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A new *Triodopsis juxtidentis* subspecies (Gastropoda: Pulmonata) from West Virginia, U.S.A.

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The Appalachian Mountains of North America hold a unique diversity of land snails, including those within the family Polygyridae genus *Triodopsis*. West Virginia has ten or more representatives of the genus (Hubricht, 1985), displaying variations upon the conchological theme of a depressed heliciform shape with a reflected peristome bearing three lamellae. However, it remains unclear whether all of the recognized variants on this theme represent species as commonly defined. In the case of the *Triodopsis juxtidentis* (Pilsbry, 1894) subgroup as defined by Emberton (1988)—*T. juxtidentis*, *T. discoidea* (Pilsbry, 1904), *T. neglecta* (Pilsbry, 1899), and *T. pendula* Hubricht, 1952—no penial morphology or allozyme differences are known (Emberton, 1988). Conversely, mitochondrial DNA analysis that included five *T. juxtidentis* specimens suggests this putative species is not monophyletic (Perez *et al.*, 2014). Rampant variation in shell morphology among *Triodopsis* species creates further taxonomic and identification challenges. Without additional supporting evidence for species-level differences, such as anatomical and genetic analyses, a conservative taxonomic approach is to recognize regionally distinct forms as subspecies. A unique form from the upper Bluestone River watershed is described here as *Triodopsis juxtidentis robinae* subsp. nov.

Family Polygyridae (Pilsbry, 1895)

Genus *Triodopsis* Rafinesque, 1819

***Triodopsis juxtidentis* (Pilsbry, 1894)**

***Triodopsis juxtidentis robinae* subsp. nov.**

Diagnosis. Shell distinguished by a relatively wide peristome, markedly constricted behind; an aperture periphery that is more triangular rather than round or oval, tallest just to the right of its attachment to the body whorl, with the palatal edge not high and round, widest below an imaginary horizontal midline (viewed with spire up, in the plane of the aperture), wider than tall; a strong parietal lamella that is curved toward the palatal denticle, not pointing above or below (for the three distinct shell accretions on the peristome, here “lamella” refers to that on the parietal wall, while “denticle” refers to those on the palatal and basal walls); a palatal denticle that is often (but not always) wide at the distal end, with the apex of the denticle pointing inward of the parietal lamella; and a basal buttress with a denticle that is deeper than wide, transverse upon the buttress. No other described taxon has a triangular aperture along with a parietal lamella pointing at the palatal denticle and a basal denticle upon a buttress.

***Triodopsis juxtidentis robinae* subsp. nov.**

Type locality. Brush Creek Preserve, The Nature Conservancy, Mercer County, West Virginia, U.S.A.; on and in leaf litter on steep forested slopes of Brush Creek above its confluence with the Bluestone River.

Holotype. CM103371, U.S.A. West Virginia, Mercer County, Brush Creek Preserve, Timothy A. Pearce, 1 October 2007. Shell (Figure 1) on a steep rocky slope with a mixed eastern hemlock (*Tsuga canadensis* L.(Carr.))-hardwood forest canopy, on the east side of Brush Creek above its confluence with the Bluestone River (within 10m of UTM, NAD83, 17S, 0494625, 4147911).

rugosa Brooks and MacMillan, 1940 and *T. anteridon* (Pilsbry, 1940) the shell of *Triodopsis j. robiniae* subsp. nov. is larger, the triangular aperture is more depressed, and the palatal denticle is not buttressed below. Compared with *T. picea* Hubricht, 1958, the aperture of *Triodopsis j. robiniae* subsp. nov. is more triangular and more broadly reflected. Compared with *T. pendula* the shell of *Triodopsis j. robiniae* subsp. nov. is larger, the peristome is not as dished, and the parietal lamella points at the palatal denticle, not above. *Triodopsis pendula* occurs geographically nearest to *Triodopsis j. robiniae* subsp. nov. in southwest Virginia (Hubricht, 1985). In comparison to *T. discoidea*, or *T. neglecta* (not shown), the aperture of *Triodopsis j. robiniae* subsp. nov. is more triangular, and not as tall and rounded toward the palatal side. A basal buttress is present, unlike *T. discoidea*. *Triodopsis discoidea* and *T. neglecta* occur farther to the west of *Triodopsis j. robiniae* subsp. nov., *T. discoidea* nearest in Kentucky and Ohio and *T. neglecta* beyond in Missouri and Arkansas (Hubricht, 1985).

Variation. Individual shells of *Triodopsis j. robiniae* subsp. nov. vary in overall shape, with wider diameter and more loosely-coiled shells often being more depressed. The aperture in smaller shells may be more crowded, with the palatal denticle and peristome coming close to the parietal lamella, and the interdenticular sinus somewhat collapsed (Fig. 3, j). The parietal lamella may become abruptly higher at its distal (palatal) point, or increase in height more regularly. The palatal denticle is variable, from wide at the tip (either blunt or angular), to triangular (Figure 3, h). This denticle sometimes has an indentation, giving the superficial appearance of a divided tooth (Figure 3, m). The basal buttress may be uneven at its top edge, suggesting a tiny denticle to the palatal side of the basal denticle (Figure 3, j, l).

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