

Janzen D H. Seed predation by animals. *Annu. Rev. Ecol. Syst.* 2:465-92, 1971.
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An interpretive eclectic review of the widespread and diffuse literature on the omnipresent phenomenon of animals preying on seeds, this paper focuses on the differences between pre- and post-dispersal seed predation, seed dispersal vs. seed predation, chemical and behavioral defenses of plants against seed predators, and the impact of seed predators on plant arrays. [The SCI® indicates that this paper has been cited over 130 times since 1971.]

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"I was on the editorial committee of the new *Annual Review of Ecology and Systematics* largely because my office was a few feet down the hall from that of Charles Michener, who, along with Dick Johnston, invented this annual review. I was fretting over seed predation as an easily observable, but unappreciated, phenomenon, largely because of the prevailing botanical attitude that 'since plants produce so many seeds and only one need survive to adult status, even intense seed predation is unimportant.' Simultaneously, I was suffering a terminal case of the disease so common among young academic biologists. This is best described as 'why should I bother to read the literature because 1) it takes time away from field work; 2) most writers are stupid, unobservant, and wrong; 3) you can't find it when you want it; and 4) my ego and motivation will be dealt a severely debilitating blow by discovering that someone else has already published my brilliant idea or observation.' The latter cause is the primary cause of the other three and is generally implicit in most academics' responses to the literature. I detested going to the library. I therefore volunteered to write a review of

seed predation because I knew it would force me to read. I then procrastinated for ten months, finding a thousand excuses why not to go to the library. In early December 1970, the fear of the January 15, 1971, deadline drove me into the University of Chicago library, and it was like stepping out of a spaceship onto a new planet. The library was a new habitat strewn with new facts, observations, and ideas. I searched it as one would search a new kind of forest, and solved the ego problem quite accidentally by discovering that for every one of my own ideas that I discovered already published, there were hundreds of unexploited facts, observations, and ideas. The elephants I could not see in 1969 in India I found in the 1896 issue of the *Journal of the Bombay Natural History Society*. I found passenger pigeons in that library and thus found an understanding of oak mast seeding that had escaped all writers on oak trees. My infatuation with the library became so intense that I cancelled the last three lectures of the semester in the biology course I was teaching; I found that I could not bring my mind to focus on what I was supposed to talk about. Writing the paper was easy; it was cutting the 200-page manuscript to the required 65 pages that was hard. By and large that paper is a long series of topic sentences pruned off the tops of paragraphs.

"Why is it frequently cited? Because it draws attention to a phenomenon that every field biologist had already observed many times but had not yet been given its own label; because there are parts of natural habitats where seed predation does influence some aspects of the structure of the plant array (it almost always has some effect on the animal array, since virtually all habitats contain some seed predators); and because people who write are by and large very lazy and therefore find it convenient to give lip service to the phenomenon by citing a review paper—and this is, to date, the only review paper on seed predation (but see Janzen, 1980!)"

1. Janzen D H. Specificity of seed-attacking beetles in a Costa Rican deciduous forest. *J. Ecology* 68:929-52, 1980.