

# Marine Turtle Newsletter

Issue Number 135

October 2012



Photo of anthropogenic debris (>3200 pieces) found in the large intestine of a small juvenile green turtle that was found stranded in southern Brazil (see pages 6-8; photo: G.D. Stahelin).

## Articles

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- Foraging by Immature Hawksbill Sea Turtles at Brazilian Islands .....**MC Proietti *et al.***
- Case Report: Ingestion of a Massive Amount of Debris by a Green Turtle in Southern Brazil.....**GD Stahelin *et al.***
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- From Suriname to Ceará: Green Turtle Found Dead on the Coast of Ceará, Brazil.....**EHSM Lima *et al.***

## Recent Publications

# First Record of the Turtle Barnacle *Stephanolepas muricata* from the Pacific Coast of Costa Rica

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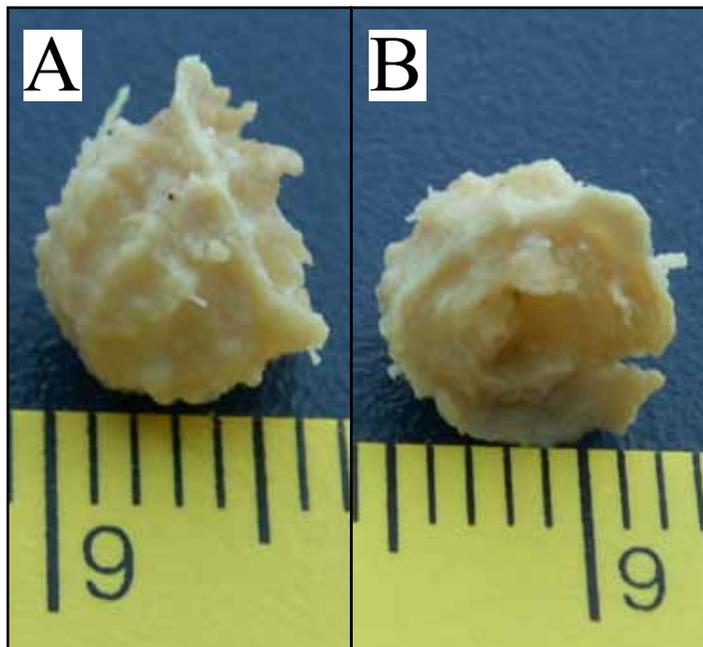
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The sessile barnacles (Balanomorpha) included in the family Platylepadidae are obligatory symbionts of motile marine animals, with some species occurring solely on turtles, sea snakes, and fish (Newman & Ross 1976; Pfaller *et al.* 2012). Platylepadid barnacles occur partially to fully embedded within the host's tissues - producing external wall elaborations that serve to anchor the barnacle (Badillo 2007; Ross & Frick 2007; Zardus & Balazs 2007). Stomatolepadine barnacles like *Stephanolepas* are characterized by nearly- to fully-encapsulating the shell in host tissue (Ross & Frick 2011). The shell of *S. muricata* is fragile and has a series of sutural elaborations that radiate outwards so as to cross-anchor the animal deep within the dermis of the host tissue (Fig. 1) (Frick *et al.* 2011).

The first report of *S. muricata* came from the skin of a hawksbill (*Eretmochelys imbricata*) turtle captured in the South China Sea, Southeastern Vietnam (Fisher 1886). Subsequent studies have found *S. muricata* on other sea turtle species - including green turtles (*Chelonia mydas*), loggerheads (*Caretta caretta*) and olive ridleys (*Lepidochelys olivacea*) (Badillo 2007; Frick *et al.* 2011). *Stephanolepas* is currently known from turtles in the following regions: Mediterranean-Eastern Atlantic, Indo-West Pacific, Eastern Pacific, Hawaii and the Galapagos Islands (Frick *et al.* 2011).

The first records of *S. muricata* from Baja California and Sinaloa, Mexico in olive ridleys was presented by Frick *et al.* (2011). In this note, we describe the first record of *S. muricata* on the Central Pacific coast of Costa Rica on a hawksbill turtle.



**Figure 1.** Cirripeds *Stephanolepas muricata* extracted from a hawksbill: A=side view and B=front view.

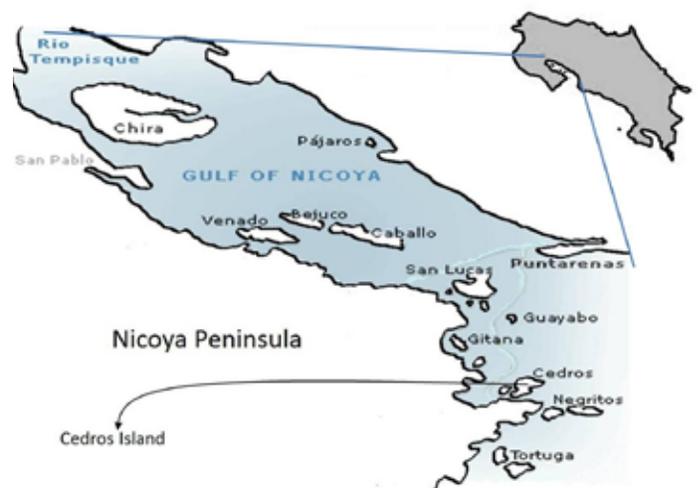
On the night of 22 August, 2008, in the Gulf of Nicoya, Costa Rica, a hawksbill turtle was caught by fishermen near Isla Cedros (Fig. 2) as by-catch from a gillnet. Fishermen removed the turtle from the gillnet and transported it to Parque Marino del Pacífico (Marine Park of the Pacific) where it was admitted for recovery following necessary institutional protocols. The morphometrics of the turtle were 34.6 cm X 29.2 cm (curved carapace length and width), and the turtle's weight was 3.4 kg. Upon arrival, the turtle was examined for epibionts and we collected specimens of the chelonophilic barnacle, *Stephanolepas muricata* Fischer, 1886 (Cirripedia: Coronuloidea: Platylepadidae, Figure 2). Ours is the first report of this symbiotic sea turtle barnacle species from Costa Rica.

