

First report of *Lepidochelys olivacea* feeding on *Hippocampus patagonicus* in Brazil

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The olive ridley turtle (*Lepidochelys olivacea*) is a smaller species of sea turtle. It is distributed in tropical and subtropical regions of the Atlantic, Pacific and Indian Oceans and is considered Vulnerable on the global scale (www.redlist.org). The olive ridley turtle is found along the entire coast of Brazil (Reis et al. 2010), but primarily nests on beaches along the coast of the northeastern states of Bahia and Sergipe (Silva et al. 2007).

Seahorses (Syngnathidae: *Hippocampus*) are a group of boney fishes composed of a large number of species, including many synonymies (Lourie et al., 2004). The occurrence of only two species of seahorses was reported in Brazil until a few years ago: *Hippocampus reidi* (found in estuaries and the ocean) and *Hippocampus erectus* (found in the ocean). However, a third morphotype was found in the environment and collections, causing taxonomic confusion. Recently, the relationships were resolved based on morphometric and genetic analyses, leading to the conclusion that three species of seahorse are found in Brazil: *H. reidi*, *H. erectus* and *Hippocampus patagonicus* (Silveira et al. 2014).

Although seahorses may make up the diet of sea turtles (Kleiber et al. 2010), no events of this interaction have previously been reported for *L. olivacea*. Therefore, this note offers the first documentation

of the consumption of seahorses by an olive ridley sea turtle on the coast of Brazil.

On 14 June 2017, a female *L. olivacea*, measuring 81.6 cm curved carapace length and weighing 25.6 kg, was found stranded dead on Itaipuaçu Beach (-22.97044 °S, -42.95739 °W) in the municipality of Saquarema in the state of Rio de Janeiro, Brazil. The turtle was in good body condition, and during necropsy, four specimens of seahorse were found in the small intestine (Figs. 1 and 2). Two specimens were partially digested, with the loss of anatomic structures necessary for their identification, such as the snout. The other two specimens examined had sufficient information about snout length (Silveira 2000; Figure 2 A and B), which can be used to document species.

We used the criteria proposed by Silveira et al. (2014) to identify species. The head to snout ratio (He/Sn in cm) was considered the main characteristic, as the three species of seahorse in Brazil differ greatly in snout size. *H. reidi* has a long snout (He/Sn: 2.0 to 2.5), *H. erectus* has an intermediate snout size (He/Sn: 2.5 to 3.2) and *H. patagonicus* has the shortest snout of the three (He/Sn: 2.85 to 3.9). Although the specimens examined had lost the maxilla and mandibles, the presence of rostral cartilage attached to the

