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Short Communication

New record and contribution to the knowledge of *Neastacilla californica* (Boone, 1918) (Isopoda, Arcturidae) on the west coast of Baja California, Mexico

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ABSTRACT. Information concerning *Neastacilla californica* is currently scarce. In fact, its distribution range is not yet well defined; this species is currently reported from Point Conception to Point Loma along the California coast, USA, and also in the Gulf of California, Mexico. In this note, we present a new zoogeographical record of *N. californica* with information derived from a sample of taken in July 2012 during a monitoring expedition in the area inside of the Guerrero Negro Lagoon, at Peninsula de Baja California, Mexico, at 4.3 latitudinal degrees from the southernmost point reported on the Pacific coast. Additionally, we present a comparative summary of the main diagnostic features of this species and a series of photographs that allow observing characteristics of *N. californica*, contributing to the knowledge of the species.

Keywords: *Neastacilla californica*, new record, Guerrero Negro Lagoon, Baja California, Mexico.

Isopods are widely distributed in all environments, especially in aquatic systems; their distribution includes oceans as well as estuarine environments (Blake & Scott, 1994). *Neastacilla californica* (Boone, 1918); originally described as *Astacilla californica*, has a distribution range in Southern California (Boone, 1918, Menzies & Barnard, 1959; Stebbins, 2012) and has also been reported in the Gulf of California, Mexico (Hendrickx *et al.*, 1997; Espinosa-Pérez & Hendrickx, 2001, 2006).

Information presented in this short communication comes from a baseline monitoring study of benthos conducted in Guerrero Negro Lagoon 28.3°N, 114.4°W (Fig. 1) that occurred monthly from July to December in 2012. Benthic samples were obtained at ten stations by scuba divers by using a 0.5×0.5 m quadrat (four replicates per station).

All samples were kept on ice, transferred to 10% formaldehyde solution, and preserved in 70% ethanol for later taxonomic identification. Schematic drawings and photographs were made using a dissecting stereoscope equipped with a camera lucida and a microscopic camera. A comparative table using diagnostic characteristics published for *Neastacilla*

californica and the specimen collected in this study was assembled.

The sample was collected at 4.3 latitudinal degrees from the southernmost Pacific coast reports and corresponds to a female of *Neastacilla californica* (Boone, 1918) with 7.4 mm total length (TL) (Figs. 2a-2c), collection date July 2012, locality Guerrero Negro Lagoon, BCS Mexico, 28°3'3.3"N, 114°4'57.03"W (Cat. No. CEFACIB-37).

N. californica is distinguished by the fusion of the first pereonite (PI) to the head, and it has a small and angular slit on its side that follows the eyes (Fig. 2d), in contrast to *N. falclandica* (type species), which has a partial groove without a real lateral slit (Lew-Ton & Poore, 1986).

The subsequent pereonites, PII and PIII, gradually increase in length and width; the fourth pereonite (PIV) is considerably longer than the others (2.4 mm approximately the 33% of TL), similar to *N. falclandica* according to Lew-Ton & Poore (1986), and its anterior part is wider than its posterior part (1.6 and 0.8 mm, respectively); the pleon is formed by the fusion of pereonites PV, PVI, and PVII. Pereopods PI-PIV are rigid and front-facing and have abundant setae for hel-

