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Environmental disturbances and biological invasion

Invasion by exotic species is a major threat to biodiversity worldwide. Exotic ants such as the Argentine ant and the fire ant are often among the worst invaders; therefore they have recently attracted great attentions of scientists both on the basic and applied basis. So far most researchers studying ant invasion take the approach assuming that a community at equilibrium in which competition and niche are the major ecological factors forming the community structure. However, nobody has seriously considered the fact that invasive ants (and possibly invasive exotic species in general) are usually disturbed habitat specialists. In order to understand the causal relationship between human-caused disturbance of environments and invasion of exotic species I am currently conducting extensive studies both empirical and theoretical (see references).

Nakamaru M, Beppu Y and Tsuji K (2007) Does disturbance favor dispersal? An analysis of ant migration using the colony-based lattice model. *Journal of Theoretical Biology* 248: 288–300.

Matsuura K, Vargo EL, Kawatsu K, Labadie PE, Nakano H, Yashiro T, Tsuji K (2009) Queen succession through asexual reproduction in termites. *Science* 323(5922) : 1687-1687.

Biography

My major scientific interest has been the evolution of social behavior in insects such as ants and termites. Recently I have been extending my focus to conservation biology and community ecology. After receiving a PhD at Nagoya University in 1989 under the supervision of Yoshiaki Ito, I did postdoctoral research at the University of Würzburg, Germany, where I was supervised by Bert Hölldobler. I was hired for a tenured position at Toyama University in 1995, and in 2001 I moved to the University of the Ryukyus, Okinawa, Japan. Currently, I am the director of the university museum and a professor of the Faculty of Agriculture, University of the Ryukyus, where I teach ecology, evolutionary biology, and entomology. I was chief editor of the *Journal of Ethology* from 2002 to 2004 and will be an editorial board member of *biology letter* from 2010.