



Cover: The cane toad (*Rhinella marina*) has been introduced throughout the Pacific from its native range in South and Central America. In Australia, the toad has become invasive and vastly expanded its range; however, its spread to cooler areas is relatively slow. Seebacher and Franklin (pp. 1437–1444) show that exercise physiology, e.g. oxygen transport by the cardiovascular system, is optimised at higher temperatures. Interestingly, exercise at cooler temperatures requires relatively more energy, which is increasingly supplied by non-sustainable anaerobic processes. Hence, there is a link between exercise physiology and invasive success, which means that cane toads will fare well under global warming.

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Research Articles

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body size to hypoxia in *Drosophila melanogaster*. 1419-1427

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oxygen in turbulence: the energetics of swimming behaviors at
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Seebacher, F. and Franklin, C. E. Physiology of invasion:
cane toads are constrained by thermal effects on physiological
mechanisms that support locomotor performance. 1437-1444

Steele, S. L., Yang, X., Debais-Thibaud, M., Schwerte, T.,
Pelster, B., Ekker, M., Tiberi, M. and Perry, S. F. *In vivo* and
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zebrafish (*Danio rerio*). 1445-1457

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snakes. 1458-1462

► **Martín-Gálvez, D., Pérez-Contreras, T., Soler, M. and**
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Claudin 28b and F-actin are involved in rainbow trout gill
pavement cell tight junction remodeling under osmotic stress.
1473-1487

Nilsen, K.-A., Ihle, K. E., Frederick, K., Fondrk, M. K.,
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peptide genes in honey bee fat body respond differently to
manipulation of social behavioral physiology. 1488-1497

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Weissburg, M. J. Staying the course: chemical signal spatial
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Schilder, R. J., Kimball, S. R., Marden, J. H. and
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splicing is evolutionarily conserved from insects to mammals
and is partially impaired in skeletal muscle of obese rats.
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Vidal-Dupiol, J., Ladrière, O., Meistertzheim, A.-L.,
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