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More Plants, More Bugs?

There are a lot more plant species in the tropics than in temperate regions. There are a lot more plant-eating insects in the tropics, too, and scientists have long wondered why.

The explanation could be relatively simple — more types of plants make for more types of insects. Or it could be more complex — in the tropics, there could be fewer plant species serving as a food source for each insect species, on average, than in temperate zones. This greater “host specificity” among tropical plants — more finely dividing the food supply — would allow more insect species to thrive.

A study in the journal *Science* that directly compares communities of leaf-eating insects in a temperate climate (in the Czech Republic and Slovakia) and in a tropical one (Papua New Guinea) suggests that host specificity does not play a role.

The researchers, led by Vojtech Novotny of the University of South Bohemia in the Czech Republic, collected all the insect species feeding on 22 tree species at the Czech and Slovak sites and 22 species in Papua New Guinea. (In all, some 850 insect species were represented.) A critical aspect of the study was controlling for phylogenetic relationships — how closely or distantly related the tree species are — so they were equivalent between the two regions.

The researchers found no significant difference between the two regions in how many plant species were host to each insect. So the simpler explanation — that diversity of plant species leads to diversity of insects — would seem to apply.