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Source: Florida Entomologist, 93(4) : 647-648

Published By: Florida Entomological Society

URL: https://doi.org/10.1653/024.093.0427

THE FLYING SCARAB BEETLE GAMES OF WEST AFRICA AND THE AMERICAN SOUTH: CULTURAL TRANSFER OR PARALLEL EVOLUTION?

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When I was a boy in Kentucky during the 1950s, a common summer time game was flying June beetles. June beetles, *Cotinis nitida* (L.), are green cetoniine scarabs whose larvae breed in humus and roots in lawns and gardens in eastern U.S. (Arnett 1993). We chased and hand captured these diurnally active beetles, as they made their curving flights a couple of feet above the suburban lawns. A thread was tied to a back leg and then the beetles were tossed into air or whirled around at the end of the thread until they started to fly with an audible buzz in circles around or above us. Flying these living toys was great summer fun.

While working in Ghana during May 1999, I was startled to see a boy about 10 years old flying a scarab beetle at the end of a thread. On closer inspection, the beetle proved to be a green cetoniine scarab very similar to the June beetle of my boyhood. This flying beetle makes a low pitched buzz or drone that is called "tunoo" in Fanti (Henry Davis, Biological Control laboratory, International Institute of Tropical Agriculture, Cotonou, Benin, personal communication), one of the many languages in Ghana. I negotiated the purchase of the boy's beetle so that it could be identified, which pleased the boy but perplexed the local men observing the deal. This Ghanaian scarab is *Pachnoda marginata* Fabricius, identified by Georg Goergen (Biological Control laboratory, International Institute of Tropical Agriculture, Cotonou, Benin). This species is one of the numerous African cetoniine beetles, and occurs in much of West Africa (Rigout 1989).

Pachnoda marginata and *Cotinis nitida*, the American June beetle, (Fig. 1) are remarkably similar in gross morphology, coloration (in life both are green with tan to yellow margin on elytra and thorax), and size (18-26 mm). In Ghana the beetles are tethered by tying a string between the pronotum and elytra (Fig. 1), a more secure method than that we used, because we often lost the beetles when a tethered leg was pulled off.

Cetoniine beetles are also flown in Benin where the game is called "Vaann" in the Gun and Akan languages, both for the beetles and the sound that flying beetles produce (Adande Marcellin, Biological Control laboratory, International Institute of Tropical Agriculture, Cotonou, Benin, personal communication). In Benin both girls and boys fly the beetles and children compete to see whose beetle will stay airborne the longest. There are many similar Cetoniines in Africa in the genus *Pachnoda* (Rigout 1989) and it is likely that some of these are flown as well. Indeed, *Pachnoda*, probably *P. ephippiata* Gerstacker, is flown by children in Kenya in East Africa (W. A. Overholt, personal communication).

One cannot help wondering whether flying June beetles in the American South is an old West African game introduced by the slaves. The many "slave forts" that line the coast of Ghana are prominent reminders of the large numbers of West Africans sent to the Americas. Larger cultural aspects such as language patterns and musical elements are generally acknowledged to have been introduced from West Africa to the Americas by these enslaved people (Walker 2001). But customs related to play were transferred as well. An excellent example of an introduced game is the West Indian game of "warri". This is a serious game of rapid calculation involving moving counters, the gray colored sea beans called nicker beans (*Caesalpinia bonduc* L., Fabaceae), between carved shallow depressions on a wooden board. This game originated in Africa and an almost identical form of the game, with the same pan tropical sea beans, is considered the national game of Ghana, where it is called "oware" (personal observation). These nicker beans and other dense, hard sea beans, such as the so called hamburger beans (*Dioclea* and *Mucuna* species, Fabaceae) are also used by children in Ghana (Henry Davis, personal communication) and in Florida (Luke Kasarjian, personal communication) as burning beans. Children rapidly rub the sea beans on a sidewalk, street, or large rock causing them to become hot, and then quickly touch the hot beans to the exposed skin of a brother, sister or other victim.

Burning beans and the flying beetle games could be cases of parallel evolution or cultural transfer. Cultural transfer often is unrecognized. The American comic character Bugs Bunny is based on the Bre'r Rabbit tales of various West African ethnic groups (Fishkin 2001). The verb "bug" in this case does not mean insect, but is a verb meaning "to annoy", and originates from the Wolof language spoken by the largest group of Africans to arrive in the Americas (Fishkin 2001).

Fig. 1. Comparison of the American June beetle *Cotinis nitida* (left) and the West African *Pachnoda marginata*, both used in the flying beetle games.

The diurnally active Cetonines, with their bright green colors and buzzing flight are very apparent insects. Their fixed elytra, and long wings which unfold laterally, make them excellent fliers (for beetles), probably better suited to being flown than other beetles. Either as old unrecognized cultural transfer or amazing parallel evolution, these flying beetle games are interesting cases of cultural entomology. I thank Georg Goergen for identifying the Ghanaian beetle, Henry Evans, Adande Morcelli, and W. A. Overholt for information related to African flying beetle customs, and Luke Kasarjian for information about burning beans in Florida. Mike Thomas kindly made the photomontage image of the beetle specimens.

Summary

A children's game involving catching, tethering, and then flying the cetoniine scarab *Pachnoda marginata* was observed in Ghana. A very similar cetonine beetle, *Cotinis nitida*, is flown by children in the American South. The flying beetle game was probably introduced from West Africa to the American South by slaves.

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