## CHEMISTRY
### A Boron Bridge

Boron compounds have been of continued fundamental interest because of their tendency to adopt unusual electron-deficient bonding. Unlike carbon, boron can form so-called 3-center, 2-electron bonds with two other atoms. Braunschweig et al. have now coaxed boron into a different arrangement, which resembles that of the central carbon in allene. They prepared two compounds in which a lone B atom bridges two transition metal centers: a pentamethylcyclopentadienyl iron dicarbonyl on one side, and either iron tetracarbonyl or chromium pentacarbonyl on the other. X-ray crystallography confirmed an essentially linear bridge structure in both compounds. Density functional theory suggests that the boron forms a traditional 2-electron $\sigma$ bond with each metal, as well as a partial $\pi$ bond. Similar compounds have been prepared with the heavier group 13 elements (gallium and thallium), but in those cases $\pi$ bonding is absent. — JSY

*Angew. Chem. Int. Ed.* **44**, 1658 (2005).

## ECOLOGY/EVOLUTION
### The Difference a Week Makes

Migration is well established as a mechanism by which animals cope with seasonal variations in food supply. It is has also been suggested as a possible way of reducing the burden of parasitism in a range of hosts, either by weeding out infected individuals or by allowing them to escape from environments in which parasites
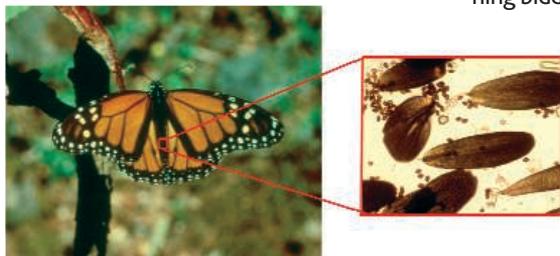


**Parasite spores (right, small ovoids) among abdominal scales (right, large ovals) of the monarch (left).**

have accumulated. Bradley and Altizer provide evidence that one of the more spectacular examples of migration— that of the monarch butterfly in the North America—may have evolved at least in part as such a mechanism.

Not all monarch populations migrate, and parasite prevalence is known to be lower in the migratory monarch populations. Butterflies from migratory populations inoculated with a protozoan parasite showed reductions in flight performance and endurance in experimental cages, probably because the parasite influenced metabolic processes associated with flight (there were no changes in wing morphology associated with the presence of the parasite). The authors estimate that the impairment would lengthen the migratory journey from 9 to 10 weeks. Under these conditions, parasitized butterflies would likely suffer a reduced chance of reaching their destination, thus accounting for the differences in parasite burden between migrant and nonmigrant monarchs. Because habitat loss and climate change are expected to affect migrant populations more severely, the prevalence of parasites is likely to increase. — AMS

*Ecol. Lett.* **8**, 290 (2005).

## BEHAVIORAL SCIENCE
### First In, Last Out

In a first-price auction, players submit sealed bids for a known item, which is then sold to the highest bidder at the price of that bid. In a seller's English clock auction, the initial price is high and decreases at a steady rate; players choose not to buy by exiting, and the auction ends when the item is sold to the last player at the price at which the penultimate player exited.

Berg et al. have modified these two types of auction protocols to explore risk-phobic and risk-philic behavior of subjects. In their version of the first-price auction, the winning bidder is then awarded a monetary sum equal to the difference between the resale price of the item and their bid (generally less than the resale price); for the English clock auction, the last player receives a sum equal to the sale price, whereas the other players receive the same sum but only with a known, non-zero probability (i.e., in some cases they would receive nothing). The authors find that subjects in the first-price auction do not risk making low bids in the hope of gaining a larger payoff and do, in fact, place their bids somewhere between the risk-neutral threshold and the actual resale price. However, in the English clock auction, subjects are more apt to play the gamble, so that they exit the auction earlier than expected value would predict. — GJC

*Proc. Natl. Acad. Sci. U.S.A.* **102**, 4209 (2005).