

body temperatures during activity. Physiological capacities of importance reflect a variety of adjustments to temperature which are evident both in processes within the intact animal and in the performance of individual tissues under in vitro conditions. The nature of these adjustments indicates that temperature adaptation in lizards has involved wholesale physiological modifications rather than just changes within the central nervous system.

Thermal Preferenda and Upper Lethal Body  
Temperatures of Some Australian Lizards

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Thermal preferenda of a number of lizards have been determined experimentally in a photothermal gradient which permits analysis of the temperature relations of these animals when all are afforded equal access to heat. Results obtained indicate differences in the general levels of thermal preferenda in such families as the Scincidae and the Agamidae, the former being somewhat less thermophilic than the latter. The results also establish the Gekkonidae as a family whose members are remarkably divergent in their thermal relations. Some geckos lack well-marked thermal preferenda, whereas others have very distinct ones. Of particular interest is the fact that the preferenda of these latter animals, which are often at a surprisingly high level, appear more closely related to the temperatures within shelters utilized during the day than to body temperatures employed for activity at night. This situation contrasts with that for most lizards in which the thermal preferendum is related to body temperatures maintained during activity in nature.

The upper lethal body temperatures of various species correlate in a general way with the level of the thermal preferendum. However, in at least one genus (Amphibolurus) whose members have rather uniform preferenda, some significant differences in heat resistance are demonstrable. These correlate well with the ecology of the species concerned.