres). Now, take a look at those halteres.

Astounding, aren't they? Just a stalk of chitin (insect skeleton) with a balancing knob on the end, when the wings go up, the halteres go down, VERY rapidly).

Without that balancer flies could not fly, or perform the sudden changes in attitude and direction that they do. According to entomologists (scientists who study insects) there are over 150,000 different kinds of flies known — but the current estimates are that there may be more than one million(!) species living on Planet Earth today.

OK, if you've got this far and the fly is still under your magnifying glass, take a look at the abdomen (that's the rear end) you may notice tiny slits on the sides; that's the fly's breathing mechanism, and it gets even better as you explore the body of that pestiferous insect that drives some of us nuts. Look at those antennae!

Oh, yes, lest I forget, mosquitoes are also "true flies." But it's only the females that suck your blood; the males are flower-lovers and among our more important pollinators. Oh, yes, Mother Nature's multifaceted; it was designed that way.

The tachinidae are a large and variable family of flies with more than 8,200 known species having been described in just North America alone. Flies in this family commonly are called tachina flies or simply tachinids, and as far as is known, they all are "protelean parasitoids," which means they are parasites of butterflies and other insects.

Several years back California sister butterflies emerged in unprecedented numbers throughout Northern California and Oregon. There were so many millions flying around that the California Highway Department installed special washing machines along I-5 at Weed to clean the butterflies out of the radiators of trucks so they didn't overheat.

In Bend, the butterflies descended by the tens of thousands into the Shevlin Park area and the larvae (caterpillars) completely defoliated the snowbrush.

We wanted to capture photos of the butterflies emerging from the chrysalis (not cocoon; that's for moths), so I cut several snow-brush branches covered with larval cases and brought them home.

Patiently we waited for the butterfly to emerge, watching the chrysalis wiggle from time to time, but as the butterflies emerged, something astounding happened. In more than 50 percent of the chrysalides, instead of a butterfly emerging from the silken case, out popped tiny flies.

They were tachinids that had grown from eggs laid in the caterpillar by adult tachinids; the eggs hatched and kept growing as their host metamorphosed from caterpillar to adult insect, the maggot devouring the advancing butterfly, then the fly emerging as an adult.

I'm still searching to see who gets to be the lucky host of that beautiful giant in the photo above (which I've named the Chewucan tachinid fly).

My entomological pal in Colorado, Eric Eaton, reminded me that reproductive strategies vary greatly, and sometimes can be confused with the wasps, that can be host-specific.

Typically, tachinid larvae are internal parasites of caterpillars of butterflies and moths, but some species also attack larvae and adult beetles, while others use grasshoppers, centipedes, bees, wasps and sawflies.

Many tachinids are important natural enemies of major insect pests, and some species actually are used in biological pest control. Conversely, certain tachinid flies that prey on useful insects are considered as pests.

Another reproductive strategy is when a female leaves her eggs within the host's environment. The female might lay her eggs on leaves, where the host is likely to ingest them. Some tachinids that are parasitoids of stem-boring caterpillars deposit eggs outside the host's burrow, letting the first instar larvae do the work of finding the host for themselves.

So, there you are: That tiny, ugly fly, or that beauty in the start of this piece (depending on your taste in Mother Nature's magnificent word of creatures) can blow you away with all they they do for and to you.

PHOTO BY JIM ANDERSON

A beautiful tachinid fly — which aren't usually that colorful — on my wife Sue's sweater.