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A HAWAIIAN WOLF SPIDER, *LYCOSA HAWAIIENSIS* SIMON FORAGING IN THE TOP OF A *METROSIDEROS POLYMORPHA* TREE

Of the lycosid spiders, most *Lycosa* species are ground dwellers (e.g., Dondale et al. 1971, Turnbull 1973, Bixler 1970). However, *Lycosa rabida* and *L. punctatum* have been found in vegetation (Kaston 1948, Barnes 1953, Whitcomb et al. 1963) and *L. rabida* has been noted on the lower branches of trees (Kuenzler 1958).

Several endemic Hawaiian species of *Lycosa* (see Simon 1900, Suman 1964, Gertsch 1973) are abundant in subalpine, alpine and aeolian zones of Hawai'i's highest mountains, and in aeolian habitats on fresh lava flows on the geologically active island of Hawai'i (Howarth 1979, Howarth and Montgomery 1980). Very little is known of their ecology and behavior. Their presence in barren lava regions is maintained by windborne prey transported onto the flows from adjacent vegetated areas. I have observed *Lycosa* on 'a'a lava flows at and above treeline on the island of Maui. Typically, the spiders forage at ground level, but may perch upon higher vantage points such as lava boulders and outcrops. I had never previously observed the spiders in low native shrubs nor collected them by sweeping vegetation.

On 1 September 1982, 14:54 h, at 1700 m elev. in the Ko'olau Gap of Haleakala on the island of Maui, a mature female *Lycosa hawaiiensis* Simon (c. 2.75 cm body length) was observed stationed upon the apical tips of a *Metrosideros polymorpha* tree (c. 2.4 m in ht.). The predominant vegetation was subalpine scrub near the upper limit of *Metrosideros* in the gap. The nearest neighboring tree was about 175 m away. Surrounding the tree were low, endemic, xerophytic plants (*Vaccinium, Coprosma, Deschampsia, Styphelia,* etc.), growing on largely unweathered 'a'a lava and cinder. The weather was mostly clear, with convectional winds moving up the gap from the northeast, 5-10 knots. The broken, rocky terrain provided habitat for an abundant *Lycosa* population. The spiders were commonly seen running upon crags and between clinker. The arboreal spider was collected after observations of her behavior and found to be the same species as those seen on the ground.

The atypical location of the adult female spider above the substrate and in the apical branches of a lone tree seemed unusual, so I stopped and observed her behavior for about 15 minutes. The spider was perched at the terminal growth of leaves, near several senescing inflorescences (about 35 cm from the nearest cluster). The spider's posterior three pairs of legs were clutched firmly upon the apical leaf buds of the tree, which swayed about occasionally in the wind. The front pair of legs were held free. The spider was motionless when first spotted, but soon after observations began, several large sarcophagid flies arrived and flew about the terminal branches of the tree in the vicinity of the inflorescences. When the flies passed close to the spider, she darted after them, but failed to capture any. I presented the knob-like end of a flowerstalk of the composite week, *Hypochaeris radicata,* to the spider, and waved the flower bud close to her face. The spider immediately lunged and grasped the bud in her chelicerae. Her grip was tenacious enough so that she retained hold on the stalk when I released it.

It was clear that the spider was foraging in the tree, and had not been on the terminal branchtips by chance. Vegetational perching is seen frequently among

the Thomisidae and Oxyopidae, and to a lesser extent, among the Salticidae. Thomisids and salticids were represented in the area, but perhaps due to the more open nature of the subalpine setting, lycosids were by far the most abundant arachnids in the vicinity. Since the majority of the lycosid spiders seen at the site were encountered on the ground, I initially suspected that the tree-inhabiting individual was senescing or showing aberrant behavior. However, its vigorous pursuit of flying insects and ready attack at a proferred object suggest otherwise. Although previous surveys of canopy arthropods in Hawai'i have not encountered lycosid spiders (Gagne 1979), observation of a female lycosid on *Dubuatia menziesii* (a sturdy, compact-leaved alpine shrub) in Haleakala (Gagne pers. comm.) suggests that venturing upon vegetation during foraging activities may not be unusual among the subalpine *Lycosa* in Hawai'i. Further observations are needed to clarify this point.

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