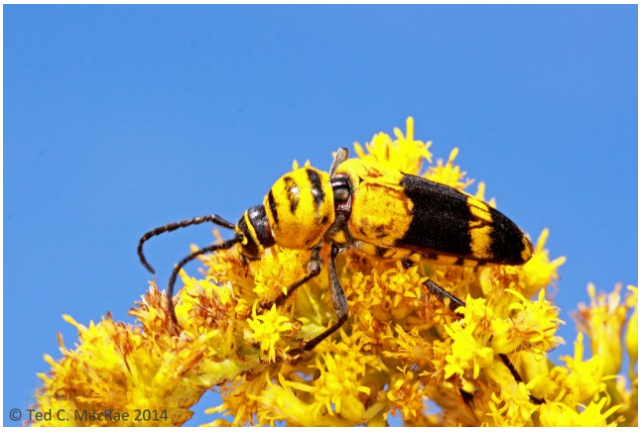
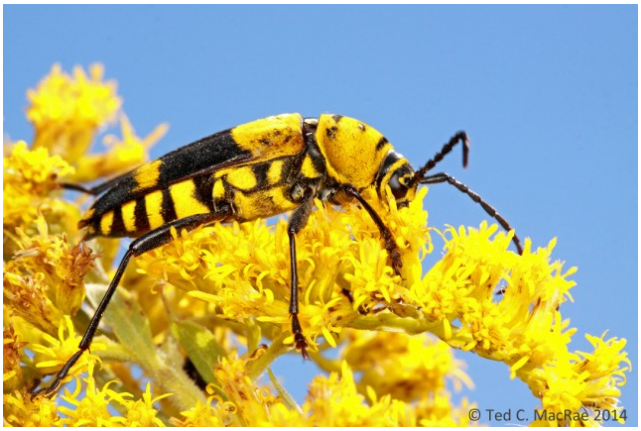


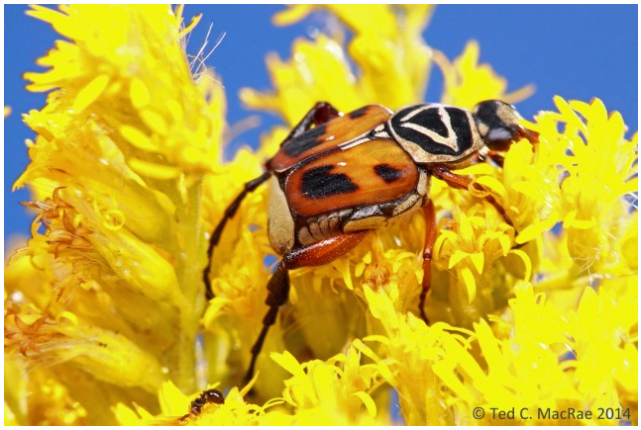


The beetle in these photos is one of two that I found in late September at a site in the lowlands of southeastern Missouri. I've not seen the beetle at this site before, but I knew it must occur here because of the stands of false indigo that I noted during an earlier visit to the site. Considering the large number of plants present, two beetles is much less than I would have expected to see (in fact, both beetles were found in a single patch of goldenrod). I have previously featured this species (see A classic fall 'bycid) from a site about 50 miles east of this one. At that site also only a few beetles were seen despite an abundance of larval host plants (but the adults occurring on snakeroot flowers instead of goldenrod). Only twice have I seen this species in numbers that I would consider plentiful (both times in western Missouri).

Amorpha borers and locust borers are part of a larger complex of black and yellow insects that visit goldenrod flowers in the fall. These include a variety of bees, wasps, and other beetles (e.g., the delta flower scarab, *Trigonopeltastes delta*—family Scarabaeidae), but perhaps the most abundant is the goldenrod soldier beetle, *Chauliognathus pensylvanicus*—family Cantharidae (also called the Pennsylvania leatherwing). One can presume that any or all of these species serve as models for the longhorned beetles—bees and wasps are obviously protected from most predators by their ability to sting, and the bodies of soldier beetles are chemically protected by cantharidin, a highly toxic terpenoid that causes blistering and irritation of mucous membranes at low doses and can be fatal at higher doses. As the mimics, amorpha borers and locust borers could be expected to be less abundant than the models. However, considering how difficult-to-see these beetles can be when sitting on goldenrod flowers, their black-and-yellow coloration seems as though it could just as easily serve a cryptic function. It is even possible that mimicry and crypsis both have contributed to evolution of these beetle's coloration.

