

Feeding Behaviour of the Squirrel, *Sciurus granatensis* Humboldt, on Cocoa Pods in Trinidad W.I.

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Sciurus granatensis Humboldt, the red-tailed squirrel, is the only squirrel species known to occur in Trinidad (Boos 1986). It is distributed from north central Costa Rica to central Ecuador and eastwards from the Pacific Ocean through Venezuela north of the Orinoco River, including the islands of Margarita, Tobago and Trinidad (Nitikman 1985). This species occupies diverse ecological habitats ranging from tropical forest, where populations reach high densities, to crop lands, where it is considered a serious pest. Interest in squirrel activity was stimulated by the massive destruction of cocoa pods and the reduction of yield at a cocoa estate located near the 16 3/4 mile post on the Naparima Mayaro Road, Trinidad, W.I. This paper reports some observations on the feeding behaviour of the squirrel, *Sciurus granatensis*, on this estate.

During January to March 1992 squirrel feeding was monitored for 20 days. The number of squirrels feeding on cocoa pods was noted every hour from 04.00 hours to 19.00 hours. Records for the number of squirrels feeding are given both as the arithmetic and Williams means (Haddow 1960).

Squirrel feeding occurred on all 20 days of observation. Though derived from a small number of observations (Table 1) the pattern of feeding is clear, and the arithmetic and Williams means correspond closely (Fig 1). Feeding was diurnal, between 06.00 and 18.00 hours, and showed a bi-modal pattern with two well-defined peaks, one at 06.00-09.00 (39% of feeding squirrels) and the other at 15.00-18.00 hours (38% of feeding squirrels). No squirrels were observed feeding after 19.00 hours or before 06.00 hours.

The pattern, which occurred every day is consistent with observations made by Vesey-FitzGerald (1963). In addition, solitary feeding was also observed, with squirrels maintaining a spatial distance of several metres and actively avoiding each other (Nitikman 1985). Worth et al. (1968) working in the Bush Bush Forest in the Nariva Swamp, Trinidad established trap lines at ground level but did not collect squirrels whereas during the present study both ground and canopy level feeding were observed. It is possible that the squirrels in the Worth et al. (1968) study were "trap shy" or the baits used were not preferred.

In Trinidad, *S. granatensis* is an omnivorous feeder, with insects (e.g. bark beetles and larvae), fruits

(e.g. coconuts, berries), bird eggs and nestlings and plantspecies forming major components of its diet (Chadee, pers. observations, Nitikman 1985).

Table 1. Feeding behaviour of *Sciurus granatensis* over 20 days at a cocoa estate located on the Naparima Mayaro Road, Trinidad, January to March, 1992.

Time (hr)	No. of feeding visits observed	%
04.00-05.00	0	0
05.00-06.00	0	0
06.00-07.00	4	4.2
07.00-08.00	20	21.1
08.00-09.00	13	13.7
09.00-10.00	4	4.2
10.00-11.00	2	2.1
11.00-12.00	0	0
12.00-13.00	0	0
13.00-14.00	2	2.1
14.00-15.00	4	4.2
15.00-16.00	8	8.4
16.00-17.00	19	20.0
17.00-18.00	14	14.7
18.00-19.00	5	5.3
19.00-20.00	0	0
Total	95	100.0

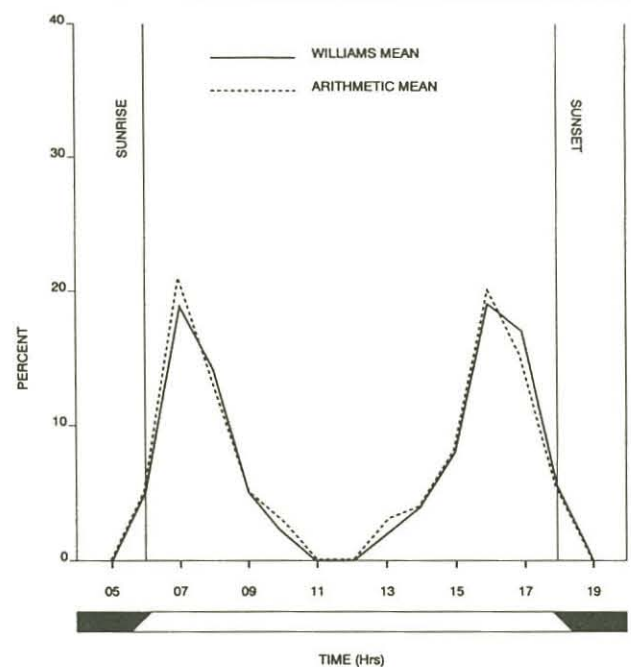


Figure 1. Feeding pattern of *Sciurus granatensis* at a cocoa estate located on the Naparima Mayaro Road, Trinidad, January to March, 1992. No squirrels observed between 19.00 and 06.00 hours.

It is noteworthy that Vesey-FitzGerald (1936) reported on the destructive nature of squirrels to cocoa in Trinidad and indicated that it was "a usual practice to pay a bounty of six (6) cents for each tail" whereas in Colombia, South America, the damage caused to agricultural crops by squirrels was substantial and a bounty of \$1.50 per tail was paid (Hernandez-Camacho 1957).

Based on the time of day when peak feeding activity has been observed in the field, an effective way to observe feeding in nature would involve exposing food or seeking out feeding sites between 06.00-09.00 hours. It is clear that further studies on this activity should be conducted, especially as the demand for and price of cocoa increase on the world market. Therefore, it is quite possible that many abandoned cocoa estates may be rehabilitated if the price of cocoa continues to increase. It has been estimated that over 80 kilograms of dry cocoa is destroyed per squirrel during the cocoa season which lasts from September to March each year, thus culling of the squirrel populations may be an available option.

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