

VOUCHER SHEET

Species name: Hemiproto sp A Benedict 1978

Date Examined: 30 March 2012

Group: Amphipoda Family Caprellidae

Voucher By: D. B. Cadien

Voucher Specimen(s): LACSD NPDES: Sta. OD, 23m Jan 2000, 1 ♀♀; Sta. OD, 23m Jan 2006, 1 ♀; Sta. 1D, 23m Jul 2001, 1 ♀; Sta. 1D, 23m Jan 2007, 1 juv ♂; Sta. 3D, 23m Jan 1994, 2 ♂1 ♀; Sta. 3D, 23m Jul 1997, 2 ♀; Sta 3D, 23m Jan 2002, 1 juv ♂; Sta. 3D, 23m Jan 2005, 1 ♀; Sta. 7D, 23m Aug 2009, 1 unsexed; Sta 10C, 61m Jul 1994, 2 ♂3 ♀: LACSD Baseline; Sta. B57a, 43m 18 Jul 2003, 1 juv ♂; LACSD Site; Sta. E40, 40m Nov 1997, 1 ♂1 ♀: REGIONAL MONITORING SCBPP: Sta. PLABE 01150, Aug 1994, 2 ♂1 ♀: REGIONAL MONITORING B'08: Sta. 6479, 4m Aug 2008, 1 unsexed; Sta. 7540, 82m Aug 2008, 1 unsexed.

SYNONYMY: Hemiproto wigleyi of Watling 1995 not McCain 1968

LITERATURE: McCain, J. C. 1968. The Caprellidae of the western North Atlantic. *Bulletin of the United States National Museum* 278:1-147.

Watling, Les. 1995. The Suborder Caprellidea. Pp. 223-240 IN: Blake, James A., Les Watling, and Paul H. Scott (eds.) *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel* Vol. 12: The Crustacea Part 3 – The Amphipoda. Santa Barbara Museum of Natural History, Santa Barbara, California. 251pp.

DIAGNOSTIC CHARACTERS:

1. Eye large, round, occupying about $\frac{1}{2}$ the anterior portion of the cephalon, composed of numerous clustered ommatidia. Darkly pigmented in fresh material but fading in preservative.
2. Antenna 2 not reaching the end of the antenna 1 peduncle; articles 3 and 4 subequal.
3. Carpus of G1 longer than merus, and about $\frac{2}{3}$ propod length.
4. Gills increasing in length from G2 through P4, reaching nearly $\frac{1}{2}$ the basis length of P4.
5. Pereonite 5 longer than either 4 or 6, with attachment of pereopod at about 85-90% of segment length. Pereopod 5 typically absent in adult, but may be present in juveniles.
6. Pereopods 3 and 4 six-articulate, with the basis very long, a small ischium, a merus about 60% of the basis length, a carpus about $\frac{1}{3}$ as long as the merus, and a propod subequal to (P3), or longer than (P4) the carpus. Dactyls are shorter than the propod, and slightly curved.

RELATED SPECIES AND CHARACTER DIFFERENCES:

1. The only other member of the genus currently known is Hemiproto wigleyi from the temperate West Atlantic. The two are very similar. *H. sp A* can be differentiated from *H. wigleyi* by the relative lengths of the gills and the first articles of G2, P3, and P4. They are longer in *H. sp A* than in the Atlantic species. In *H. sp A* the carpus of the male P4 is shorter than the propod, while in *H. wigleyi* this is reversed. In male *H. sp A* article 3 and 4 of the A2 peduncle are subequal in length, while in *H. wigleyi* article 4 is roughly 1.5x the length of article 3. Pereonite 6 in Male *H. sp A* is more slender than in *H. wigleyi*, and the attachment of the pereopodal base is more posterior. In *H. sp A* the carpus of G1 is longer than the merus, while in *H. wigleyi* this is reversed. The G1 carpus is also longer in *H. sp A* relative to the propod, being about $\frac{2}{3}$ rather than $\frac{1}{4}$ as in *H. wigleyi*. The G1 propod is shown in McCain's illustration to have three spines laterally; these are lacking in *H. sp A*.

2. *Hemiproto sp A* can be separated from *Phtisica* sp, which has been reported from Santa Monica Bay (specimens lost), which also has 6 articulated P3 and 4, by lacking the long abdominal appendages of *Phtisica*.

