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The Lungworm, *Halocercus* spp. (Nematoda: Pseudaliidae) in Cetaceans from California

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ABSTRACT: Three cetaceans from Monterey Bay, California (USA), were infected with lung nematodes. A beaked whale calf, *Mesoplodon* sp. was infected with adult *Halocercus* sp. This represents a new host record for this nematode. The lungs of a northern right whale dolphin calf, *Lissodelphis borealis*, contained an unidentified nematode similar in size to *Halocercus* sp. The presence of *Phyllobothrium delphini*-type cestode larvae in its blubber is evidence that the calf was feeding on invertebrates. A pregnant harbor porpoise, *Phocoena phocoena* was infected with the lung nematode *H. invaginatus*, but the fetus was uninfected. We found no direct evidence of a transplacental mode of transmission for *Halocercus* sp.

Key words: Nematode, prenatal transmission, cetaceans, *Halocercus* sp.

Conlogue et al. (1985) described heavy infections of *Halocercus dalli* in Dall's porpoises (*Phocoenoides dalli*), showed that younger animals had a higher prevalence of infection than adults, and proposed a transplacental mode of infection. Dailey et al. (1991) described heavy infections of *Halocercus lagenorhynchi* in the lungs of four very young bottlenosed dolphin calves (*Tursiops truncatus*) and suggested heavy infections may cause early postnatal death due to verminous pneumonia. They also gave convincing evidence for a transplacental transmission and a cosmopolitan distribution of prenatal infections with lung nematodes. We report here *Halocercus* sp. in the lungs of a beaked whale calf (*Mesoplodon* sp.), *Halocercus invaginatus* in a pregnant harbor porpoise (*Phocoena phocoena*), and an unidentified nematode in the lungs of a northern right whale dolphin calf (*Lissodelphis borealis*). All hosts were from Monterey Bay, California (36°45′N, 122°00′W).

A beaked whale calf stranded in June 1990 and died at Long Marine Laboratory, Santa Cruz, California, three days later. It had a strong suckling response during feeding, and was likely to have been nursing at the time of stranding. At death the weight was 181 kg, length 265 cm, and was estimated to be <6-mo-old. There were several cysts in the lungs containing adult female *Halocercus* sp. (Nematoda: Pseudaliidae) and a badly damaged male *Halocercus* sp. The male's spicules were projected partly from the cloaca; the distal extremities had three branches with striated alae and the two spicules each were 0.684 mm long. Due to insufficient male specimens, specific identification could not be determined. This represents a new host record. No other parasites were detected. Voucher specimens were lost in transit. However, a microphotograph of the spicules is in possession of the Commonwealth Agricultural Bureaux, International Institute of Parasitology, St. Albans, United Kingdom.

A female northern right whale dolphin calf, *Lissodelphis borealis* (Delphinidae) died shortly after stranding in October 1990. It weighed 15.2 kg and was 131 cm in length; the fetal folds were still evident, suggesting that the calf was <6-mo-old. There were several cysts in the lungs containing nematodes similar in size to those described for the beaked whale calf. Unfortunately the specimens were severely degenerated, and could not be identified. The calf also was infected with *Phyllobothrium delphini*-like (Phyllobothriidae) larval cestodes in the blubber; thus the calf probably was feeding on invertebrates. Voucher specimens of the larval cestodes are deposited at the Commonwealth Agricultural Bureaux, International Institute of Parasitology, collection number 6371.

A recently dead pregnant harbor por-

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poise collected in March 1991, and its well-developed male fetus were examined. The weight and length of the female were approximately 80 kg and 172 cm, and those of the fetus was 3.0 kg and 60 cm, respectively. The lungs of the female had several cysts containing male and female *Halocercus invaginatus*. In contrast to the male nematode found in the *Mesoplodon* sp., the spicules of this worm were unbranched distally and had unstriated alae. No cysts were seen in the lungs or other organs of the fetus. Voucher specimens are deposited at the Commonwealth Agricultural Bureaux, International Institute of Parasitology, collection number 6364.

In all the above hosts, there were fewer nematode cysts and no external abscesses on the lungs as described by Conlogue et al. (1985) and Dailey et al. (1991). Although our data do not give direct support for a prenatal or transmammary mode of infection for lung nematodes, they do show nematodes can infect young cetaceans in a variety of California host species.

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