



Biological Interactions

What appear to be bright red flowers of the *Heliconia* plant pictured on the cover are actually tubular bracts that protect the smaller flowers. Only the long beak of a hummingbird, the plant's primary pollinator, can probe the base of the flower and secure its nectar. In fact, several rare hummingbird species drink several times their own body weight in *Heliconia* nectar every day.

The bracts also trap rainwater where insects spend their entire lives. The chance of a meal attracts small predators such as the red-eyed treefrog, *Agalychnis callidryas*, we see staring out at us from its perch atop the bract. The leaves of a *Heliconia* are broad and green. So the frogs actually spend much of their time sleeping on these leaves where they can hide their bright green color until they are ready for a meal.

Other animals prefer to spend time on *Heliconia* plants also. From below a leaf, tent bats create an umbrella by chewing the veins on either side of the midrib until it collapses. Here, up to a dozen bats may hang, protected from sun, rain, and a potential predator. On the other hand, tent bats are one of the red-eyed treefrog's major predators.

From this single cover photo, you can learn of the countless interactions of species in one area. The *Heliconia*, the hummingbirds, the treefrogs, the insects, and the tent bats live in the tropical rainforests of Central America. The rainforest is being cleared for cattle grazing at an alarming rate, and many species that occur here risk becoming endangered. Many species and interactions among species are not yet known. Through our study of biology, not only can we learn more about how the rainforest functions, but potentially how to help preserve it.

Go Green. Save Green. McGraw-Hill eBooks.

Green... it's on everybody's minds these days. It's not only about saving trees; it's also about saving money. Available for a greatly reduced price, McGraw-Hill eBooks are an eco-friendly and cost-saving alternative to the traditional print textbook. So, you do some good for the environment... and you do some good for your wallet.

Visit www.mhhe.com/ebooks for details.

The McGraw-Hill Companies

Higher Education

ISBN 978-0-07-340342-7
MHID 0-07-340342-3
Part of
ISBN 978-0-07-728009-3
MHID 0-07-728009-1



www.mhhe.com