



Hibiscus sp. (rose mallow), Gardenland Express Holiday Show, Missouri Botanical Garden. Photo by Nancy Clark, November 29, 2010.

flowers still on the *Tsutsuji* sp. (evergreen azalea “Autumn Amethyst”), and one *Camelia* sp. (“Winter Star”) with one flower also showing signs of severe frostbite.

Scattered rain drops becoming a light rain was enough to turn our thoughts to finding cover and the proximity of the Sassafras restaurant helped in determining that it was time for a warm lunch.



Desmocerus palliatus – elderberry borer

*Ted C. MacRae*¹

Last June I made two trips to the Loess Hills in northwestern Missouri to survey additional sites for *Cylindera celeripes* (swift tiger beetle), which my colleague Chris Brown and I had discovered in some of the area’s few remaining loess hilltop prairie remnants the previous year. One of these potential new sites was [Squaw Creek National Wildlife Refuge](#), where a few tiny slivers of hilltop prairie can still be found on the fingers of loess bluffs that border the refuge’s several thousand acres of restored wetlands that famously host large concentrations of snow geese and bald eagles during the fall and spring migrations. On the first visit, I had arranged to meet with Corey Kudrna, Refuge Operations Specialist, who was kind enough to take several hours out of his day to

¹ Reprinted from an article posted November 18, 2010 at <http://beetlesinthebush.wordpress.com>. Photo by the author.



personally guide me to each of the site’s loess hilltop prairie remnants.

As we crossed the highway right-of-way at the base of the bluffs on our way to the one of the remnants, we passed through a large patch of common elderberry, *Sambucus nigra* ssp. *canadensis*. Anytime I see patches of this plant, especially in June, I immediately think of *Desmocerus palliatus* (elderberry borer) – a spectacularly colored longhorned beetle (family Cerambycidae) that breeds exclusively in the living stems and roots of this plant. It is not a particularly rare species, but for some reason I have not had much success in finding this species. In my close to three decades of collecting beetles, I had encountered perhaps a half dozen individuals – never more than two at the same time. Still, when I get the chance to look at elderberry I look for this beetle, and when I did so this time I was delighted to see one within a few moments of entering the patch. I was ecstatic when I saw another one almost immediately after the first, and I was stunned when I realized that they were all around me! Good fortune continued on my subsequent visit two weeks later, when I was able to spend a little more time trying to get a good field photograph. Wind was a problem, the beetles were easily alarmed, and their tendency to rest in the upper reaches of the plant made it difficult to brace myself and the camera while shooting, making this a rather difficult subject to get a good photograph of. The photo shown here is literally the last of around two dozen that I took and is the only one that I really like.

Many cerambycid beetles are mimics of other more noxious species, mostly ants and wasps. However, elderberry borers appear to be the exception in that they are themselves noxious. The cobalt blue and bright orange coloration of

the adults screams aposematic (warning) coloration, and it is reasonable to assume that they accumulate in their bodies for defensive purposes the cyanogenic glucosides produced by elderberry plants (Huxel 2000). Even their movements are those of a chemically protected model - lumbering and clumsy, without the alert evasiveness usually seen with other flower longhorn species. Presumably this species participates in a Müllerian mimicry complex involving netwinged beetles (family Lycidae, particularly species in the genus *Calopteron*) and perhaps *Pyromorpha dimidiata* (orange-patched smoky moth, family Zygaenidae) as well, and it may serve as a Batesian model for the equally colorful but completely innocuous *Lycomorpha pholus* (black-and-yellow lichen moth, family Arctiidae).

REFERENCE:

Huxel, G. R. 2000. The effect of the Argentine ant on the threatened valley elderberry longhorn beetle. *Biological Invasions* 2:81–85.



North America’s Largest Stag Beetle

Ted C. MacRae¹



The insect in these photos is, of course, a fine example of a male *Lucanus elaphus* – the giant stag beetle (family Lucanidae). This striking insect is easily among North America’s most distinctive and recognizable species by virtue of the enormously fearsome appearance belies the true nature of this harmless beetle, which spends its days feeding on



sap that flows from wounds on the trunks and roots of trees. Males use their massive mandibles in combat with other males, not for “biting,” but rather as tools to pry and lift their adversaries before dropping them to the ground. Some marvelous photos of this behavior in a related super-sized mandibles sported by the males. Its European species can be seen at [Stag Beetles Lucanus cervus Mating Behaviour](#).

I collected this specimen many years ago at an ultraviolet light (“blacklight”) that I had setup in the pine/oak forests at Pinewoods Lake, Carter Co., in the southeastern Ozarks – one of my favorite 1980's beetle collecting spots. This was in my early days of studying beetles, during which time I was actively collecting material as part of my statewide surveys for the families Buprestidae (MacRae 1991) and Cerambycidae (MacRae 1994). *Lucanus elaphus* is not a commonly encountered species, especially in the western reaches of its distribution here in Missouri, and I’ll never forget my rabid excitement when I encountered this fine major male at my blacklight sheet. For many years afterward it remained the only individual that I had ever encountered, until a few years ago when I came across a group of two males and one female feeding on a sap flow in a wet bottomland forest along the Mississippi River in the lowlands of southeastern Missouri. I encountered another male the following year at a nearby location “rafting” on debris in floodwaters from the nearby river, and two weeks later at that same site I picked up several males and females in a fermenting bait trap.² Like most “uncommon” species with broad distribution across the eastern U.S., I suspect that

¹ Modified from an article posted December 30, 2010 at <http://beetlesinthebush.wordpress.com>. Photos by TCM.

² I have used fermenting bait traps to collect a wide variety of beetles, but especially longhorned beetles. My recipe is based