

SCIENTIFIC NOTE

Phloeoxena signata (Dejean): Northern range extensions to Maryland and Tennessee, U.S.A., and the first record for Costa Rica (Coleoptera: Carabidae)

The recent discovery of a specimen of *Phloeoxena signata* (Carabidae: Lebiini: Pericalina) at the Patuxent Research Refuge in Prince Georges County, Maryland prompted a review of the known distribution of this primarily tropical ground beetle. It is the most widespread and variable species of the genus, which includes 32 species and has its center of diversity in Middle America (Shpeley and Ball 2000). *Phloeoxena signata* has been reported from Panama to North Carolina (Ball 1975; Shpeley and Ball 2000) and southern Virginia (Hoffman 1997) making the Maryland record the first for the state and a noteworthy northward range extension (from Halifax County, Virginia, a distance of about 380 km.). Additional Virginia specimens have now been collected, and several recent Tennessee specimens are reported, also representing a new state record. We also report the first known record for the species in Costa Rica, filling a gap in the known distribution between Nicaragua and central Panama. The specimens are deposited in the USNM, Smithsonian Institution, Washington, the Carnegie Museum of Natural History, Pittsburgh, and U.S. National Park Service voucher collection at the George Washington Memorial Parkway Headquarters, Virginia.

The Maryland specimen (Fig. 1), a female, is labeled: "MARYLAND: Pr. Geo. Co., 10 km NE Bowie (Central Tract Patuxent Res. Ref.), 39°03'N, 76°49'W, 24 March 2006, Coll. W. E. Steiner / Under bark of dead standing red maple in open swamp forest." The beetle was found under loose, dry bark about 1.5 m above ground on the north (shaded) side of a trunk about 25 cm in diameter. The surrounding mature forest was of mixed hardwoods including large oaks and beech. Mid-afternoon temperature was 9°C at the locality. The beetle probably overwintered at this site.

Five most recent specimens are labeled "VIRGINIA: Fairfax Co., Great Falls N. P., Swamp Trail, 38°59.4'N, 77°15.2'W, 1–14 June 2006, Malaise trap in mature forest; D. R. Smith" (1); same data except "15–21 June 2006" (1); "VIRGINIA: Fairfax Co., Turkey Run, west of mouth; 38°58'N, 77°09.6'W; 7–21 June 2006; Malaise trap in forest; D. R. Smith" (2); same data except "east of mouth; 38°57.9'N, 77°09.4'W" (1). These are also from mixed hardwood forest and represent the first records from the Potomac River gorge. *Phloeoxena signata* has not yet been found on nearby Plummers Island, Maryland, in spite of a long history of carabid study (Erwin 1981) and recent collecting efforts (including use of Malaise traps) at this locality.

The following Tennessee specimens were all collected by stripping bark from *Carya ovata* (Mill.) K. Koch (shagbark hickory) over a beating sheet. None were found below one half meter or above 2 meters. Label data and accompanying notes are as follows: "Tennessee: Hamilton County, Harrison State Park, 19 March 2003, R. D. Ward" (5), from a copse of trees along the Tennessee River (Chickamauga Lake); "Tennessee: Hardin County, 5 Km W Southside, Chambers Creek, 30 Oct. 2004, R. Ward" (1), forested bottom lands, inland from the Tennessee River; same data except "3 Km SE Childers Hill at Leigh Creek, 25 March 2002, R. Ward" (1); "Tennessee: Overton Co., 2 Km W Alpine, 23 May 2005, R. D. Ward" (1), from a hillside on the Cumberland Plateau.

The Costa Rican specimen, a male, is labeled: "COSTA RICA: Guanacaste Prov., Mansión, 29 March 1987 / W. E. Steiner, J. M. Hill, S. E. Frye, collectors / ADP 101502 / Comp. w/ Descrip., *Phloeoxena signata* Dej., Det. T. L. Erwin 2001." Field notes (WES) describe a brief roadside stop at this locality where beetles were taken "under logs and leaf litter near a dry creek" but no further details are available.

Ellytral coloration of all of the above specimens is of the widespread bicolored condition figured by Ball (1975, Fig. 111B); Ciegler (2000, Fig. 77) and Maddison (2005) and the pronota have the dark central spot not reaching the posterior margin.

The single Virginia occurrence reported previously (Hoffman 1997) and the rarity of *P. signata* in collections led the state's Natural Heritage Program to list the beetle (Roble 2003) among species of possible conservation concern and in need of further inventory.

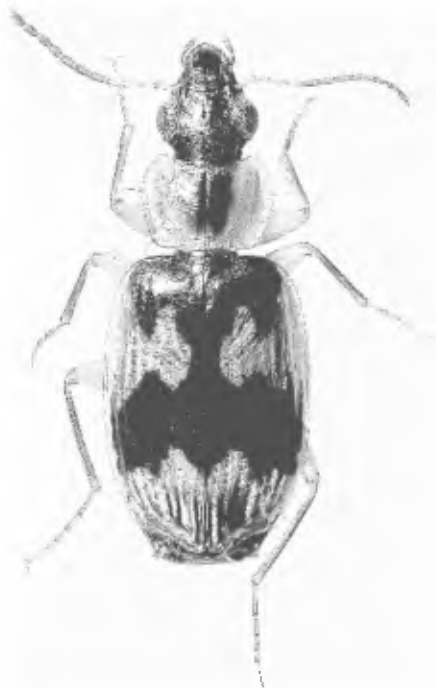


Fig. 1. *Phloeoxena signata*, dorsal habitus. Length of beetle 5.3 mm.

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Dedication. In honor of George E. Ball on the occasion of his 80th birthday, we dedicate this note.

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