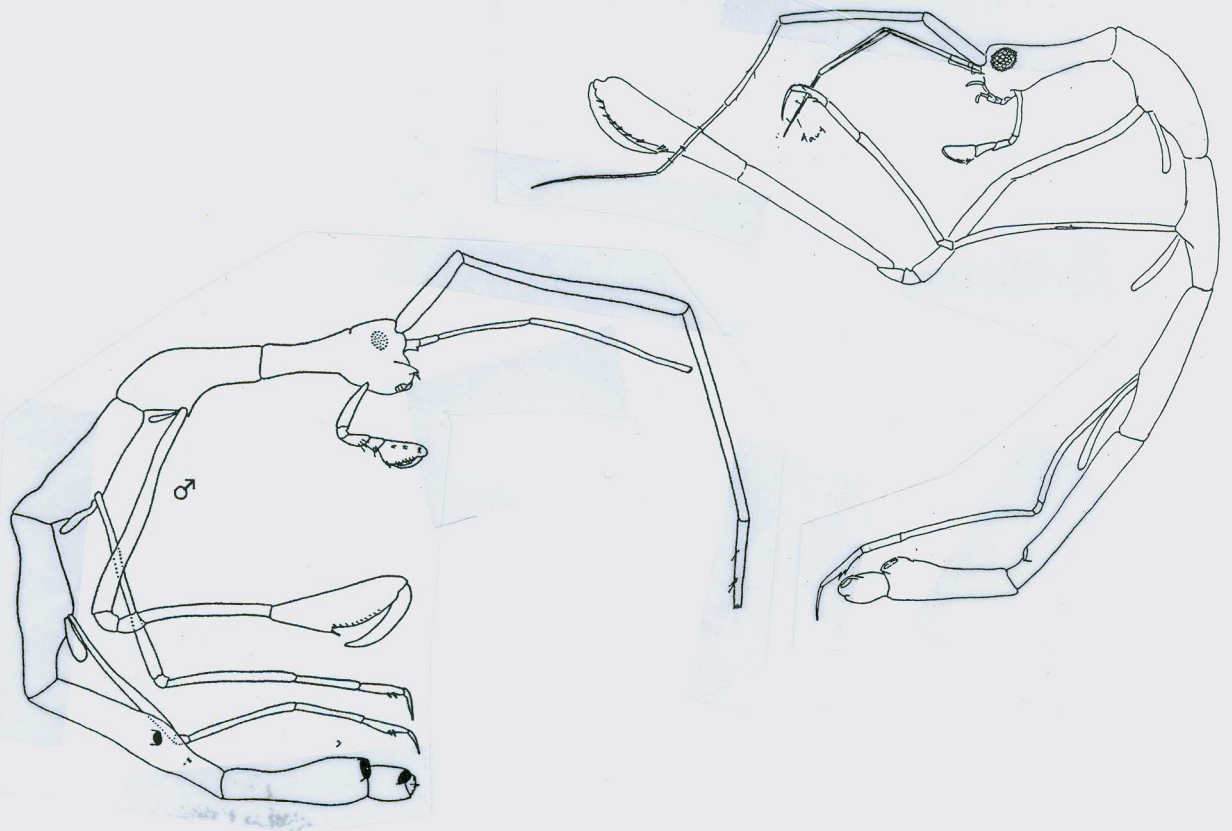
2. *Hemiproto sp A* can be separated from all other caprellids in the NEP by possession of six articulated pereopods 3 and 4

DEPTH RANGE: 4-92 m

DISTRIBUTION: Purissima Pt, Central California, to San Diego

COMMENT: Watling viewed this as conspecific with the type *H. wigleyi*. There appear to be a number of small differences between the Pacific and Atlantic forms which can be used to differentiate them. Watling suggested that the animal had been introduced from one ocean to the other (polarity in question), or represented a relict population isolated by the closure of the Isthmus of Panama. If the two forms had been morphologically identical either of these two hypotheses might prove to be true. However, since there are a number of morphological details which differ in the Pacific and Atlantic *Hemiproto*, I suggest here that these represent a geminate pair which has diverged since their isolation, forming two separate species. Most trans-isthmian movement prior to the closure was from east to west, although there are a few instances of west to east movement. Based on this proportion I suggest that *Hemiproto wigleyi* is the stem species, and that *H. sp A* is its Pacific geminate. The habitat of this animal in shallow shelf waters argues against an introduced status. While there are numerous examples of fouling caprellid introductions into California, all of the off-shore forms so far seem to be endemic rather than introduced. There are some instances of introductions to offshore waters, but while it remains possible in this case, it seems quite unlikely.

ILLUSTRATION:



♂ *Hemiproto wigleyi* McCain 1968 (left), vs. ♂ *Hemiproto sp A* Benedict 1978 (right)