

SHORT COMMUNICATION

THE USE OF FRUITS BY THE NEOTROPICAL HARVESTMAN *NEOSADOCUS VARIABILIS* (OPILIONES, LANIATORES, GONYLEPTIDAE)

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Harvestmen are solitary, nocturnal foragers that have a variety of feeding habits, ranging from scavenging to predation (see review in Gnaspini 1996). Although harvestmen seem to be generalist omnivorous arthropods, accepting both plant and animal matter, several species show a tendency to carnivory (Bristowe 1949; Capocasale & Bruno-Trezza 1964; Anuradha & Parthasarathy 1976; Gnaspini 1996; Machado et al. 2000). Reports of frugivory in harvestmen are scarce and in general are restricted to captive animals (Capocasale & Bruno-Trezza 1964; see also Gnaspini 1996). In this paper we provide the first detailed account of frugivory by a harvestman species, and investigate if fruit size and chemical content of the fleshy portion can influence fruit use by the harvestmen.

The study was conducted from October 1995 to February 1997 in the lowland forest of the Parque Estadual Intervalles (24°14'S, 48°04'W), a 490 km² reserve located in the Ribeira Valley, São Paulo state, southeast Brazil. The study site (Saibadela Research Station, elevation 70 m) receives about 4200 mm of rainfall a year, with no month receiving less than 100 mm. Rainfall, however, is less intense and less frequent between April and August, when the temperature may drop to nearly 10 °C (mean \pm SD = 20.8 °C \pm 2.5 for the study period). This period contrasts with the wetter period (September–March) when temperatures may reach 42 °C (25.7 °C \pm 2.8).

The vegetation is predominantly composed of old-growth forest (*sensu* Clark 1996) with an open understory and trees reaching up to 30 m.

The fruits of the following trees were used to investigate frugivory in harvestmen: *Virola oleifera* (Myristicaceae), *Eugenia stictosepala* (Myrtaceae), *Cabranea canjerana* (Meliaceae), *Citharexylum myrianthum* (Verbenaceae), *Alchornea glandulosa* and *Hyeronima alchorneoides* (Euphorbiaceae), throughout this paper referred to only by their generic names. Besides their availability, these fruits were selected for study because (1) they fall within three discrete size classes commonly found in tropical forests (Corlett 1996; see Table 1); (2) all of them are covered by a thin skin which allows the exploitation by harvestmen, and (3) they fit within two distinct extremes relative to the lipid content of their fleshy portions; the arils of *Virola*, *Cabranea* and *Alchornea* are lipid-rich, while the pulps of *Eugenia*, *Citharexylum* and *Hyeronima* are lipid-poor (Table 1). The fruits of *Eugenia*, *Citharexylum* and *Hyeronima* are drupes bearing one (*Eugenia* and *Hyeronima*) or two seeds (*Citharexylum*). The fruits of the remaining species are capsules that open to expose the 1–12 fruits, i.e., seeds coated by red (*Virola* and *Alchornea*) or orange (*Cabranea*) arils. These fruits are eaten by birds, monkeys and/or bats which frequently drop many fruits under the parent plants (Galetti 1996; Pizo