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An Eocene sea turtle from the eastern North Pacific fills a Paleogene gap

Ashley W. Poust, Patricia A. Holroyd and Thomas A. Deméré
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Sea turtles (Testudines: Chelonioidea) represent a monophyletic group with a global distribution in the fossil record, although most of our knowledge of their diversity and morphology comes from the Atlantic Ocean and Tethyan Sea (Evers and Benson 2019; Gentry et al. 2019). By contrast, the record of their evolution in the vast Pacific Basin prior to the Neogene is paltry. Late Cretaceous chelonioids are known from northern California (Parham et al. 2003), British Columbia (Nicholls 1992; Nicholls and Meckert 2002), Japan (Hirayama and Chitoku 1996), Australia (Kear et al. 2003; Kear 2006; Kear and Lee 2006), and New Zealand (Wiffen 1981), indicating they occupied at least portions of both the North and South Pacific Oceans at this time. Pacific Paleocene specimens are entirely unknown, and to date the Eocene record has been limited to chelonioids and dermochelyids (Köhler 1995a, b; Grant-Mackie et al. 2011) from New Zealand, and an informal report of a sea turtle from Oregon (Orr and Orr 2009). Here, we describe a new sea turtle fossil from the middle Eocene of California which demonstrates that members of this clade were indeed present in the North Pacific at this time.

Ashley W. Poust [apoust@sdnhm.org; ORCID: https://orcid.org/0000-0001-7955-613X], San Diego Natural History Museum, Department of Paleontology, San Diego, California, 92101, USA; University of California Museum of Paleontology, University of California, Berkeley, California, 94720, USA. Patricia A. Holroyd [pholroyd@berkeley.edu; ORCID: https://orcid.org/ 0000-0003-1292-6356], University of California Museum of Paleontology, University of California, Berkeley, California, 94720, USA. Thomas A Deméré [tdemere@sdnhm.org ; ORCID: https://orcid.org/0000-0001-5464-3528], San Diego Natural History Museum, Department of Paleontology, San Diego, California, 92101, USA.

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