

SCIENTIFIC NOTE

AN UNUSUAL MORPHOTYPE OF *CAENODELPHAX TEAPAE* (FOWLER) (HEMIPTERA: FULGOROIDEA: DELPHACIDAE)¹Ashley C. Kennedy² and Charles R. Bartlett²

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Caenodelphax teapae (Fowler) is a common, widespread Neotropical species. This species is potentially pestiferous as it has been reported on carrots, sugarcane, kidney beans and other crops, and is a vector of *Urochloa hoja blanca* tenuivirus in plantain signalgrass (*Urochloa plantaginea* (Link) R. Webster) (Lapierra and Signoret 2004, Wilson 2005, Kennedy and Bartlett 2014). The species was first described from Teapa, Mexico in 1905 (in *Liburnia* Stål), and subsequently established as the type species of *Caenodelphax* Fennah, 1965 (by original designation). *Caenodelphax* was recently revised and is now monotypic (Kennedy and Bartlett 2014). Here we report the unusual retention of juvenile features (i.e., paedomorphosis) in adult *C. teapae*.

Caenodelphax teapae exhibits a predictable level of geographical variation in coloration and morphology. Individuals are usually macropterous and between approximately 2.0-3.5 mm in length, dark brown to black in body color, with concolorous carinae and paler (yellow) antennae, beak and legs (Figs. 1A-C). Females are usually larger and paler than males. Brachypters are uncommon (and usually female) and much paler than macropters, but bear a comparable color pattern.

Like other fulgoroids (e.g., Yang and Yeh 1994), *C. teapae* nymphs possess sensory pits on the head and thorax, but these are not usually expressed in adults. However, of 251 adult *C. teapae* collected from one site in Belize (Pook's Hill, Cayo District, 17.152799°, -88.851183°) in January 2003 (by CRB), 5 (4 males and 1 female) displayed unusual pits (Figs. 1D-F). (Specimens in the University of Delaware Insect Research Collection, Newark, DE.) These pits were similar in arrangement to those of late instar (presumably 5th) *C. teapae* nymphs (Figs. 1G-I). The nymphal head differs most obviously from the adult in that the median carina of the frons is paired and widely separated in the nymph, paired and approximate in the adults with pits, but fused up to the compound eyes in the normal adult.

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Among delphacids, sensory pits are characteristic of adult *Achorotile* Fieber and *Laccocera* Van Duzee (the former genus also with a paired median carina of the frons, similar to that of nymphs), and the retention of pits in the adults of these genera is presumably through neoteny. Normally the pits are not evident in adults of other taxa, except possibly as 'light specks' (Emeljanov 1996: 141), as in *Bakerella* Crawford, *Cemus* Fennah, *Euconomelus* Haupt and *Phyllodinus* Van Duzee, for example.

The pattern of pits in the adult *C. teapae* is similar to those illustrated for nymphs of other Delphacini including *Chloriona* Fieber (Emeljanov 1996), *Delphacodes kuscheli* Fennah (Remes-Lenicov et al., 2008), *Sogatella kolophon* (Kirkaldy) and *Toya idonea* (Beamer) (as *Delphacodes*; Ballou et al., 1987); they are different from *Flavoclypeus nigrifacies* (Muir) (as *Delphacodes*; Calvert et al., 1987), *Stobaera* Stål (Emeljanov 1996) and *Pissonotus delicatus* Van Duzee (Wilson and Tsai 1991). The general arrangement of nymphal pits was used as a phylogenetic feature for the higher classification of Delphacidae by Emeljanov (1996), but at present, too few Delphacini have had nymphal features described to determine how the arrangement of pits varies within the Delphacini, and further study is needed to better describe post-embryonic ontogeny and phylogenetic patterns in pit arrangement.

A similar observation on neoteny has been observed in the Caliscelidae (e.g., Gnezdilov 2015), along with other features that are considered neotenous (e.g., simplified venation, reduction of teeth on the first hind tarsomere (Shcherbakov 2007), and structure of the metatibial spur (Wilson and McPherson 1981)).

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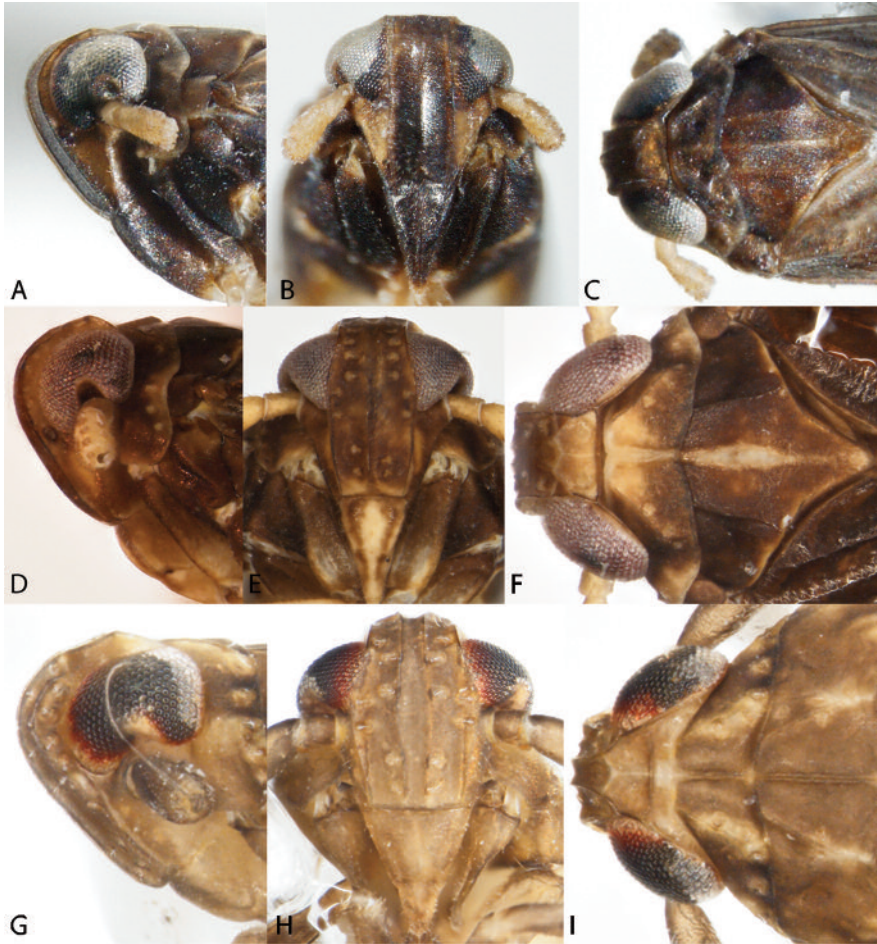


Fig. 1. *Caenodelphax teapae*, A-C. normal adult (female, Costa Rica), A. lateral view of head, B. front, C. head and thorax, dorsal view, D-F. adult with pits (male, Belize), D. lateral view of head, E. front, F. head and thorax, dorsal view, G-H. nymph (Costa Rica), G. lateral view of head, H. front, I. head and thorax, dorsal view.