Orange and Black on Gold

Ted C. MacRae[1]



***Trigonopeltastes delta* on goldenrod (*Solidago* sp.) flowers, Stoddard Co., Missouri.**

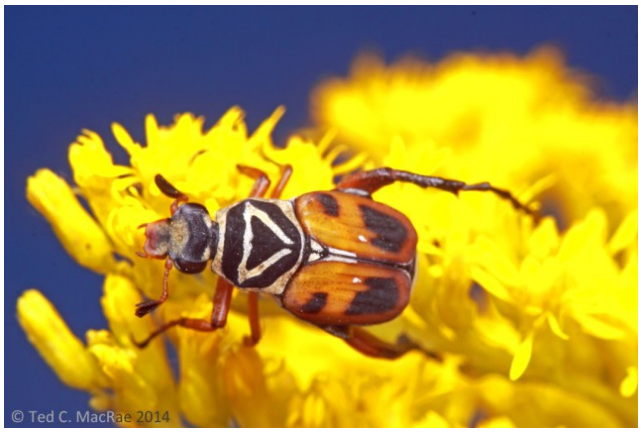
The spectacular amorpha borer, *Megacyllene decora*, was not the only black-and-gold colored beetle that I saw on the flowers of goldenrod (*Solidago* sp.) a few weeks ago. In addition were several delta flower scarabs, *Trigonopeltastes delta*. This species is much more commonly encountered than the amorpha borer—not only geographically but also throughout the season on a greater diversity of flowers. Nevertheless, I had failed in my previous attempt to photograph the species at

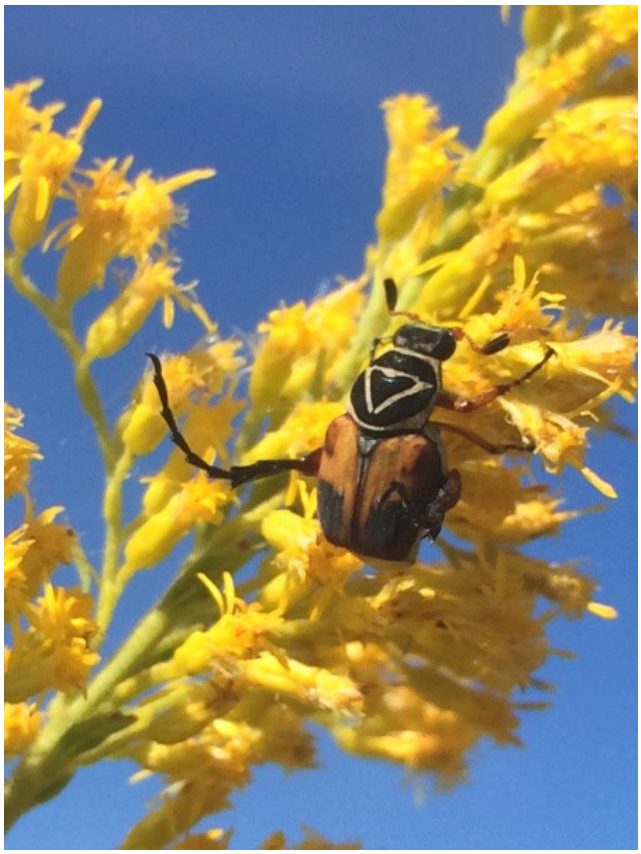
[1] Originally posted 9 October 2014 at the author's website, *Beetles in the Bush*, http://beetlesinthebush.wordpress.com. All photos by the author.

the very same locality just a few weeks earlier due to the much higher summer temperatures and resultant flightiness of the beetles.

In the case of this beetle, the scientific name almost completely describes the beetle—the genus name being derived from the Greek words *trigon* (i.e., triangle, triangular) and *pelt,*(i.e., a shield), referring to the triangular and shield-shaped pronotum, and the species name based on the Greek letter Δ ("Delta") in reference to the distinctive white triangle on the pronotum that resembles it. I mentioned the diversity of flowers on which adults of this beetle can be found. Pascarella *et al.* (2001)[1] found this species on 13 different plant species (including mass aggregations numbering in the thousands on inflorescences of Sabal palm,*Sabal palmetto*) in their study of flower-visiting insects in the Everglades National Park. In Missouri, I see these beetles most commonly on Queen Anne's lace (*Daucus carota*) and several other plants with white inflorescences such as American feverfew (*Parthenium integrifolium*), New Jersey tea (*Ceanothus americanus*), wild hydrangea (*Hydrangea arborescens*), and—most recently—hairy mallow (*Hibiscus lasiocarpos*). Interestingly, on this day there was an abundance of white-flowered snakeroot (*Eupatorium* sp.) in bloom at the same site, but I only saw the beetles on the yellow-flowered goldenrod.

It has been suggested that the Delta pattern on the pronotum and orange-and-black coloration of the elytra combine to mimic the appearance of paper wasps in the genus*Polistes*. Paper wasps are frequent visitors to many of the same flowers that these beetles frequent; however, the much smaller size of the beetles might suggest mimicry of aculeate hymenopterans (stinging wasps and bees) in general rather than paper wasps specifically. A more unusual type of mimicry has also been suggested in that a rear view of the beetle with its large, white, triangular pygidium seems to resemble the head of a hornet. Supporting this idea is the habit of the beetles to raise and hold their long hind legs in the air when disturbed in a manner that makes them resemble a hornet's antennae!





Defensive posture with hind legs raised above abdomen (bottom photo—taken with my iPhone).

[1] **Pascarella, J. B., Waddington, K. D. & P. R. Neal. 2001.** Non-apoid flower-visiting fauna of Everglades National Park, Florida. *Biodiversity and Conservation* 10(4):551–566 [abstract & pdf link].