

## SLUGS

### Jan2012 BAMGA Bug of the Month

by Master Gardener Jim



#### SLUGS TO BE ON THE LOOKOUT FOR:



##### **Spotted Garden Slug**

- The largest slug in the eastern US
- Grows 5-7 inches long
- Host plants include lilies, iris, narcissus, bedding plants



##### **Gray Garden Slug**

- Grows to about 2 inches long
- Host plants include coleus, lilies, iris, narcissus, chrysanthemum, jimson weed, strawberries, veggies (especially lettuce)



##### **Greenhouse Slug**

- This one is a burrowing species and can cause serious injury to roots and stems
- Grows from about 2 to almost 3 inches long



##### **Garden Slug (Arionid Slug)**

- They survive in areas of moderate to high humidity
- When irritated, slime on the body is yellow to dark yellow
- Host plant – narcissus



##### **Lehmannia poirieri Slug**

- Introduced from Europe; seen around dwellings, greenhouses, gardens
- When irritated, mucus is colorless
- Feeds on carnations, ivy, various bedding and veggie plants

I am going to step away from our norm this month – Phylum Arthropoda (insects, spiders, mites, scorpions, etc.) – and move to Phylum Mollusca (mollusks, which includes squid, octopi, snails, clams and oysters) and a subgroup called Gastropoda. Members are identified by a head, ventral muscular foot and a shell (internal in slugs, and external on snails). From this subgroup, our feature this month is the Slug.

Due to our mild winter thus far, we are still harvesting cabbage and broccoli from the garden. Sherry has been preparing excellent stir-fry dishes with cabbage, broccoli and garlic from our garden, adding onions, McCormick Grill Mates Roasted Garlic & Herb seasoning (which goes in almost everything!), a little soy sauce, little Worcestershire, little VOO and a tiny bit of Raspberry Vinaigrette (or Balsamic Vinaigrette) dressing. Takes only minutes to prepare and is outstanding!

That said, I have recently experienced some minor to moderate damage on a few of the plants. The culprit is the slug, with leaf damage resembling that of caterpillars and/or wireworms. Our recent warm, rainy weather has been the trigger for their feeding.

Slugs are often referred to as naked snails or snails without shells. There are approximately 725 species of land snails and about 40 species of slugs now known in North America. Most are not native. With few exceptions, our native species are solitary and do little damage. Generally, those species introduced to the U.S. are gregarious and do major damage as their populations increase.

Most slugs have two pair of tentacles on the head, with eyes located on the tips of the longer pair. The shorter (and lower) tentacles are used for smelling and tasting. The mouth, positioned between and below the lower tentacles, is equipped with a “radula”, a tooth-covered rasp. This is used to grate plant tissue.

Locomotion is accomplished by secreting a mucus path from the pedal gland just below the mouth. I am sure you have seen the remains of this path when light hits the surface. Slugs breathe through the “pneumostome” or “respiratory pore”, which opens into a cavity in the mantle (flap of skin just behind the head).

Slugs prefer cool, dark moist habitats and, in temperate zones, they retreat deep into the soil during too hot and/or dry spells. They have diverse dietary habits, with native slugs feeding on fungi, lichen, carrion and plant materials in wooded areas. Invasive varieties are generally destructive, feeding on flowering and leafy garden plants, as well as crops such as wheat and corn.

As slugs mature, they become functional males, then hermaphrodites (having both sexes), with self-fertilization observed in some species. Older slugs are female. The number of eggs they lay varies among species, up to multiple clusters or batches per year. For example, in captivity, the gray field slug can lay up to 500 eggs per year while the black field slug lays 10-30 eggs per batch.

Fortunately, slugs have many predators including birds (it’s reported that slugs make up to 6% of the diet of starlings), ducks, moles (see, they do have some good qualities!), toads, shrews and carnivorous ground beetles, rove beetles and firefly beetles. Sciomyzid flies and nematodes also parasitize slugs. Dry weather, however, is probably the number one killer of slugs, destroying up to 90% of slug eggs and young per year. They prefer temperatures of 17° C – 18° C (best for egg-laying) but can lay eggs at cooler temperatures (they just develop slower). They avoid temperatures of 21° C or higher. Lifespans vary from one to six years.

#### **NOTES OF INTEREST:**



Slugs can withstand brief periods of submersion under water. They will drown after several hours.



Gentle breezes will cause slugs to turn toward the source and extend their tentacles. If the breeze becomes too strong, they turn away to avoid dehydration.



Slugs are sensitive to ambient temperatures, detecting changes as gradual as 2° F per hour.



Slugs can crawl over a very sharp knife blade without injury.



Slugs will not crawl across a barrier of copper metal or wooden surfaces treated with copper sulfate.



Studies from Colorado State University have shown that Kingsbury Malt Beverage (from Heileman Breweries) is the beer most preferred by slugs. *It’s always five o’clock somewhere!*



The Spotted Garden Slug has a unique mating ritual. The pair suspend from a twig on a thread of mucus that can reach to three feet in length. After mating, clusters of one to several dozen eggs are laid under rocks, logs, leaf litter or in sheltered areas in the soil.

There are a number of options for **controlling slugs**. One of the most effective methods of “**habitat modification**” is to eliminate hiding places, weeds, garden debris, etc. You can also cultivate the soil, exposing their eggs, or water plants early in the morning using drip irrigation. “**Barriers and traps**” also work – copper barriers at the base of plants, or use of shredded bark, egg shells, lime, rolled up newspaper, or layers of cardboard, just to name a few. Trapped slugs should be put in the trash or submerged in soap water. “**Baits**” also work – beer placed in a pie pan with 1/8”-1/4” of its edge above ground (since beer does not have an EPA Registration Number, it is technically illegal to use it as a “pesticide”) – or commercial (molluscicidal) baits; beware of metaldehyde baits – they are effective but toxic to dogs, birds and earthworms; be sure to check with your local extension office and read labels carefully.

Jim