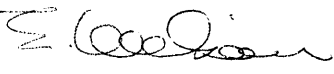


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***Protochrysomyia howardae* from Rancho La Brea, California,
Pleistocene, New Junior Synonym of *Cochliomyia macellaria*
(Diptera: Calliphoridae)**

W. D. Pierce (1945) described *Protochrysomyia howardae* from a series of puparia (Nat. Sci. Mus. Los Angeles Co., Invert. Paleo. [LACMIP] syntypes 3073-3083, 6439-6440) found in the end of a bone fragment of a Pleistocene bird (*Teratornis merriami* Miller) from the Rancho La Brea asphalt deposits, Los Angeles, California. Pierce asserted that he named the new taxon because “. . . little good work [had] been done in describing the puparia of modern flies.” His frustration at not having a comprehensive identification guide is evident, but he did not indicate whether he had consulted specialists with knowledge of calliphorids. That the name *P. howardae* has stood until now is testimony to the fact that the taxonomy of fossil and recent insects have generally been considered separate disciplines; catalogs of modern insects typically ignore names of fossils, even those based on Pleistocene forms.

The *Teratornis* fragment (LACM B2309) was collected at 6.5 m (21.5 feet) deep in grid E-3 of Pit 3 at Rancho La Brea (Miller and Peck 1979). Although no direct age data exist for the types of *Protochrysomyia howardae* or the bird with which they were associated, radiocarbon dates of *Smilodon californicus* Bovard bone collagen at the 6.7 m (22 foot) level elsewhere in Pit 3 suggest an age of some 21,000 C¹⁴ years (Berger and Libby 1968).

A syntype of *Protochrysomyia howardae* that we studied (LACMIP syntype 3075) belongs to *Cochliomyia macellaria* (Fabricius). We are designating that specimen as lectotype of *P. howardae*, thus reducing the name *Protochrysomyia* to an objective synonym of *Cochliomyia*. LACMIP syntypes 3073-3074, 3076-3083, 6439-6440 become paralectotypes. Pierce (1945) correctly noted that the hind spiracles had open peritremes, placing his new species in the same group as *C. macellaria* and *Phormia regina* (Meigen). The walls of the spiracular slits

have lateral swellings that distinguish this species from *P. regina*. The posterior tubercles of the puparia are as for *C. macellaria* as well shown in Hall (1948). A row of spines on segment 10 is interrupted dorsally and is absent on the entire dorsum of segments 11 and 12. Besides examining the exterior shell of the puparium, we broke off the anterior portion to free the last instar mouth-parts that generally adhere to the inside of the exoskeleton; the asphalt around the mouth-parts was dissolved in xylol and the tissue surrounding the cephalopharyngeal skeleton softened in a sodium hydroxide solution. The mouth-parts lack an accessory sclerite and their shape is also as shown in Hall (1948).

Cochliomyia macellaria ranges from southern Canada to southern South America, and is still common in southern California. It feeds on decaying animal matter, so it can be found in situations similar to the La Brea record. Additional calliphorid puparia have been found elsewhere in asphalt deposits at La Brea, but have not been critically studied.

We thank E. C. Wilson (LACMIP) for loaning us the syntypes that Pierce (1945) designated.

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