

## First report of the marine barnacles *Lepas anatifera* and *Chelonibia testudinaria* as epibionts on American crocodile (*Crocodylus acutus*)

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The most common epibionts of crocodiles are ticks, leeches (Huchzermeyer, 2003), and rarely barnacles (Monroe and Garrett, 1979). However, there is a lack of information regarding epibionts on American crocodile, *Crocodylus acutus* (Cuvier, 1807). Cupul-Magaña and Cortés-Lara (2005) recorded the presence of four diatom genera (*Amphora*, *Cymbella*, *Navicula*, and *Nitzschia*), a blue-green algae (*Trichodesmium* sp.), and colonies of protozoans (*Epistylis* sp.) attached to the belly of juveniles of American crocodile in a Mexican freshwater coastal lagoon.

In November 2008, a 1.7 meter American crocodile (male) was captured by the Naval Authorities in Puerto Vallarta harbor, a city on the Central Pacific coast of Mexico. A physical examination of each body region of the crocodile revealed the presence of two types of barnacles attached to the jaws and tail. According to Morris, Abbot and Haderlie (1980), we identified 21 pelagic goosneck barnacles, *Lepas anatifera* Linnaeus, 1758, and 68 non-stalked barnacles, *Chelonibia testudinaria* (Linnaeus, 1758).

The pelagic gooseneck barnacles were observed mainly on the base of the teeth in the lower jaw and on the single dorsal row of scales of the tail (Fig. 1). The non-stalked barnacles were located on both sides of the posterior section of the tail, and some isolated

individuals observed on the nuchal region and on the dorsal part of the base of the tail (Fig. 2).

Both species of cirripedian crustaceans live in tropical and subtropical oceans (Patel, 1959; Morris, Abbot and Haderlie, 1980). They are prominent and conspicuous members of the marine turtles' fouling or epibiont community (Hernández-Vázquez and Valadez-González, 1998; Rawson et al, 2003; Gámez-Vivaldo et al, 2006), but this is the first time they have been recorded as American crocodile epibionts.

These crustaceans adhere themselves to floating objects and marine organisms with typically slow motility or organisms which spend much of their time resting (Morris, Abbot and Haderlie, 1980; Fraser, Nikula and Waters, 2011). The barnacle species growing on rafts, in flowing channels, or in the shallow sublittoral zone have the highest growth rates (Crisp and Bourget, 1985).

The limited information available on the growth rates of lepadomorphs (like *L. anatifera*) indicates fast growth despite alleged scarcity of plankton at the water surface of oceans (Crisp and Bourget, 1985). Evans (1958) reported that *Lepas* species reach maturity at a capitulum length between 17 to 19.5 mm and grow 0.5 mm per day in the first month of life. The specimens of *L. anatifera* attached to the American crocodile specimen showed lengths between 2.39-3.87 mm, indicating their estimated age of ca. 4-8 days. With this information, we concluded that the specimens of *L. anatifera* settled on the crocodile approximately one week before its capture, therefore, this is the minimum amount of time the crocodile must have spent in an environment with oceanic conditions that allowed the development of these pelagic gooseneck barnacles.

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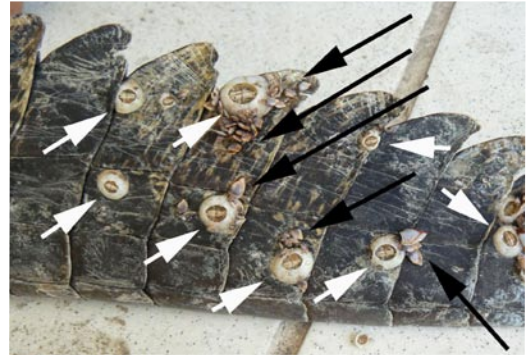
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**Figure 1.** Lower jaw of an American crocodile specimen, showing the pelagic gooseneck barnacles (black arrows). F. C. Reyes.



**Figure 2.** Posterior section of the tail of the same American crocodile, showing the pelagic gooseneck (black arrows) and non-stalked barnacles (white arrows). F. C. Reyes.

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