The Species of *Purpuricenus* Dejean (Coleoptera: Cerambycidae) Occurring in Maryland

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ABSTRACT: Three species of the genus *Purpuricenus* Dejean (Coleoptera: Cerambycidae) are known to occur in Maryland: *P. axillaris* Haldeman 1847, *P. humeralis* (Fabricius 1798), and *P. paraxillaris* MacRae 2000. Comparisons, color photographs and a key to species are provided to aid in their identification, and comments are made on their distribution, host plants, and seasonal occurrence in Maryland.

INTRODUCTION

Cerambycid beetles of the genus *Purpuricenus* are among the more attractive members of the family in North America. Their large size and vivid red or orange elytral markings make them favorites among collectors. Three species in the genus are found in the eastern United States: *P. axillaris* Haldeman 1847, *P. humeralis* (Fabricius 1798), and *P. paraxillaris* MacRae 2000. Adults of all three species are strongly attracted to fermenting baits (e.g. Champlain and Knull 1932), the use of which has resulted in the accumulation of large series of specimens from several states. It was this accumulation of material that eventually allowed the recognition of two species among material to which the name *P. axillaris* had previously been assigned (MacRae 2000). Examination of type material was needed in order to clarify which of the two species the existing name should be applied to and which should be described as a new species, named *P. paraxillaris*. All three of the species occurring in eastern North America have been recorded from Maryland, with most of the Maryland records representing specimens collected by John D. Glaser with the use of fermenting bait traps. This paper summarizes the recorded occurrence of *Purpuricenus* species in Maryland and provides comments on their diagnosis, a key to the adults, and color photographs of the adults and key characters of each species to aid in their identification.

Key to Adults of *Purpuricenus* Species Known to Occur in Maryland
(Adapted from MacRae 2000)

1. Posterior margin of basal elytral markings distinctly oblique; apical dark area extending forward along suture and reaching scutellum ..... *P. humeralis* (Fabricius)

1'. Posterior margin of basal elytral markings more or less transverse; apical dark area not extending forward along suture to scutellum 2

2 (1'). Discal calluses of pronotum weak, median callus without polished apical line; lateral pronotal tubercles small, angles obtuse; basal elytral punctation relatively finer and sparser; elytral apices subtruncate, angles not distinctly dentate; basal elytral markings yellow to orange ..... *P. axillaris* Haldeman

2'. Discal calluses of pronotum distinct, median callus prominent and with polished apical line; lateral pronotal tubercles well developed, angles acute; basal punctation of elytra relatively coarser and denser; elytral apices emarginate, angles distinctly dentate; basal elytral markings orange to red-orange ..... *P. paraxillaris* MacRae

Purpuricenus humeralis (Fabricius)

Diagnosis: *Purpuricenus humeralis* (Figure 1) may be immediately recognized by the triangular red markings covering the humeral region of the elytra. The markings may extend inwards along the elytral base to reach the scutellum, but they do not surround the scutellum as is the case with *P. axillaris* and *P. paraxillaris*. The basal elytral markings are usually dark red but may be red-orange. The punctation of the pronotum is coarsely, contiguously punctate, much coarser than in *P. axillaris* and *P. paraxillaris*, and that of the basal areas of the elytra is also coarser with the punctures bearing fine, suberect hairs. Adult size is variable, ranging from 11-20 mm (0.43-0.79 in.) in length and averaging around 15-16 mm (0.60-0.63 in.), with females being slightly larger than males.

Distribution: The most broadly distributed of the three species, *P. humeralis* has been recorded in the northeastern United States and southeastern Canada west to Manitoba and in the southeastern United States from South Carolina west to Oklahoma (MacRae 2000). I have examined a total of 20 specimens from Maryland collected at Green Ridge State Forest (Allegany Co.), Fort Detrick (Frederick Co.), Mineral Spring (Garrett Co.), Beltsville, Berwyn, and College Park (Prince Georges Co.), and "Ocean Beach" (presumably Ocean City, Worcester Co.).

Biology: This species is the most polyphagous of the three, and indeed of all North American *Purpuricenus*. I have examined specimens reared from dead branches of a variety of plants, including maple (*Acer* L.), alder (*Alnus* P. Mill.), hickory (*Carya* Nutt.), redbud (*Cercis* L.), mulberry (*Morus* L.), oak (*Quercus*

L.), and black locust (*Robinia pseudoacacia* L.). In Missouri, I have reared adults from a dead branch of sugar maple (*Acer saccharum* Marsh.) and collected them on dead logs of red maple (*Acer rubrum* L.) and several species of oak and hickory (MacRae 2000). Host plant information is lacking for the Maryland specimens that I have examined, but Lugger (1884) reported rearing the species in Maryland from sugar maple. Although this species has been collected commonly in fermenting bait traps in Missouri and Pennsylvania (MacRae 2000), I have not examined any Maryland specimens collected in such traps. Specimens from Maryland have been collected from mid-May to mid-July.

