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The socioecology of parasite infection in wild Bornean orangutans (*Pongo pygmaeus wurmbii*) in Gunung Palung National Park, West Kalimantan, Indonesia

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The socioecological model predicts that food availability and risk of parasite transmission influence sociality in primates. As a semi-solitary ape inhabiting the masting forests of Southeast Asia, orangutans provide a unique opportunity to compare social and non-social periods and highly variable foraging conditions within one population. This study compared two data collection periods when fruit availability differed markedly to determine whether sociality and parasite prevalence decrease as expected during periods of fruit scarcity. Fecal samples were analyzed using direct smear and fecal concentration techniques on-site at Cabang Panti Research Station from 2013-2014 and 2018-2019. From the high fruit period to the low fruit period, sociality decreased from 54% of focal follows containing a social event to 29%, while overall parasite prevalence remained the same at 100%. Interesting differences arose for certain parasite species, however. *Enterobius* sp. prevalence decreased during the low fruit period for both sexes but even more so for males (50% to 29% for females; 56% to 0 for males). Prevalence of *Trichuris* sp. increased for females during the low fruit period (5% to 43%) while prevalence among males remained the same. These results lend support to the prediction that social contact influences transmission risk for some parasite species, while other parasites may be more responsive to factors such as changes in reproductive state. These findings suggest that differences in the behavioral strategies of the sexes and the differential energetic demands of life history stages have an influence on parasitic infection patterns.

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