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NOTES ON THE ECOLOGY AND NATURAL HISTORY OF *CTENOPHORUS RETICULATUS* (AGAMIDAE) IN WESTERN AUSTRALIA

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ABSTRACT

Ecological data on the agamid *Ctenophorus reticulatus* are presented. Active early and late in the day during summer, they thermoregulate actively with an average body temperature of 34.1°C (N=34). These agamid lizards dig their own burrows, which are used as retreats. They are omnivorus dietary generalists eating ants and termites as well as plant materials. Clutch size varies from 3 to 6, averaging 4. Adult males are larger than females.

INTRODUCTION

Ctenophorus reticulatus is widespread in Western Australia but does not occur in spinifex-sandplain habitats, only in in shrub-*Acacia* mulga habitats on harder soils. This agamid also occurs in northern South Australia and the southernmost Northern Territory (Cogger 2000, Storr 1966). During 1966–1968, we sampled these lizards from a variety of localities in WA especially on the dry lakebed at my Lake Yeo study site (Lat. 28° 05' x Long. 124° 15'), now the Yeo Lake Nature Reserve.

METHODS

Air and body temperatures, activity time, microhabitat, fresh snout-vent length (SVL), tail length, and weight were recorded for as many lizards as possible. Some of these data were summarized in appendices in Pianka (1986). Stomach contents were identified and prey volumes estimated for all lizards collected. Dietary niche breadth was calculated using the inverse of Simpson's (1949) index of diversity [$D = 1/ \Sigma p_i^2$] where p_i is the volumetric proportion of prey category *i*.

RESULTS

Habitat and Microhabitats. *Ctenophorus reticulatus* are found in shrub-*Acacia* mulga habitats, sometimes basking above ground (mean height 72 cm, N = 14). They

Figure 1. Male *Ctenophorus reticulatus* on dead mulga (near Meekatharra).

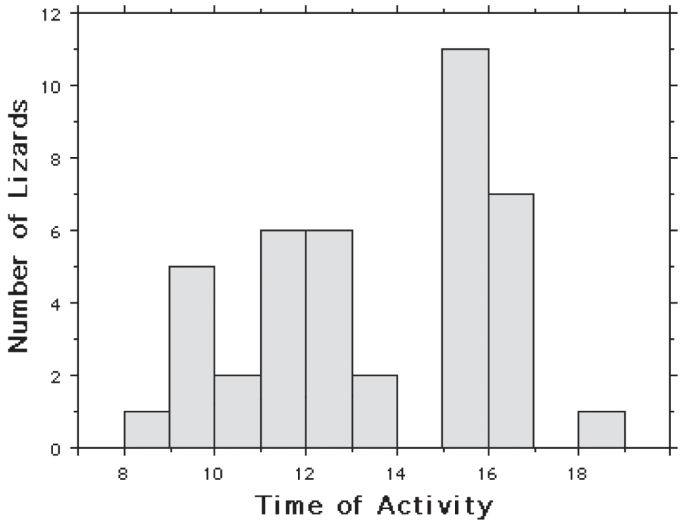

Figure 2. During summer, *Ctenophorus reticulatus* are active early and late in the day.

leave these elevated perches to forage on the ground, but when threatened, they rapidly retreat under cover or go into burrows.

Thermal Relations. *Ctenophorus reticulatus* are active early and late in the day during summer (Figure 2). These lizards are active thermoregulators: body temperatures are positively correlated with ambient air temperatures (Figure 3). Average body tem-

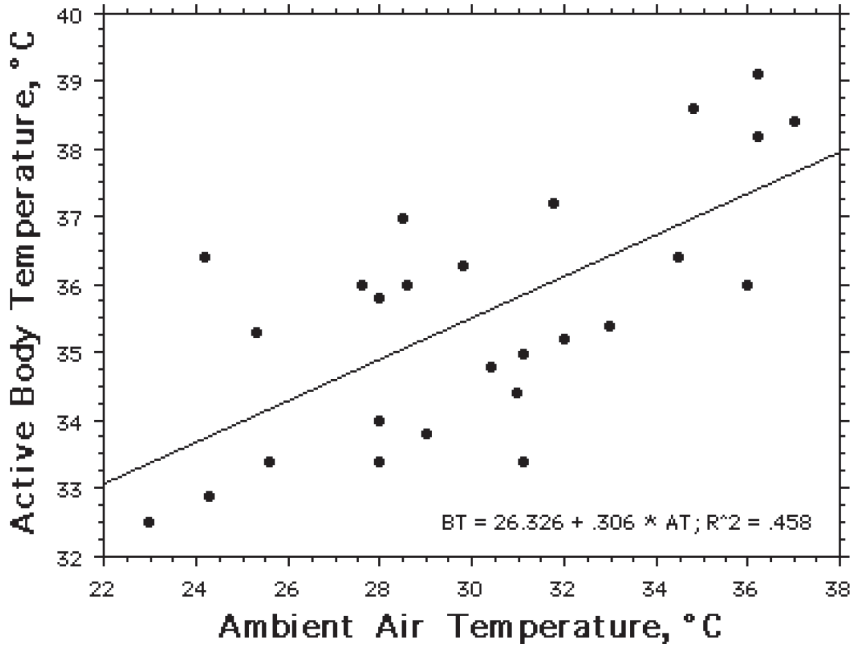

Figure 3. Body temperatures plotted against ambient air temperature for 34 active *Ctenophorus reticulatus*.

perature of 34 active individuals was 34.1°C.

Diet. *Ctenophorus reticulatus* is an omnivorous dietary generalist, eating plant material as well as a variety of arthropods, including ants (31.6% by volume), termites (27.4%), and grasshoppers (5.8%) as well as vegetative material (23.6%). Its dietary niche breadth is 4.23 (Table 1).

Reproduction. Seven gravid females were collected from September to December: clutches varied from 3 to 6 eggs (mean = 4). Average snout vent length (SVL) of these adult females was 74.7 mm, and their average weight was 14.3 g (N=4). Adult males are larger, averaging 86.9 mm in SVL and 21.8 g in weight (Ns=13 and 9). Two hatchlings measured 31 mm SVL.

Rarity. *Ctenophorus reticulatus* is rare in my samples because it does not occur in spinifex-sandplain habitats and was thus found only on one study site (Pianka 2014).

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Table 1. Summary of stomach contents of 41 *Ctenophorus reticulatus.*

Number	Number	Number %	Volume	Volume %	Frequency
Centipedes	3	0.12	0.8	2.57	2
Aranae	4	0.17	0.5	1.61	4
Ants	1177	48.74	9.82	31.59	33
Wasps	4	0.17	0.08	0.26	3
Locustids	6	0.25	1.8	5.79	6
Phasmids	1	0.04	0.01	0.03	1
Coleoptera	27	1.12	0.63	2.03	9
Isoptera	1086	44.97	8.51	27.37	10
Hemiptera	52	2.15	0.75	2.41	12
Larvae	27	1.12	0.82	2.64	4
Other Insects	2	0.08	0.04	0.13	2
Vegetative	26	1.08	7.33	23.58	26
Totals	2415	100	31.09	100	112

valuable advice and tips for how to cope with living in the outback. G. M. Storr of the Western Australian Museum helped greatly as well. Stomach contents were identified by M. E. Egan. V. Johnson Dennison assisted with dissections, data, and laboratory analyses. This research was supported by grants from the US National Institute of Health and the US National Science Foundation. Specimens are housed in the Los Angeles County Museum of Natural History.

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