The hawksbill turtle admitted to Parque Marino hosted numerous *S. muricata* attached to the leading edges of the front and rear flippers (Figs. 3 & 4), causing deep wounds that altered the normal shape of the flippers. The turtle was placed in fresh water for three days to rehydrate it and to remove epibiota. All barnacles were removed from the turtle's skin thus causing some superficial bleeding. The resulting wounds were treated successfully with topical iodine and silver sulfadiazine cream. On 20 March, 2009, the turtle weighed 6.8 kg and was released near Tortuga Island (9.767183° N, -84.907550° W).

**Acknowledgments.** We thank Cinthya Sancho for helping in treating and healing this sea turtle.

BADILLO, F.J. 2007. Epizoítos y parásitos de la tortuga boba (*Caretta caretta*) en el Mediterráneo Occidental. Tesis Doctoral. Universitat de Valencia. España. 264pp.

FISCHER, P. 1886. Description d'un nouveau genre de Cirripedes (*Stephanolepas*) parasite des tortues marines. Actes de Société Linnéenne de Bordeaux 40: 193-196.



**Figure 2.** Gulf of Nicoya and Cedros Island, Costa Rica.



**Figure 3.** *Stephanolepas muricata* in the front flipper of a hawksbill.



**Figure 4.** *Stephanolepas muricata* in the rear flipper of a hawksbill.

FRICK, M.G., J.D. ZARDUS, A. ROSS, J. SENKO, D. MONTANO-VALDEZ, B. BUCIO-PACHECO & I. SOSA-CORNEJO. 2011. Novel records and observations of the barnacle *Stephanolepas muricata* (Cirripedia: Balanomorph: Coronuloidea); including a case for chemical mediation in turtle and whale barnacles. *Journal of Natural History* 45: 629-640.

NEWMAN, W.A. & A. ROSS. 1976. Revision of the balanomorph barnacles; including a catalog of the species. *San Diego Society of Natural History Memoir* 9: 1-108.

ROSS, A. & M.G. FRICK. 2007. From Hendrickson (1958) to Monroe & Limpus (1979) and beyond: An evaluation of the turtle barnacle *Tubicinella cheloniae*. *Marine Turtle Newsletter* 118: 2-5

ROSS, A. & M.G. FRICK. 2011. Nomenclatural emendations of the family-group names Cylindrolepadinae, Stomatolepadinae, Chelolepadinae, Cryptolepadinae, and Tubicinellinae of Ross & Frick, 2007—including current definitions of family-groups within the Coronuloidea (Cirripedia: Balanomorph). *Zootaxa* 3106: 60-66.

ZARDUS, J.D. & G.H. BALAZS. 2007. Two previously unreported barnacles commensal with the green sea turtle, *Chelonia mydas* (Linnaeus, 1758), in Hawaii and a comparison of their attachment modes. *Crustaceana* 80: 1303-1315.

## **Displacement and Site Fidelity of Rehabilitated Immature Kemp's Ridley Sea Turtles (*Lepidochelys kempii*)**

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In 2010, numerous immature Kemp's ridley sea turtles (*Lepidochelys kempii*) were incidentally captured by recreational fishermen on piers or stranded live in Mississippi and Alabama and were rehabilitated at the Institute for Marine Mammal Studies (IMMS) in Gulfport, MS. This Critically Endangered sea turtle was once on the brink of extinction, but due to conservation and management efforts on nesting beaches and at foraging grounds, this species is experiencing a population recovery (Crowder & Heppell 2011; Heppell *et al.* 2007). Coastal areas within the Gulf of Mexico represent important developmental habitats for juvenile Kemp's ridleys (Ogren 1989). Immature Kemp's ridleys arrive at these neritic habitats to feed

primarily on crabs and other invertebrates after a transition from their post hatchling pelagic lifestyle (Ogren 1989).

The rehabilitation and release of juvenile and subadult Kemp's ridleys at IMMS presented an opportunity to examine the movements of these poorly understood life history stages in an understudied region of the Kemp's range, the north central Gulf of Mexico. Twelve rehabilitated sea turtles were selected for satellite tracking. During the fall of 2010, six of these turtles were released in Mississippi waters, two miles south of East Ship Island. Due to the high number of sea turtle strandings along the Mississippi coast during the spring of 2011, the other six rehabilitated turtles