***Purpuricenus axillaris* Haldeman**

Diagnosis: *Purpuricenus axillaris* (Figure 2) is immediately distinguished from *P. humeralis* by its transversely-shaped elytral markings, which cover the basal half of the elytra. *Purpuricenus paraxillaris* has similarly shaped basal elytral markings; however, *P. axillaris* is distinguished from that species by its weak discal pronotal calluses, of which the median callus lacks a polished apex. It may be further distinguished by the small and obtusely angled lateral pronotal tubercles, the finer and sparser basal punctation of the elytra, the weakly dentate, obtuse sutural angles of the elytral apices, and its smaller size (average length 3 mm [0.12 in.] less than *P. paraxillaris*). The basal elytral markings vary from yellow to red-orange, but in most specimens they are orange as compared to red-orange for *P. paraxillaris*. Adult size is variable, with specimens from the northeastern United States ranging from 11-17 mm (0.43-0.67 in.) in length and averaging about 14 mm (0.55 in.), with no appreciable difference in size between males and females in the material I have examined.

Distribution: *Purpuricenus axillaris* has been recorded from scattered locations across the eastern United States from New York south to Florida and west to Oklahoma (MacRae 2000). I have examined a total of 39 specimens collected in Maryland, nearly all of which were collected during the 1980s and 1990s by John D. Glaser with the use of fermenting bait traps. Most of these were collected at Green Ridge State Forest and Polish Mountain (Allegany Co.), Bear Pond Mountains and Sideling Hill (Washington Co.), and Prettyboy Reservoir (Baltimore Co.). One additional specimen from Glen Echo (Montgomery Co.) has also been examined.

Biology: This species is apparently associated with hickory, and all of the reared material I have examined has emerged from dead branches of plants in that genus. Literature references to this species utilizing oak refer to *P. paraxillaris*, which was confused with *P. axillaris* until its description a few years ago (MacRae 2000). According to Craighead (1923) and Blackman and Stage (1924), the larvae are twig girdlers, with habits similar to those of *Anelaphus villosus* (Fabricius). No biological information has been gleaned from the

Maryland material I examined other than an attraction to fermenting bait traps. Dates on Maryland specimens range from mid-June to early-August, but the majority of individuals have been captured from late June to late July.

Purpuricenus paraxillaris MacRae

Diagnosis: Like *P. axillaris*, *Purpuricenus paraxillaris* (Figure 3) is immediately distinguished from *P. humeralis* by its transversely-shaped elytral markings, which cover the basal half of the elytra. In this regard it resembles *P. axillaris*, from which it differs by its well-developed discal pronotal calluses and polished apical line on the median callus, the distinct, acutely angled lateral pronotal tubercles, the moderately dense basal punctation of the elytra, the distinctly dentate apical angles of the elytral apices, and its robust, larger size (average length 3 mm [0.12 in.] greater than *P. axillaris*). The basal elytral markings are generally red-orange and cover the basal half of the elytra; however, in some specimens they may be orange rather than the more typical red-orange. As in the other species, adult size is variable, with specimens from the northeastern United States ranging from 12-21 mm (0.47-0.83 in.) in length and averaging close to 18 mm (0.71 in.). There was no appreciable difference in size between males and females in the material I have examined.

Distribution: *Purpuricenus paraxillaris* is known from scattered localities across the eastern United States from New York south to Florida and west to Oklahoma and Texas (MacRae 2000). A total of 213 specimens have been examined from Maryland, the vast majority of these collected by John D. Glaser during the 1980s and 1990s with the use of fermenting bait traps. Most (n = 187) of the specimens were collected at Green Ridge State Forest and Polish Mountain (Allegany Co.), and additional specimens seen from Rocky Gap State Park and Sideling Hill (Allegany Co.), Prettyboy Reservoir and Sparrows Point (Baltimore Co.), Mt. Etna (Garrett Co.), and Bear Pond Mountains and Sideling Hill (Washington Co.). All of the Maryland specimens I examined were included in the paratype series when this species was described.

Biology: This species is apparently associated with oak and the closely related chestnut (*Castanea* P. Mill), as determined by examination of material collected by Josef N. Knull and Harry B. Kirk in Pennsylvania. This species was unrecognized until recently, and it is likely that all literature references to *P. axillaris* on oak actually refer to this species (MacRae 2000). This includes Lugger (1884), who reported rearing it from scarlet oak (*Quercus coccinea* Muenchh.) in Maryland. A great majority of specimens for this species have been collected in fermenting bait traps. The largest series comes from Maryland in traps placed in oak/hickory forest (Glaser, personal communication). Dates on Maryland specimens range from mid-June to mid-August, with most specimens collected from early to late July.

Figure 1. ***Purpuricenus humeralis*** **(Fabricius). Dorsal habitus, male.**

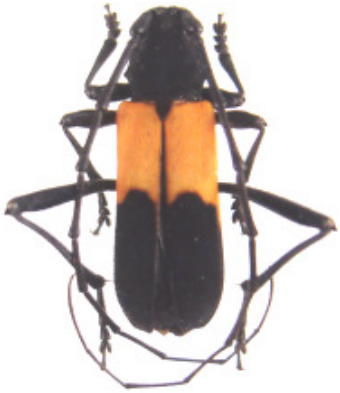

Figure 2. ***Purpuricenus axillaris*** **Haldeman. Dorsal habitus, male.**

Figure 3. ***Purpuricenus paraxillaris*** **MacRae. Dorsal habitus, male**

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