

A SHORT REPORT ON GREEN SEA TURTLE MICROBIOLOGY

Christudas Silvanose

Dubai Falcon Hospital, PO Box 23919, Dubai

Large numbers of many different species of micro-organisms live in the oceans. Yet, much remains to be learned about the exact number of species living in various parts of the ocean and the normal microflora of marine animals. There is very little information available in the literature about normal and pathogenic micro-organisms of sea turtles. Adult green sea turtles (*Chelonia mydas*) are herbivores, and the feeding habitat is an important factor that determines the incidence and prevalence of micro-organisms in the digestive tract.

The Environmental Agency, Abu Dhabi performed a health assessment and population studies of green sea turtles that occur off the coast of Ras Al Khaimah, UAE during May 1997. As part of the study, screening of bacteria, fungi and other microscopic organisms were carried out to assess the normal flora in the oro-pharynx and cloaca of sea turtles.

Oro-pharyngeal and cloacal swabs were examined from 45 clinically normal green sea turtles including 36 adults (19 females and 17 males) and 9 juveniles. Direct wet preparation from the oro-pharynx showed budding yeast cells (*Candida* sp), protozoa, diatoms, *Chlamydomonas* sp, *Cyanobacteria* sp, *Cristispira* sp, *Crustacean* larvae and various motile bacteria. Direct wet preparation from the cloaca showed budding *Candida* cells, diatoms and bacteria.



Fig. 1 Phase-contrast microscopic appearance of *Cyanobacteria* sp. attached to exfoliated epithelial cells from the oro-pharynx of a green sea turtle.

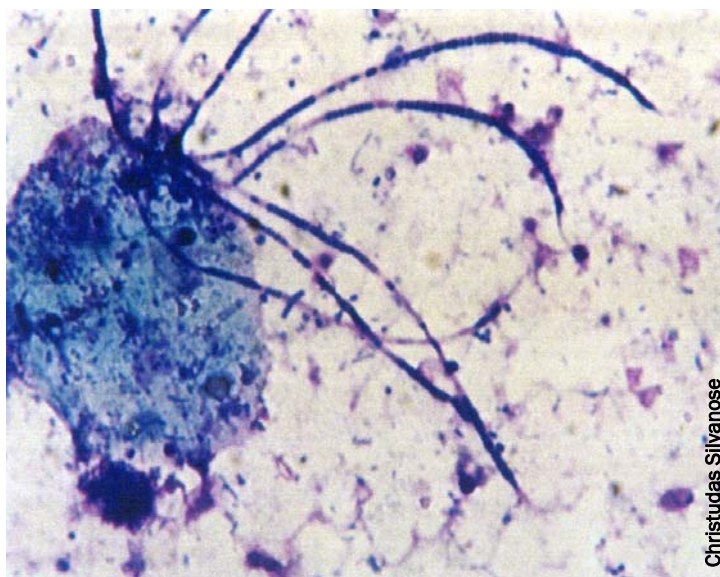


Fig 2. A stained smear showing *Cyanobacteria* sp. from the oro-pharynx of green sea turtle.

Bacteriology samples were cultured into Zobell agar, sea water agar, sea water broth, MacConkey's agar and thiosulfate citrate bile sucrose agar (TCBS). Mycology samples were cultured into sea water agar, yeast mold agar, potato dextrose agar, peptone yeast agar, Sabouraud's dextrose agar and Sabouraud's chloramphenicol agar.

The bacteria isolated from the oro-pharynx were *Vibrio alginolyticus*, *V.fischeri*, *V. fluvialis*, *V. vulnificus*, *V. mimicus*, *V. hollisae*, *V. metaschnikovi*, *Planococcus* sp. and *Pseudomonas* sp. The bacteria isolated from the cloaca were *Vibrio alginolyticus*, *V. fischeri*, *V. fluvialis*, *V. vulnificus*, *V. metaschnikovi* and *Planococcus* sp. *Cyanobacteria* sp and *Cristispira* sp were seen in direct microscopy, but failed to grow in culture media.

The fungi isolated from the oro-pharynx were *Candida* sp., *Candida tropicalis*, *Alternaria* sp., *Exophila* sp and *Rhodotorula rubra*. The fungi isolated from the cloaca were different types of *Candida* sp. and from the carapace and skin lesions were *Candida* sp, *Candida tropicalis*, *Bipolaris* sp. and *Rhodotorula rubra*.

Other unicellular microorganisms detected from the oro-pharynx were Diatoms, *Amoeba* sp., *Chilodonella* sp. and *Chlamydomonas* sp. Multicellular organisms seen are crustacean larvae and amphipods. Faecal samples were examined for the presence of intestinal metazoan eggs. Trematode and Acanthocephala eggs were seen in most cases. Leaches were noticed near the eyelid, cloaca and neck area of some green sea turtles. Amphipods are one of the crustaceans belonging to the class Malacostraca which seen in the oro-pharynx, skin and carapace lesions of sea turtles.



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Fig 3. Cultural appearance of *Alternaria* sp. isolated from the oro-pharynx of green sea turtle.



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Fig 4. Microscopic appearance of *Alternaria* sp. isolated from the oro-pharynx of green sea turtle.



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Fig 5. Amphipods from the oro-pharynx of a green sea turtle.



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Fig 6. Trematode egg from the faeces of green sea turtle.

References

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