



Cover: Oxidative stress is a major cost of and constraint on behavioural and life-history strategies. Research on the link between oxidative stress and reproductive tactics (e.g. parental care, demonstrated here by a female raccoon *Procyon lotor* with her pup) has yielded seemingly conflicting evidence. Costantini (jeb194688) discusses often-neglected features that reconcile some of those inconsistencies, suggests new definitions of oxidative stress and proposes the redox signalling hypothesis to highlight that a trade-off between signalling and oxidative stress underlies the regulation of reactive oxygen species production and their subsequent impact on reproduction and other life-history traits. Photo credit: David Costantini.

INSIDE JEB

Whispering southern right whale mums and calves seek refuge in surf

Knight, K.
jeb208520

Ocellate river stingrays munch like some rats

Knight, K.
jeb209155

Elbows key for walkers' efficiency

Knight, K.
jeb207100

SERCA boosted in chilly chicks' flight muscle for warmth

Knight, K.
jeb208512

OUTSIDE JEB

A soaring success: repeated evolution of island flightlessness

Ruhr, I.
jeb192898

Sit tight: nest temperature affects infection resistance of chicks

Nowack, J.
jeb192872

Deep breathing in tired trout

Turko, A.
jeb192906

Pesticides put the bumble back into bumblebees

Evans, A.
jeb192880

COMMENTARY

Understanding diversity in oxidative status and oxidative stress: the opportunities and challenges ahead

Costantini, D.
jeb194688

SHORT COMMUNICATION

Acoustic crypsis in southern right whale mother–calf pairs: infrequent, low-output calls to avoid predation?

Nielsen, M. L. K., Bejder, L., Videsen, S. K. A., Christiansen, F. and Madsen, P. T.
jeb190728

RESEARCH ARTICLES

Energy turnover in mammalian skeletal muscle in contractions mimicking locomotion: effects of stimulus pattern on work, impulse and energetic cost and efficiency

Curtin, N. A., Woledge, R. C., West, T. G., Goodwin, D., Piercy, R. J. and Wilson, A. M.
jeb203877

Shearing overbite and asymmetrical jaw motions facilitate food breakdown in a freshwater stingray, *Potamotrygon motoro*

Laurence-Chasen, J. D., Ramsay, J. B. and Brainerd, E. L.
jeb197681

Straight arm walking, bent arm running: gait-specific elbow angles

Yegian, A. K., Tucker, Y., Gillinov, S. and Lieberman, D. E.
jeb197228

Molecular mechanisms for intestinal HCO₃⁻ secretion and its regulation by guanylin in seawater-acclimated eels

Takei, Y., Wong, M. K. S. and Ando, M.
jeb203539

Characterization of an evolutionarily conserved calcitonin signalling system in a lophotrochozoan, the Pacific oyster (*Crassostrea gigas*)

Schwartz, J., Réalis-Doyelle, E., Dubos, M.-P., Lefranc, B., Leprince, J. and Favrel, P.
jeb201319

Evaluating the physiological significance of hypoxic hyperventilation in larval zebrafish (*Danio rerio*)

Pan, Y. K., Mandic, M., Zimmer, A. M. and Perry, S. F.
jeb204800

Developmental plasticity in metabolism but not in energy reserve accumulation in a seasonally polyphenic butterfly

Kivelä, S. M., Gotthard, K. and Lehmann, P.
jeb202150

Hornets possess long-lasting olfactory memories

Gong, Z., Tan, K. and Nieh, J. C.
jeb200881

The role of lateral optic flow cues in hawkmoth flight control

Stöckl, A., Grittner, R. and Pfeiffer, K.
jeb199406

Salmonid gene expression biomarkers indicative of physiological responses to changes in salinity and temperature, but not dissolved oxygen

Houde, A. L. S., Akbarzadeh, A., Günther, O. P., Li, S., Patterson, D. A., Farrell, A. P., Hinch, S. G. and Miller, K. M.
jeb198036

Upstroke-based acceleration and head stabilization are the norm for the wing-propelled swimming of alcid seabirds

Lapsansky, A. B. and Tobalske, B. W.
jeb201285

Section-specific H⁺ flux in renal tubules of fasted and fed goldfish

Fehsenfeld, S., Kolosov, D., Wood, C. M. and O'Donnell, M. J.
jeb200964

Influence of stretch magnitude on the stretch–shortening cycle in skinned muscle fibres

Fukutani, A. and Herzog, W.

jeb206557

Chemically induced plasticity in early life history of *Palaemon argentinus*: are chemical alarm cues conserved within palaemonid shrimps?

Ituarte, R. B., Vázquez, M. G. and Bas, C. C.

jeb199984

Sarcoplasmic reticulum Ca^{2+} -ATPase (SERCA) activity during the transition to endothermy in an altricial bird

Price, E. R., Sirsat, T. S., Sirsat, S. K. G. and Dzialowski, E. M.

jeb201111

Ocean acidification affects calcareous tube growth in adults and reared offspring of serpulid polychaetes

Díaz-Castañeda, V., Cox, T. E., Gazeau, F., Fitzer, S., Delille, J., Alliouane, S. and Gattuso, J.-P.

jeb196543