Argus Tortoise Beetle

Figure 1. Pair of Argus tortoise beetles on bindweed.

Scientific Names: *Chelymorpha cassidea* (Fabricius) **(Argus tortoise beetle)**

Order: Coleoptera (Beetles)
Family: Chrysomelidae (Leaf Beetles)

Identification and Descriptive Features: Argus tortoise beetle is one of several tortoise beetles in Colorado that develop on plants in the morningglory family (Convulvulaceae). It is the largest species in this group of unusual beetles, about 10 mm in length, and its body is more domed than that of other tortoise beetles, appearing somewhat helmut shaped. Adult beetles are generally orange, but distinctly marked with five black spots on each wing cover. Perhaps among the insecs one might find in a garden or field it most resembles Mexican bean beetle.

Figure 2 Larva of the Argus tortoise beetle, carrying a shield of feces and discarded larval skins.

The larvae are generally cream colored to very pale brown and are marked with large numbers of black spots. Characteristic of tortoise beetle larvae they will usually be found carrying a “fecal shield” attached to hooks at the end of the body, which can be moved to provide a cover over the back.

Distribution in Colorado: The Argus tortoise beetle is largely, if not completely, found in the eastern half of the state.

Life History and Habits: Winter is spent in the adult stage and the beetles move to host plants in spring and mate. All reports to date of plants on which this insect have been seen developing involve feld bindweed (*Convolvulus arvensis*). Likely other morningglory plants may be hosts for the larvae. The adults may be found resting on many other kinds of plants in the vicinity of bindweed, but do not feed on these.

Figure 4. Argus tortoise beetle egg mass.

Figure 5. Full-grown larva of an Argus tortoise beetle settled on a leaf and preparing to pupate.

Figure 6. Pupa of an Argus tortoise beetle

Eggs are laid in the form of masses on the leaves and the developing larvae feed on foliage. Both larvae and adults chew areas from the leaf interior, producing characteristic holes in the center of leaves.

Tortoise beetle larvae feed on the underside of leaves. Characteristic of other kinds of tortoise beetles they produce a "fecal shield" that they carry on forked structures that project from the hind end. This is comprised of feces and old larval skins, which apparently provide some protection from predators. When the larva is full-grown it pupates on the leaf. Often the larva when full grown will wander from the host plant and pupae commonly may be found on adjacent plants.

Later the adult emerges. The adults will feed on leaves during midsummer for a few weeks. It is unclear if any then lay eggs and produce a second generation. However, it is likely that few if any do, and the adults found in summer are in reproductive dormancy (diapause). They will later leave plants and seek sites to survive through winter, emerging from this dormant condition the following spring.

Related Species: A few other tortoise beetles occur in parts of Colorado. Most of these also occur on morningglory family plants including the **mottled tortoise beetle**, *Deloyala guttata*, **golden tortoise beetle**, *Charidotella sexpunctata*, and the **striped tortoise beetle**, *Agroiconota bivittata*. Other tortoise beetles known to occur in Colorado are the **blacklegged tortoise beetle**, *Jonthonota nigripes*, and the **thistle tortoise beetle**, *Cassida rubiginosa*. The latter is an introduced species that can be common on Canada thistle.

Whitney Cranshaw July 2, 2020