



A Bat-Generated Fig Seed Shadow in Rainforest

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Biotropica, Vol. 10, No. 2. (Jun., 1978), p. 121.

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NOTE

A Bat-Generated Fig Seed Shadow in Rainforest

On 24 November 1977, in the primary rainforest above the Rio Camaronal, Sirena, Corcovado National Park, Osa Peninsula, Costa Rica, I encountered an area of understory vegetation liberally sprinkled with bat fecal splats containing only fig seeds of one size. On the vegetation, nearest neighbor distances between splats was about 1 meter, but as leaves covered only about a tenth of the ground, I suspect that they occurred at a density of about 10 per m² over an area of at least 2500 m². The seeds were counted in 119 splats and had the following distribution of seeds, beginning with 1 per splat: 0, 2, 5, 3, 6, 5, 6, 5, 3, 7, 4, 8, 9, 3, 7, 6, 4, 7, 3, 5, 1, 1, 3, 1, 2, 1, 1, 1, 2, 1, plus 1 each with 34, 35, 38, 39, 41, 42, and 43 seeds (n=119, \bar{X} = 14.7, s.d. = 8.9 seeds per splat). This result means that the bats had deposited about 367,500 fig seeds in a small area. One aroid leaf about 0.25 m² in area had 17 splats with a total of 242 seeds, but they were particularly concentrated on the foliage in its general vicinity.

I identified the fecal splats as belonging to bats because there were so many, because there were no other materials in them than the seeds of one species of fig, and because there was no trace of white urates associated with any splat. While figs customarily contain 30 to 60 percent seeds with fig wasp exits, it was most striking that all the seeds in the splats were intact seeds. This finding strongly suggests that the bats either thoroughly digest all parts of the fig other than the intact seeds, or are very selective in eating only the wall of the fig syconium and the immediately adjacent (usually) intact seeds (those with wasp exit holes tend to be more in the center of the fig).

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