



Cover: In *Amphimedon queenslandica* larvae, phototaxis is conferred by posterior, concentric rings of pigmented and ciliated cells. This image is artificially colored to highlight ciliated cells (purple) that act as light-responsive 'rudders' to steer the living larvae. Because sponges are not known to possess nervous systems or opsins, the molecular components of sponge phototaxis must differ from other animals. Rivera et al. (pp. 1278–1286) characterize two cryptochrome genes in *A. queenslandica*. One is expressed near the pigment ring, and its protein contains a co-factor responsive to wavelengths of light that also mediate photic behavior, suggesting a cryptochrome may act in the aneural, opsin-less eye of a sponge. Photo credit: Sally Leys.

▼ Inside JEB

False killer whales focus echolocation clicks i;
Endocannabinoids motivated exercise evolution i; **Sponge larvae could be guided by cryptochrome ii;** **Preferred hosts don't offer best dining opportunities iii**

Commentary

Kier, W. M. The diversity of hydrostatic skeletons. 1247-1257

Research Articles

► **Khokhlova, I. S., Fielden, L. J., Degen, A. A. and Krasnov, B. R.** Digesting blood of an auxiliary host in fleas: effect of phylogenetic distance from a principal host. 1259-1265

Peisker, H. and Gorb, S. N. Evaporation dynamics of tarsal liquid footprints in flies (*Calliphora vicina*) and beetles (*Coccinella septempunctata*). 1266-1271

D'Alba, L., Kieffer, L. and Shawkey, M. D. Relative contributions of pigments and biophotonic nanostructures to natural color production: a case study in budgerigar (*Melopsittacus undulatus*) feathers. 1272-1277

► **Rivera, A. S., Ozturk, N., Fahey, B., Plachetzki, D. C., Deggan, B. M., Sancar, A. and Oakley, T. H.** Blue-light-receptive cryptochrome is expressed in a sponge eye lacking neurons and opsin. 1278-1286

Franklin, E. L., Robinson, E. J. H., Marshall, J. A. R., Sendova-Franks, A. B. and Franks, N. R. Do ants need to be old and experienced to teach? 1287-1292

Whitehead, A., Roach, J. L., Zhang, S. and Galvez, F. Salinity- and population-dependent genome regulatory response during osmotic acclimation in the killifish (*Fundulus heteroclitus*) gill. 1293-1305

► **Klopper, L. N., Nachtigall, P. E., Donahue, M. J. and Breese, M.** Active echolocation beam focusing in the false killer whale, *Pseudorca crassidens*. 1306-1312

Gätschenberger, H., Gimple, O., Tautz, J. and Beier, H. Honey bee drones maintain humoral immune competence throughout all life stages in the absence of vitellogenin production. 1313-1322

McKenzie, D. J., Steffensen, J. F., Taylor, E. W. and Abe, A. S. The contribution of air breathing to aerobic scope and exercise performance in the banded knifefish *Gymnotus carapo* L. 1323-1330

► **Raichlen, D. A., Foster, A. D., Gerdeman, G. L., Seillier, A. and Giuffrida, A.** Wired to run: exercise-induced endocannabinoid signaling in humans and cursorial mammals with implications for the 'runner's high'. 1331-1336

Schewe, B., Blenau, W. and Walz, B. Intracellular pH regulation in unstimulated *Calliphora* salivary glands is Na⁺ dependent and requires V-ATPase activity. 1337-1345

Lorioux, S., DeNardo, D. F., Gorelick, R. and Lourdaux, O. Maternal influences on early development: preferred temperature prior to oviposition hastens embryogenesis and enhances offspring traits in the Children's python, *Antaresia childreni*. 1346-1353

Lague, S. L., Speers-Roesch, B., Richards, J. G. and Farrell, A. P. Exceptional cardiac anoxia tolerance in tilapia (*Oreochromis hybrid*). 1354-1365

MacMillan, H. A., Williams, C. M., Staples, J. F. and Sinclair, B. J. Metabolism and energy supply below the critical thermal minimum of a chill-susceptible insect. 1366-1372

Sánchez-Gurmaches, J., Cruz-García, L., Gutiérrez, J. and Navarro, I. Adiponectin effects and gene expression in rainbow trout: an *in vivo* and *in vitro* approach. 1373-1383

Tremblay, P., Grover, R., Maguer, J. F., Legendre, L. and Ferrier-Pagès, C. Autotrophic carbon budget in coral tissue: a new ¹³C-based model of photosynthate translocation. 1384-1393

Morawska, M. M. and Fendt, M. The effects of muscimol and AMN082 injections into the medial prefrontal cortex on the expression and extinction of conditioned fear in mice. 1394-1398

Borycz, J., Borycz, J. A., Edwards, T. N., Boulianne, G. L. and Meinertzhagen, I. A. The metabolism of histamine in the *Drosophila* optic lobe involves an ommatidial pathway: β -alanine recycles through the retina. 1399-1411

Cocco, N. and Glendinning, J. I. Not all sugars are created equal: some mask aversive tastes better than others in an herbivorous insect. 1412-1421

Corrigendum

Kearney, M. R., Matzelle, A. and Helmuth, B. Biomechanics meets the ecological niche: the importance of temporal data resolution. 1422-1424

► Article featured 'Inside JEB'