

THE ABUNDANCE OF SMALL MAMMALS IN TURURE FOREST, TRINIDAD

by
C.O.R. EVERARD*

and
ELISHA S. TIKASINGH**

Our studies on small mammals form part of an overall arbovirus (insect, tick and mite transmitted viruses) surveillance programme (Everard and Tikasingh, 1970; Tikasingh et. al., 1970) conducted in a small area of Turure Forest about 26 miles east of Port of Spain and about 3 miles west of Sangre Grande between December 1966 and March 1969.

Turure Forest forms part of the Guaico-Valencia Reserve and covers an area of approximately 20 square miles. On the northern side it is bounded by the Valencia-Toco Road, while the southern margin extends to the Eastern Main Road between Valencia and Guaico. According to Beard (1946), Turure is an evergreen seasonal marsh-forest with an emergent canopy of hardwoods and a lower stratum, up to 30 feet, of small trees and palms, the commonest of which is timité (*Manicaria saccifera*). The soil impedes drainage so that during the rainy season pools of standing water develop and the fibrous roots and leaf litter are constantly moist. Excellent natural burrows are found beneath the shallow rooting systems of the hardwoods which has been caused by extensive under-cutting of the soil as a result of climatic and edaphic conditions. The average rainfall is about 100 inches per year although there is a marked dry season between February and late April or early May.

Mammal trapping was undertaken with the exclusive use of small and medium-sized Havahart live capture traps for 2 to 4 nights per week using coconuts, bananas and pawpaw as bait. During the three-year study period parallel trap lines, grid traps, or a random distribution were employed, with trapping being conducted both on the ground and in trees. Captured mammals were placed in linen bags at the point of capture, labelled, and then transferred to wire-covered pans at the field laboratory. Processing took place either in Port-of-Spain or in the field laboratory where date of capture, trap number, toe clipping (if any) from a previous capture, sex, maturity, weight and external measurements in addition to other items were recorded. Newly-

* *Medical Research Council, External Staff.
Trinidad Regional Virus Laboratory*

** *Trinidad Regional Virus Laboratory.*

captured animals were always given a toe clipping for identification. Except for the few mammals kept for experimental purposes, all the others were released at the site of capture either on the same or on the following day.

The relative abundance of mammals expressed as a percentage of newly caught animals in both ground-and tree-placed traps is shown in Table 1. Allen and Chapman (1893; 1897) record many of the original descriptions of the small mammals found in Trinidad. All the indigenous genera of small rodents have been found in Turure Forest, as have all the marsupials with the exception of the Water opossum (**Cironectes**). The Silky ant-eater (**Cyclopes didactylus**) is known to exist in Turure; Agouti (**Dasyprocta agouti**), and Paca (**Agouti paca**), two of the larger rodents, are also present but have not been caught in our traps. The Water rat (**Nectomys**) is usually caught near flowing water which is therefore a limiting factor affecting their dispersal.

The number of animals caught per unit trapping effort can be used to show a broad increase or decrease in population densities. Newly-captured animals taken per 100 trap nights at Turure Forest for the three-year period are shown in Table 2. There is a marked population increase between 1968 and 1969 which can be attributed to the rapid population expansion of the Rice rat (**Oryzomys capito**) and the more gradual increase in numbers of one of the Spiny rats (**Proechimys guyannensis**). This is also reflected in the consistent increase in the number of recaptures from August 1968 onwards as presented in Table 3. Of the marked **O. capito** and **P. guyannensis** released, 51.0% and 62.3% were recaptured once, 9.5% and 22.1% were recaptured five times, and 2.1% and 4.8% respectively were taken 10 times (Everard and Tikasingh, in press).

The arboreal species are rarely taken on the ground, except for the Murine opossum (**Marmosa spp.**), but **O. capito** and **P. guyannensis**, which are the commonest mammals, do climb to a limited extent for several feet. Squirrels (**Sciurus granatensis chapmani**) are difficult to trap; they are more abundant than indicated in this study. The Woolly opossum (**Caluromys**) and the Tree rat (**Rhipidomys**) appear to be the most common truly arboreal species, although greater numbers of the Manicou (**Didelphis**) and the Spiny tree rat (**Echimys**) would probably have been caught if other baits had been employed.

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TABLE 1. Relative abundance of small mammals caught on the ground and in trees at Turure Forest, Trinidad, between December 1966 and October 1970

Species	c Habitat	a	
		On the Ground Percentage of 1st capture total	b In trees of 1st capture total
Caluromys philander trinitatis			
Woolly opossum : manicou gros-yeux	A	0.2	22.4
Didelphis marsupialis marsupialis			
Black-eared opossum : manicou	AG	2.5	—
Marmosa mitis chapmani			
Greater Trinidadian murine opossum	AG	8.1	3.0
Marmosa fuscata carri			
Lesser Trinidadian murine opossum	AG	6.7	3.0
Sciurus granatensis chapmani			
Trinidadian squirrel : ecuriel	A	0.3	4.4
Akodon urichi			
Grass mouse	G	7.6	4.4
Nectomys squamipes palmipes			
Trinidadian water rat	G	2.0	1.5
Oryzomys capito velutinus			
Terrestrial rice rat	G	28.6	22.4
Oryzomys concolor speciosus			
Arboreal rice rat	A	1.2	7.5
Rhipidomys couesi			
Tree rat	A	0.2	14.9
Zygodontomys brevicauda brevicauda			
Trinidadian cane rat	G	0.2	—
Heteromys anomalus anomalus			
Trinidadian spiny pocket mouse : pouched rat	G	1.2	—
Echimys armatus castaneus			
Greater Trinidadian spiny rat : pilori : porcupine rat	A	0.3	6.0
Proechimys guyannensis trinitatis			
Lesser Trinidadian spiny rat : long-tailed pilori	G	40.9	9.0
Coendu prehensilis longicaudatus			
Prehensile-tailed porcupine : porc e pic : coendu	A	—	1.5

a 409 first captures on the ground.
and ground-dwelling, G= ground.

b 67 first captures in trees.

c A= arboreal, AG= arboreal

Table 2. The number of newly captured mammals taken per 100 trap nights at Turure Forest between 1967 and 1969.

Year	No. of trap nights	New animals trapped	Animals per 100 trap nights
1967	11661	157	1.35
1968	12684	187	1.47
1969a	1882	65	3.45
Total/Mean	26227	409	1.56

a (January to March only)

Table 3. Quarterly trap night captures and recaptures of mammals at Turure Forest, January 1968 — March 1969.

Month/Year	Jan. to Mar. 1968	Apr. to Jun. 1968	Jul. to Sep. 1968	Oct. to Dec. 1968	Jan. to Mar. 1969	Total
Animals trapped	130	88	109	160	234	721
No. of trap nights	3531	3311	2706	3136	1882	14566
Animals per 100 trap nights	3.68	2.66	4.03	5.10	12.43	4.97 (mean)