Experimental Biology

Contents Volume 209 (16) 2006



Cover: Sexually dimorphic eyes have evolved numerous times in insects but the genetic changes involved have rarely been explored. The *Lycaena rubidus* male butterfly (background image) has a specialized dorsal eye that contains only ultraviolet- and blue-sensitive visual pigments and reflects a green-orange color (right inset). The female dorsal eye contains, in addition to the ultraviolet-sensitive visual pigment, a long wavelength-sensitive visual pigment co-expressed with the blue in R3-8 photoreceptor cells and reflects blue-yellow (left inset) (see article by M. P. Sison-Mangus, G. D. Bernard, J. Lampel and A. D. Briscoe, pp. 3079-3090). Photographs by M. P. Sison-Mangus and G. D. Bernard.

▼Inside JEB

Keeping Math-Moth Aloft i; Wet Versus Dry Webs i; Butterfly's Blue Genes ii; Male Songbirds Modulate Sickness Behaviour iii

Commentary

Chaui-Berlinck, J. G. A critical understanding of the fractal model of metabolic scaling. 3045-3054

Research Articles

- Dzyuba, B., Van Look, K. J. W., Cliffe, A., Koldewey, H. J. and Holt, W. V. Effect of parental age and associated size on fecundity, growth and survival in the yellow seahorse *Hippocampus kuda*. 3055-3061
- ► Owen-Ashley, N. T. and Wingfield, J. C. Seasonal modulation of sickness behavior in free-living northwestern song sparrows (*Melospiza melodia morphna*). 3062-3070
 - **Attardo, G. M., Hansen, I. A., Shiao, S.-H. and Raikhel, A. S.** Identification of two cationic amino acid transporters required for nutritional signaling during mosquito reproduction. 3071-3078
- ► Sison-Mangus, M. P., Bernard, G. D., Lampel, J. and Briscoe, A. D. Beauty in the eye of the beholder: the two blue opsins of lycaenid butterflies and the opsin gene-driven evolution of sexually dimorphic eyes. 3079-3090
 - **Shiels, H. A., Paajanen, V. and Vornanen, M.** Sarcolemmal ion currents and sarcoplasmic reticulum Ca²⁺ content in ventricular myocytes from the cold stenothermic fish, the burbot (*Lota lota*). 3091-3100
 - **Ahmed, K. H., Pelster, B. and Krumschnabel, G.** Signalling pathways involved in hypertonicity- and acidification-induced activation of Na⁺/K⁺ exchange in trout hepatocytes. 3101-3113
- ► Hedrick, T. L. and Daniel, T. L. Flight control in the hawkmoth *Manduca sexta*: the inverse problem of hovering. 3114-3130
- ▶ Blackledge, T. A. and Hayashi, C. Y. Unraveling the mechanical properties of composite silk threads spun by cribellate orbweaving spiders. 3131-3140
 - Vézina, F., Jalvingh, K. M., Dekinga, A. and Piersma, T. Acclimation to different thermal conditions in a northerly wintering shorebird is driven by body mass-related changes in organ size. 3141-3154

- Robson, S. K. A., Vickers, M., Blows, M. W. and Crozier, R. H. Age determination in individual wild-caught *Drosophila serrata* using pteridine concentration. 3155-3163
- **Britt, E. J., Hicks, J. W. and Bennett, A. F.** The energetic consequences of dietary specialization in populations of the garter snake, *Thamnophis elegans*. 3164-3169
- **Bender, J. A. and Dickinson, M. H.** Visual stimulation of saccades in magnetically tethered *Drosophila*. 3170-3182
- Meleshkevitch, E. A., Assis-Nascimento, P., Popova, L. B., Miller, M. M., Kohn, A. B., Phung, E. N., Mandal, A., Harvey, W. R. and Boudko, D. Y. Molecular characterization of the first aromatic nutrient transporter from the sodium neurotransmitter symporter family. 3183-3198
- Kubota, M., Hasegawa, T., Nakakura, T., Tanii, H., Suzuki, M. and Tanaka, S. Molecular and cellular characterization of a new aquaporin, AQP-x5, specifically expressed in the small granular glands of *Xenopus* skin. 3199-3208
- Higashibata, A., Szewczyk, N. J., Conley, C. A., Imamizo-Sato, M., Higashitani, A. and Ishioka, N. Decreased expression of myogenic transcription factors and myosin heavy chains in *Caenorhabditis elegans* muscles developed during spaceflight. 3209-3218
- Broomell, C. C., Mattoni, M. A., Zok, F. W. and Waite, J. H. Critical role of zinc in hardening of *Nereis* jaws. 3219-3225
- Koch, L. M., Patullo, B. W. and Macmillan, D. L. Exploring with damaged antennae: do crayfish compensate for injuries? 3226-3233
- Dombkowski, R. A., Doellman, M. M., Head, S. K. and Olson, K. R. Hydrogen sulfide mediates hypoxia-induced relaxation of trout urinary bladder smooth muscle. 3234-3240
- Hsu, Y.-W. A., Messinger, D. I., Chung, J. S., Webster, S. G., de la Iglesia, H. O. and Christie, A. E. Members of the crustacean hyperglycemic hormone (CHH) peptide family are differentially distributed both between and within the neuroendocrine organs of *Cancer* crabs: implications for differential release and pleiotropic function. 3241-3256
- **Fiol, D. F., Chan, S. Y. and Kültz, D.** Regulation of osmotic stress transcription factor 1 (Ostf1) in tilapia (*Oreochromis mossambicus*) gill epithelium during salinity stress. 3257-3265

Correspondence

- Pascalis, O., Kelly, D. J. and Caldara, R. What can bees *really* tell us about the face processing system in humans? 3266
- **Dyer, A. G.** Response to 'What can bees *really* tell us about the face processing system in humans?' 3267
- ► Article featured 'Inside JEB'