Know Your Bugs: Getting to know what bugs you

By Valerie Rose

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Not All Insects Are Bugs

The study of insects is called ENTOMOLOGY. By changing a few letters (or being a sloppy speller – that is, a "creative" speller) you get ETYMOLOGY, the study of word origins. Then there are the words "insect" and "bug," which are often used interchangeably. My high school biology teacher was exasperated by the way we students referred to every small, crawly thing as a bug. "They're not bugs, they're insects!" she'd insist. Now she'd approve of my Master Gardener respect for "insects" as I now call them. Savvy gardeners know insects play a crucial role in growing and maintaining a healthy garden. There are the insects we value: pollinators such as bees, predators like lady beetle larvae that gobble up aphids and those insects we don't welcome: like aphids. And then there are bugs.

"All bugs are insects, but not all insects are bugs," says Master Gardener Virgene Link, a long-time student of entomology. A group of insects are officially known as "True Bugs." Link says, "True bugs are the Hemiptera, with wings that are half clear and half opaque." So some insects (that is, true bugs) are classified in the order Hemiptera. Link adds, "To clarify: the term 'bug' is used by the general public for a great many different animals and even by entomologists for occasional insects in other orders than Hemiptera (like lightningbug--which is really a beetle). When used for an insect in the order Hemiptera, the 'bug' of the name is written separately (like pirate bug or giant water bug or stink bug). So that is why the Hemiptera are called 'true' bugs: because they have 'bug' in their name, and to distinguish them from occasional insects in other orders to which the term 'bug' is applied. That doesn't make other insects 'false' bugs. They really aren't bugs; they're beetles or flies or spiders or ants or wasps, etc."

A brown marmorated stink bug is more easily viewed through a magnifying glass. The bug is on display at the WSU research station near Mount Vernon. **Photo by Scott Terrell / Skagit Valley Herald.**

Now a stink bug (Banasa dimidiata) might bug you, since this insect is a true bug. They enjoy eating ripe fruit, such as raspberries. If you pick a stink bug off a fruit you wanted to eat, you'll learn how they've earned their common name. Stink bugs have repugnatorial glands, which secrete a repugnant-smelling substance to discourage predators. Other true bugs include the bed bug and leaf bug. The latter is a garden pest found east of the Rocky Mountains – unfortunately, bed bugs are not confined to one part of North America.

Only One Percent Are Pests

Sadly, many people treat every insect as if it was a pest. Many years ago, when preparing for backyard picnics, my well-meaning Aunt Jean would spray insecticide around the yard. She really concentrated on the chairs and tables, flowerbeds, and the sandbox where we kids would play. Ack! According to the Washington Toxics Coalition, "Scientific studies link certain pesticides to cancer, birth defects, nervous system disorders, reproductive problems, endocrine (hormone) disruption, and immune deficiency." I won't speculate about the health effects I experienced from playing for hours on an insecticide-laden lawn – but I now know that insects should not be unilaterally poisoned. "99% of insects are either beneficial, of mixed consequence (some good/some bad) or just interesting," says Link. That leaves only about 1% of the insect world that cause harm to people, gardens or crops.

So how can you tell friend from foe? "Insect identification is the first step in discovering what an insect does. Is it harmful or beneficial or just interesting?" writes retired entomology professor Lloyd Eighme in his wonderful book, Insects of Skagit County. I often turn to this guide, comparing photographs and descriptions to the insects I find. Dr. Eighme has generously donated many hours educating Master Gardeners and his book is an important resource for gardeners who want to know the insects crawling or flying around our plants.

Dr. Eighme will help present a ***Know and Grow*** workshop on June 14th entitled "Know Your Bugs" (see InfoBox for details.) Virgene Link will also share basic insect ID skills, along with her enthusiasm for insects. "I've learned just how awesome these animals are," Link says. "They have a beauty, intricacy and complexity of form and behaviors that is impressive and surprising. At least it was surprising to me, as I'd never really looked that closely at them before. You see one or many and think 'oh, there's a bug or bugs' without really looking at their detail or thinking of their place and function in our environment."

Above left: Master Gardeners Rosalie Myers (standing) and Virgene Link look at an insect specimen Wednesday morning that someone brought to the WSU Skagit County Extension Office for identification. Participants at next week's Know & Grow workshop will be able to use a similar microscope to view their own specimens. **Above Right:** A Lepidoptera (moth or butterfly) caterpillar someone brought for identification to the WSU Skagit County Extension Office tries to escape from a petri dish Wednesday morning. **Photos by Scott Terrell / Skagit Valley Herald**

Plant Diagnostic Clinics Also Welcome Insects

For help identifying true bugs and other insects, you can bring a sample to the WSU Extension Skagit County Master Gardeners' weekly Plant Diagnostic Clinic. Master Gardeners meet to answer your questions every Wednesday from 10 AM to 2 PM in the WSU Extension office at 11768 Westar Lane, near the Skagit County Airport in Burlington. Plant and insect samples can also be dropped off on other days. For more details, contact the Extension Office at (360) 428-4270 ext. 0.

Learning about the insects in your garden will help you understand the intricate web of life, where we humans are definitely in the minority. Virgene Link says, "Insects are the dominant group of animals on the earth today. They far surpass all other terrestrial animals in numbers and they occur practically everywhere on earth. Some 900,000 different kinds have been described, and more than 1,000 kinds may occur in a fair-sized backyard." You will probably recognize many of them, since the majority of insects in the U.S. are either Coleoptera (beetles,) Diptera (flies,) Hymenoptera (ants, bees and wasps,) or Lepidoptera (moths and butterflies.) We humans are way outnumbered, so get to know your insect neighbors, true bugs and all.

Know & Grow Workshop

What: "Know Your Bugs" ***Know and Grow Workshop***
When: Tuesday June 14,
Time: 1 PM to 2:30 PM
Cost: Free!
Where: WSU Mount Vernon Northwestern Research & Extension Center
16650 State Route 536 (Memorial Highway)
Details: (360) 428-4270 ext. 0

RESOURCES

- "Insects of Skagit County," by Dr. Lloyd Eighme, available at the WSU Skagit County Extension office, 11768 Westar Lane, (near the Skagit County Airport,) Burlington or call (360) 428-4270 ext. 0.
- "Insects and Gardens: In Pursuit of a Garden Ecology," by Eric Grissell, Timber Press, Portland Oregon, 2006.
- Encyclopedia Smithsonian: BUGINFO: www.si.edu/Encyclopedia_SI/nmnh/buginf
- Pesticides and Kid's Health, Washington Toxics Coalition: http://watoxics.org/healthy-living/healthy-families/healthy-schools/pesticides-101/kids-health