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PROGRAM & ABSTRACTS



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EFFECT OF TEMPERATURE ON THE VISUAL DISPLAYS OF THE JACKY DRAGON

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In ectotherms such as lizards, temperature is a key determinant of their behavior and their ability to signal to conspecifics. We asked whether changes in the thermal environment along the distribution of an agamid lizard, the Jacky dragon (*Amphibolurus muricatus*), modifies visual signal properties (frequency and duration). We first collected temperature data from 12 weather stations to understand variation in temperature across the species' range. We then collected field body temperatures (T_b) for three populations before measuring preferred body temperatures (T_{pref}) in the lab. Finally, we examined the role of temperature on the frequency and duration of display behavior at low (28 °C) and high (35 °C) temperatures consistent with what individuals experience in the wild. We found differences of 5.6-9.4 °C in mean air temperature across sites of the species' range. Field body temperatures, but not preferred body temperatures (overall average = 32.4 °C), differed among populations, with individuals from one population attaining higher temperatures than the other two. We also found a positive relationship between air temperature and the number of displays used during intraspecific communication, as well as differences in the number of displays during high- and low-temperature treatments (more displays during the high-temperature treatment). We suggest that social signaling is plastic and able to respond to local conditions such that variation of body temperatures mirrors that of the thermal environment and in turn, influences the frequency and duration of Jacky dragon visual signals. Display behavior is therefore dependent on environmental temperature and future changes to the thermal environment could have an impact on communication through its effect on display duration and frequency.