



**Cover:** The water bug *Aphelocheirus aestivalis* spends its whole life submerged, using a plastron – a permanent air film held in place by millions of tiny hairs – to gain oxygen from the surrounding water. Seymour et al. (pp. 2840-2846) measured the oxygen concentration within the plastron and the surrounding water. A 500- $\mu\text{m}$ -thick zone with reduced oxygen ('boundary layer') around the bug guarantees oxygen supply in inactive bugs in stagnant water at moderate temperatures. At higher temperatures or reduced oxygen partial pressures, however, the bugs may require a thinner boundary layer, which can be achieved by swimming or living in fast-moving waters. Photo credit: Stefan K. Hetz.

### INSIDE JEB

- 2815** Kids are clumsy runners because they are small; Largescale foureyes launch jaws to feed on land; *Daphnia* sniff out doom with first antennae; Toadfish hearing improves with age

### CLASSICS

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- 2840** Respiratory function of the plastron in the aquatic bug *Aphelocheirus aestivalis* (Hemiptera, Aphelocheiridae)  
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