FIRST DETECTION OF A HAEMOCYSTIDIUM (MALARIA-LIKE) PARASITE IN FLATBACK (*NATATOR DEPRESSUS*) AND GREEN (*CHELONIA MYDAS*) TURTLES IN WESTERN AUSTRALIA*

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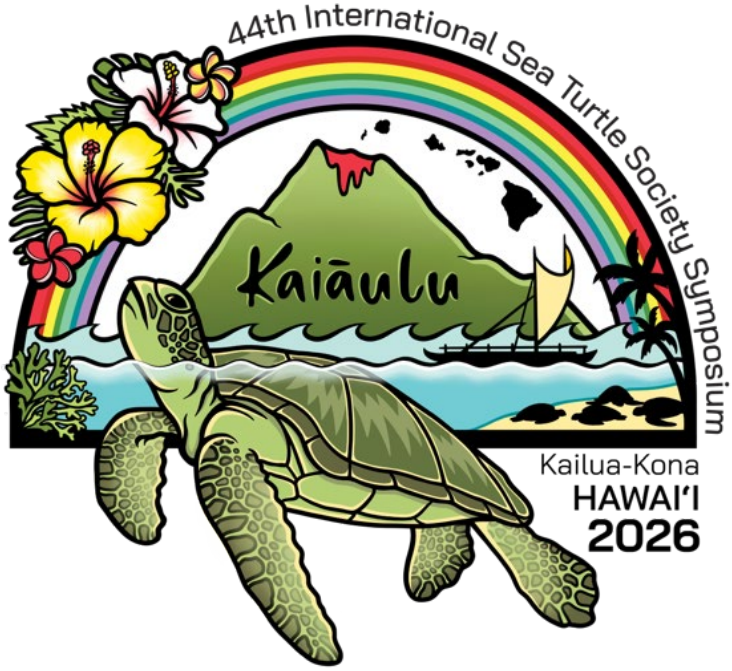
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Malaria and related haemosporidian parasites are widely distributed in reptiles but have not previously been reported in sea turtles. During baseline health surveys of sea turtles in Western Australia (WA), intraerythrocytic parasites consistent with Haemocystidium spp. were detected in blood films from flatback (*Natator depressus*) and green (*Chelonia mydas*) turtles during routine screening and confirmed by molecular testing. A total of 130 blood samples collected from foraging and nesting turtles between 2016 and 2020 were screened via nested PCR targeting the mitochondrial cytb gene, including 105 flatbacks, 20 greens, and five olive ridleys (*Lepidochelys olivacea*). The parasite was detected exclusively in foraging turtles, with a combined prevalence of 16.9 % (22/130), comprising 17 immature greens (77 %) and five mature flatbacks (23 %). Parasitaemia observed microscopically was generally low-grade, with most infections classified as mild. Two Haemocystidium genotypes (A and B) were identified, with genotype A most prevalent. Phylogenetic analysis revealed close genetic relationships with Haemocystidium species from freshwater and terrestrial turtles, suggesting an ancient and potentially widespread lineage among aquatic turtles. Preliminary analyses found no association between parasite presence or grade and health indicators, including body condition and haematological and biochemical parameters, indicating that infection is currently incidental. However, haemosporidian infections in reptiles can cause anaemia and other physiological changes, particularly under conditions of stress or immunosuppression, so continued surveillance will be important to detect potential shifts in infection dynamics under changing ecological conditions. Based on transmission pathways in other reptiles, infection is likely vector-borne, potentially involving dipteran insects or aquatic ectoparasites associated with coastal and intertidal foraging habitats. This study provides the first confirmed detection of Haemocystidium parasites in sea turtles and establishes an essential health baseline for understanding infectious disease risks. Given the limited understanding of sea turtle diseases, the establishment of baselines like this is critical for detecting changes in pathogenicity and informing conservation-health monitoring under future environmental change.

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