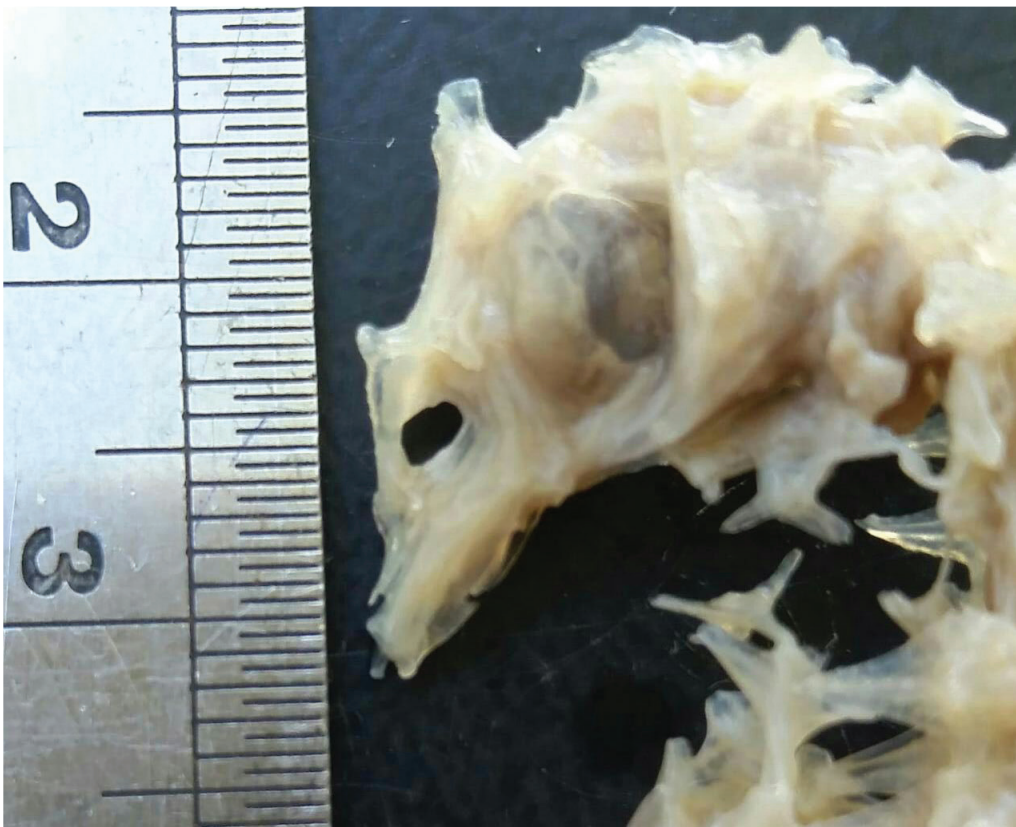


Figure 1. *Hippocampus patagonicus* specimen found in the stomach of *Lepidochelys olivacea* in the state of Rio de Janeiro

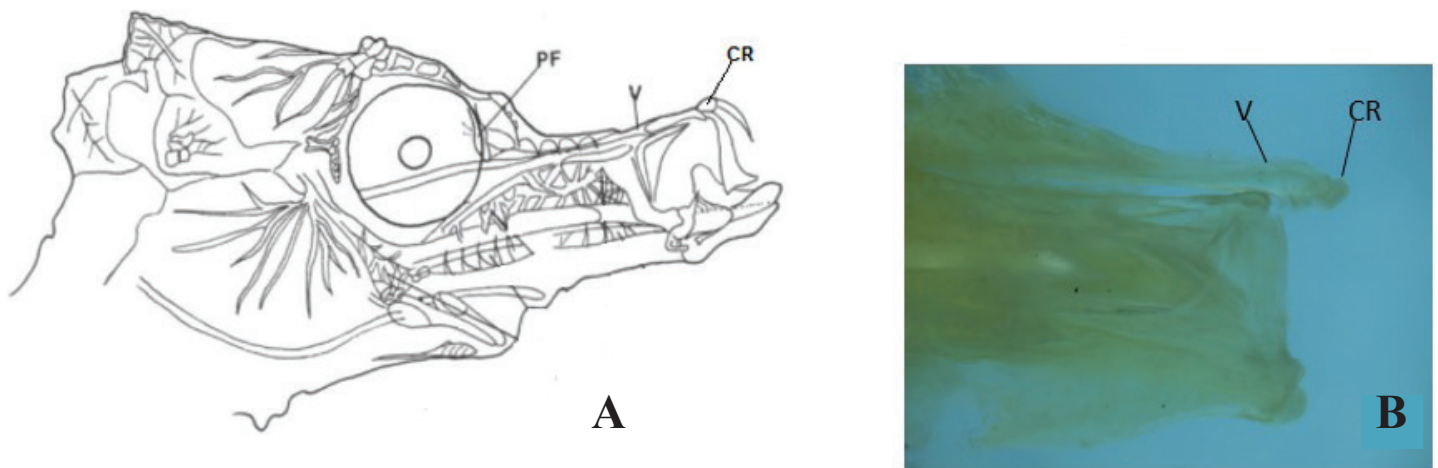


Figure 2. A. Osteological schematic of seahorse showing bones of snout: V, vomer; RC, rostral cartilage (adapted from Silveira, 2000). B. Photomicrograph of snout of seahorse identified as *Hippocampus patagonicus* (magnification: 25 X).

mesethmoid and vomer bone indicated the end of the snout (Silveira 2000; Figs. 2A and 2B), enabling the determination of the He/Sn = 3.5, confirming the species as *H. patagonicus*.

Kleiber *et al.* (2010) reported on the occurrence of *H. erectus* and *H. hippocampus* in the digestive track of loggerhead turtles (*Caretta caretta*) from the Atlantic Ocean and Mediterranean Sea and *H. erectus* in Kemp's ridley turtle (*Lepidochelys kempii*) from the West Atlantic Ocean. Given the similarity of diets for both *Lepidochelys* sea turtle species (Marquez 1990), it is not surprising that *L. olivacea* also eats *Hippocampus* spp, although we were unable to find any records in the published literature.

For Brazil, Colman *et al.* (2014) analyzed the diet of 30 individuals of *L. olivacea* on the coast of the state of Sergipe (northeastern region of the country) and described 13 different food items representatives of the phyla Arthropoda (five families of the class Malacostraca), Chordata (three families of the class Osteichthyes) and Mollusca (one family of the class Bivalva and one family of the class Cephalopoda). However, the authors did not describe the occurrence of seahorses in the stomach contents of the turtles analyzed. Therefore, the present note is the first documentation of ingestion of seahorses in *L. olivacea* in the world, broadening knowledge on this predator and its diet in Brazilian waters.

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