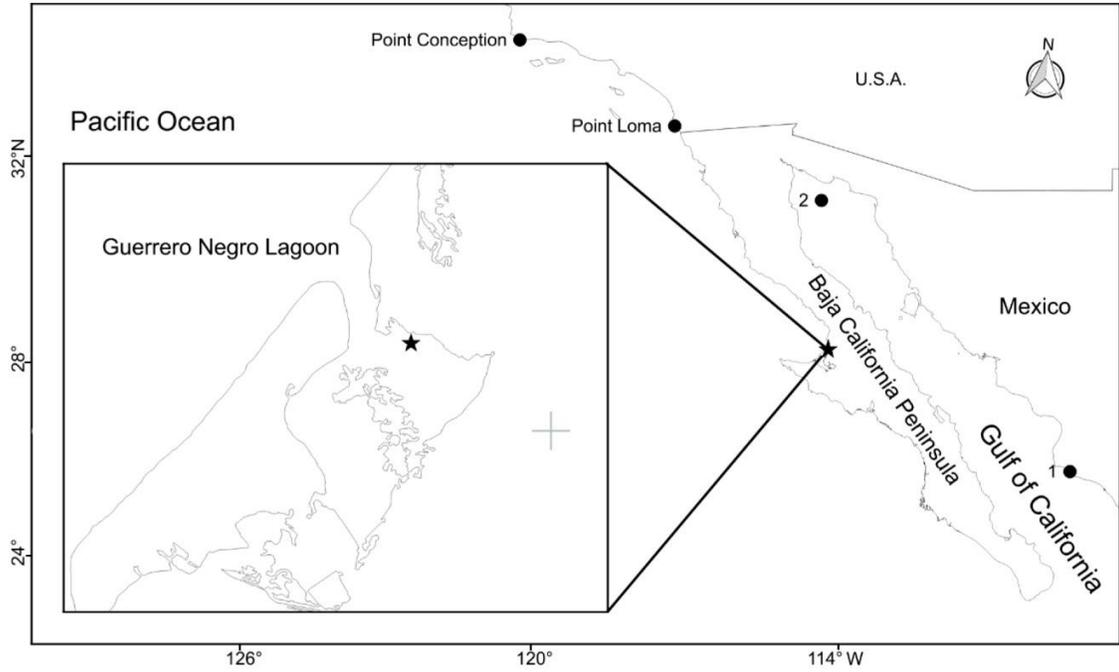


Figure 1. Black dots indicate the distribution reported of *Neastacilla californica* (Boone, 1918) on the Pacific coast and in the Gulf of California. 1 Topolobampo Bay, 2 Roca Consag. Black star shows the collection point of the sample presented in this study.

