



**Cover:** The blue-ringed octopus, *Hapalochlaena lunulata*, displaying blue rings as an aposematic colour signal. Animals and plants use polarisation signalling in communication, as reviewed by Marshall et al. (jeb134213). Photoreceptor ultrastructure in octopuses and other cephalopods, like that in many invertebrates, enables polarisation sensitivity, an obvious pre-requisite for seeing and interpreting polarisation signals. This is of particular interest in cephalopods as almost all are colour blind and their intraspecific signalling language may rely on polarisation in place of hue. Colour signals, as from this blue-ringed octopus, have evolved for other animal colour vision systems to see. Photo credit: Roy Caldwell.

## INSIDE JEB

Returning chum salmon shift metabolism to cope with different river temperatures

**Knight, K.**  
jeb199869

Spittlebugs snorkel in cuckoo spit

**Knight, K.**  
jeb199109

Male killer whales unexpectedly hunt more than females

**Knight, K.**  
jeb197798

Bats tune in to the sound of rain

**Gilman, C.**  
jeb199083

Tiny *Drosophila* home in on forward sounds

**Knight, K.**  
jeb197780

## OUTSIDE JEB

Acetylcholine boosts turtle sense of direction

**Vahaba, D. M.**  
jeb192625

Nocturnal living beats the heat

**Turner, J. M.**  
jeb192633

Social networks buffer sickness

**McCallum, E.**  
jeb192641

Some guppies only have eyes for orange

**Borowiec, B. G.**  
jeb192617

Recovering from oxygen deprivation, froggy style!

**Birceanu, O.**  
jeb192658

## REVIEW

Polarisation signals: a new currency for communication

**Marshall, N. J., Powell, S. B., Cronin, T. W., Caldwell, R. L., Johnsen, S., Gruev, V., Chiou, T.-H. S., Roberts, N. W. and How, M. J.**  
jeb134213

## SHORT COMMUNICATION

Visuomotor strategies for object approach and aversion in *Drosophila melanogaster*

**Mongeau, J.-M., Cheng, K. Y., Aptekar, J. and Frye, M. A.**  
jeb193730

## RESEARCH ARTICLES

Food deprivation reduces social interest in the European sea bass *Dicentrarchus labrax*

**Aimon, C., Le Bayon, N., Le Floch, S. and Claireaux, G.**  
jeb190553

Facultative mobilization of eggshell calcium promotes embryonic growth in an oviparous snake

**Stewart, J. R., Pyles, R. A., Mathis, K. A. and Ecay, T. W.**  
jeb193565

Studies on gas exchange in the meadow spittlebug, *Philaenus spumarius*: the metabolic cost of feeding on, and living in, xylem sap

**Beckett, K. I. S., Robertson, A. B. and Matthews, P. G. D.**  
jeb191973

Alanine, proline and urea are major organic osmolytes in the snail *Theodoxus fluviatilis* under hyperosmotic stress

**Wiesenthal, A. A., Müller, C., Harder, K. and Hildebrandt, J.-P.**  
jeb193557

Bone without minerals and its secondary mineralization in Atlantic salmon (*Salmo salar*): the recovery from phosphorus deficiency

**Witten, P. E., Fjellidal, P. G., Huysseune, A., McGurk, C., Obach, A. and Owen, M. A. G.**  
jeb188763

Neurotrophin tuning of pharyngeal pumping reveals extrapharyngeal modulation of feeding in *Caenorhabditis elegans*

**Calahorra, F., Keefe, F., Dillon, J., Holden-Dye, L. and O'Connor, V.**  
jeb189423

Starvation resistance is associated with developmentally specified changes in sleep, feeding and metabolic rate

**Brown, E. B., Slocumb, M. E., Szuperak, M., Kerbs, A., Gibbs, A. G., Kayser, M. S. and Keene, A. C.**  
jeb191049

Sound localization behavior in *Drosophila melanogaster* depends on inter-antenna vibration amplitude comparisons

**Batchelor, A. V. and Wilson, R. I.**  
jeb191213

Chum salmon migrating upriver adjust to environmental temperatures through metabolic compensation

**Abe, T. K., Kitagawa, T., Makiguchi, Y. and Sato, K.**  
jeb186189

Do naked mole rats accumulate a metabolic acidosis or an oxygen debt in severe hypoxia?

**Pamenter, M. E., Dzal, Y. A., Thompson, W. A. and Milsom, W. K.**  
jeb191197

Configural learning: a higher form of learning in *Lymnaea*  
**Swinton, C., Swinton, E., Shymansky, T., Hughes, E., Zhang, J., Rothwell, C., Kakadiya, M. and Lukowiak, K.**  
jeb190405

Avoiding topsy-turvy: how Anna's hummingbirds (*Calypte anna*) fly through upward gusts  
**Badger, M. A., Wang, H. and Dudley, R.**  
jeb176263

Dynamics of pleasure–displeasure at the limit of exercise tolerance: conceptualizing the sense of exertional physical fatigue as an affective response  
**Hartman, M. E., Ekkekakis, P., Dicks, N. D. and Pettitt, R. W.**  
jeb186585

Kinematic signatures of prey capture from archival tags reveal sex differences in killer whale foraging activity  
**Tennessen, J. B., Holt, M. M., Hanson, M. B., Emmons, C. K., Giles, D. A. and Hogan, J. T.**  
jeb191874

Noise as an informational cue for decision-making: the sound of rain delays bat emergence  
**Geipel, I., Smeekes, M. J., Halfwerk, W. and Page, R. A.**  
jeb192005

Specialized movement and laterality of fin-biting behaviour in *Genyochromis mento* in Lake Malawi  
**Takeuchi, Y., Hata, H., Maruyama, A., Yamada, T., Nishikawa, T., Fukui, M., Zatha, R., Rusuwa, B. and Oda, Y.**  
jeb191676

Traction reinforcement in prehensile feet of harvestmen (Arachnida, Opiliones)  
**Wolff, J. O., Wiegmann, C., Wirkner, C. S., Koehnsen, A. and Gorb, S. N.**  
jeb192187

Environmental temperature effects on adipose tissue growth in a hibernator  
**MacCannell, A. D. V., Sinclair, K. J., McKenzie, C. A. and Staples, J. F.**  
jeb194548

Agonistic behaviour and energy metabolism of bold and shy swimming crabs *Portunus trituberculatus*  
**Su, X., Sun, Y., Liu, D., Wang, F., Liu, J. and Zhu, B.**  
jeb188706

A lethal fungal pathogen directly alters tight junction proteins in the skin of a susceptible amphibian  
**Gauberg, J., Wu, N., Cramp, R. L., Kelly, S. P. and Franklin, C. E.**  
jeb192245

Nitrogen handling in the elasmobranch gut: a role for microbial urease  
**Wood, C. M., Liew, H. J., De Boeck, G., Hoogenboom, J. L. and Anderson, W. G.**  
jeb194787

#### CORRECTION

Correction: New approaches for assessing squid fin motions: coupling proper orthogonal decomposition with volumetric particle tracking velocimetry (doi:10.1242/jeb.176750)  
**Bartol, I. K., Krueger, P. S., York, C. A. and Thompson, J. T.**  
jeb200634