

## ABSTRACTS FOR *CONDOR* 103(2) MAY 2001

### FEATURE ARTICLES

#### **PATHOGENICITY, SEROLOGICAL RESPONSES, AND DIAGNOSIS OF EXPERIMENTAL AND NATURAL MALARIAL INFECTIONS IN NATIVE HAWAIIAN THRUSHES<sup>1</sup>**

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<sup>1</sup>Received 8 July 2000. Accepted 5 January 2001.

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*Abstract.* Omao (*Myadestes obscurus*) from the Hawaiian Islands typically have very low prevalences of infection with avian malaria (*Plasmodium relictum*) and it is not clear whether they share the same high susceptibility to this parasite that has been documented in native Hawaiian honeycreepers. We exposed four captive Omao to single infective mosquito bites and measured parasitemia, serological responses, and mortality over time. All four birds experienced transient infections with low parasitemias and were immune when rechallenged with multiple infective mosquito bites. By contrast, three of four honeycreepers (Maui Alauahio, *Paroreomyza montana*) that were exposed to the same dose and parasite isolate succumbed to infection. All four Omao developed antibodies to a common suite of malarial antigens that were detectable on immunoblots of a crude red blood cell extract of *P. relictum*. We used this technique to screen plasma samples from wild Omao and endangered Puaiohi (*Myadestes palmeri*) that were captured at elevations between 900 and 1300 m on the islands of Hawaii and Kauai. We found that the true prevalence of infection at elevations where active malaria transmission occurs is much higher than estimates based on blood smears alone. Hawaiian thrushes appear to have a high tolerance for malaria, with most individuals developing chronic, low-level infections after exposure that cannot be diagnosed accurately by blood smears.

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