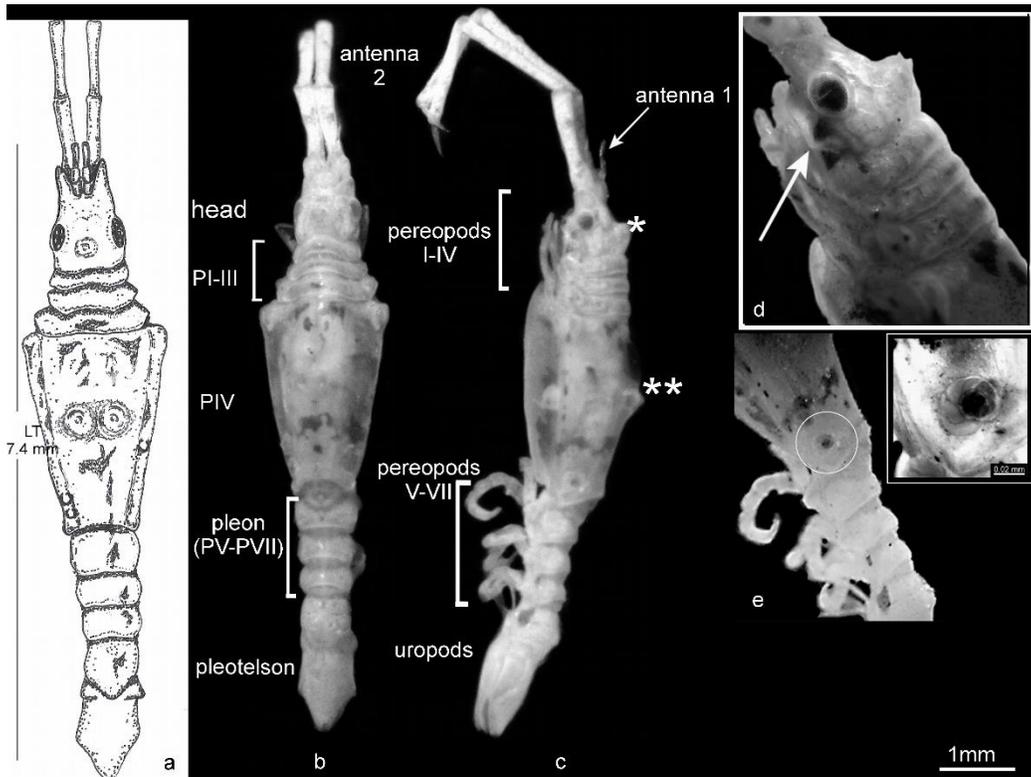


Figure 2. *Neastacilla californica* (Boone, 1918) female from Guerrero Negro Lagoon, Mexico [CEFACIB-37]. a) Female dorsal view, b) dorsal view, c) right lateral view, d) angular slit between the head and PI (detail), e) details of epibionts (presumably foraminiferous). P: I-III, pereonites I, II and III, PIV: pereonite IV, PV-PVII: pereonites V, VI, and VII, forming the pleon; *Conical protrusion on the head, **Conical protrusion bilobulate on PIV.

Table 1. Comparison of main diagnostic features of *Neastacilla californica* (Boone, 1918).

Diagnostic features	Female holotype Boone (1918)	Female holotype Stebbins (2012)	Female this work
Head	Reference is made to an excavation in the lateral angles of the head.	Fused to PI with a lateral incision behind the eyes.	Incompletely fused to PI. Lateral angled slit located behind the eyes with a slight overlap between the head and PI. Conical protrusion.
Pereopods I to IV	Facing front, densely covered with spines (setae); each longer than the previous.	Thin with setae (spines) in bangs, facing front of the ventral region and with a filtering function.	Thin, densely covered with setae (spines) facing front of the ventral region with a filtering function. Dactylus PI clawless.
Pereonite IV	Represents 40% of TL, wider than previous segments, decreasing in size caudally. Conical bulging tubercle on the dorsal part.	More than twice as long as other pereonites. Females with a bilobulate bulge in the middle region.	Represents approximately 33% of TL (regardless of A2 length). It is markedly wider than the previous segments decreasing in size caudally. Females with a bilobulate protrusion in the dorsal middle region.
Pereopods V to VII	Ambulatory gradually decreasing in length caudally.	Robust, prehensile.	Robust and prehensile, highly curved. Dactylus with a claw. PVI and PVII are clawless.
Pleon	2 fused segments	3 fused segments	PV, PVI and PVII fused.
Uropods	Modified: hinge laterally along the pleon and pleotelson, enclosing the pleopods in a branchial chamber	Modified: hinge laterally along the pleon and pleotelson, enclosing the pleopods in a branchial chamber	Modified: hinge laterally along the pleon and pleotelson, enclosing the pleopods in a branchial chamber.
Location	Venice, California, USA, among macroalgae	San Diego, California, USA	Guerrero Negro, Baja California, Mexico, on sandy substrate.
Cat. No.	Cat. No. 50401, U.S.N.M.	Cat. No. 50401, U.S.N.M.	Collection of marine invertebrates in Cephalopods Lab. CIBNOR. No Cat. [CEFACIB-37].

ping with filter feeding (dactyls PI-PIV are clawless); pereopods V-VII are sturdy and short, indicating ambulatory function (PV and PVI dactyls with claw).

Remarks: no corporal ornamentation is observed, except for a conic protrusion in the middle of the head and a conic bilobulate protrusion in the middle of the pereonite IV. A comparison of the main diagnostic features of *Neastacilla californica* corporal sections between published information and the found specimen is shown in Table 1, attempting to be as descriptive and specific as possible because although some features are probably not indicative of the species, they are for this particular specimen.

Since the oral structures have not been described in detail, and because all of the structural features are key points that allow strengthening its taxonomy, continuing with the morphological description of *Neastacilla californica* is recommended.

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