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CHAPTER 6

HEALTH ASSESSMENT OF SEABIRDS ON ISLA GENOVESA, GALÁPAGOS ISLANDS

Luis R. Padilla,[1,2,4] Noah K. Whiteman,[3] Jane Merkel,[1,3] Kathryn P. Huyvaert,[3] and Patricia G. Parker[1,3]

[1]*Saint Louis Zoo, 1 Government Drive, St. Louis, Missouri 63110, USA;*
[2]*College of Veterinary Medicine, University of Missouri-Columbia, 203 Veterinary Medicine Building, Columbia, Missouri 65211, USA; and*
[3]*Department of Biology, University of Missouri-St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121, USA*

Abstract.—A multispecies colony of seabirds was studied on the island of Genovesa, in the northern part of the Galápagos archipelago, Ecuador, in 2003, to establish baseline health parameters and to test specifically for *Chlamydophila psittaci*, known to exist elsewhere in the archipelago. Twenty-three Red-footed Boobies (*Sula sula*), 24 Great Frigatebirds (*Fregata minor*), 25 Nazca Boobies (*S. granti*), and 19 Swallow-tailed Gulls (*Creagrus furcatus*) were hand-restrained for venipuncture and collection of lacrimo-choanal-cloacal combination swabs. White blood cell (WBC) counts, differentials, and packed cell volumes were obtained and plasma chemistry analyses performed on the blood samples. Presence–absence and parasitemias of circulating hemoparasites were determined by microscopic evaluation of peripheral blood smears. *Haemoproteus*-like hemoparasites were found in three of the seabird species sampled. Prevalences were 29.2% (7 of 24) in Great Frigatebirds, 15.8% (3 of 19) in Swallow-tailed Gulls, and 8.7% (2 of 23) in Red-footed Boobies; none of the Nazca Boobies were infected. Parasitemia levels were relatively low within each of the infected species. Individual Great Frigatebirds with *Haemoproteus* infections also exhibited significantly higher heterophil-to-lymphocyte concentration ratios than birds not infected with *Haemoproteus*, an indication that birds infected with *Haemoproteus* were also physiologically stressed or, alternatively, that they were actively fighting the infection. *Haemoproteus* prevalences within Great Frigatebirds on Genovesa were not significantly different from those previously reported from conspecific hosts in the Hawaiian Islands. To compare seabird hemoparasite data with those for a sympatric terrestrial species, Galapagos Doves (*Zenaida galapagoensis*) were sampled on Genovesa in 2004 and screened for *Haemoproteus* previously reported in Galapagos Doves on other islands. Prevalence in this terrestrial endemic was high (42.3%; 11 of 26), and several birds exhibited relatively high parasitemia levels. *Chlamydophila psittaci* was not found in any birds by either serology or antigen detection methods. *Received 29 August 2005, accepted 8 September 2005.*

Resumen.—Estudiamos una colonia multiespecífica de aves marinas en la isla de Genovesa, en la zona norte del archipiélago de las Galápagos en Ecuador, en el año 2003, para determinar parámetros de salud básicos y probar particularmente por la presencia de *Chlamydophyla psittaci*, de la cual se sabe su existencia en el resto del archipiélago. Se tomaron muestras de sangre y de exudados combinados cloacales y lagrimo-coanales de 23 *Sula sula*, 24 *Fregata minor*, 25 *Sula granti* y 19 *Creagrus furcatus*. De las muestras de sangre, se obtuvieron conteos de glóbulos blancos, diferenciales y volúmenes celulares empaquetados, además de realizar análisis químicos del plasma. La presencia-ausencia y parasitemias de hemoparásitos circulantes fueron determinadas por medio de evaluaciones microscópicas de frotis de sangre periférica. Hemoparásitos parecidos a *Haemoproteus* fueron encontrados en tres de las especies de aves marinas muestreadas. Las frecuencias de la presencia de

[4]Present address: Department of Animal Health, Smithsonian National Zoological Park, 3001 Connecticut Avenue NW, Washington, D.C. 20008, USA. E-mail: padillal@si.edu