# Experimental Biology

# Contents Volume 212 (7) 2009



Cover: A honeybee (Apis mellifera) leaves her colony's entrance ready for flight (photo: Bente Smedal, Amdam laboratory). Honeybees usually divide labor by first performing within-nest tasks and later forage. R. Scheiner and G. V. Amdam (pp. 994–1002) used age-matched nest bees and foragers to disentangle effects of behavior and age on senescence of sensory sensitivity, associative tactile learning performance ('learning by touch'), discrimination and retention. Independent of behavior and age, sucrose sensing, discrimination and retention abilities stayed intact while learning declined in foragers after 2 weeks. Thus, honeybees provide the opportunity to study roles of behavior in aging.

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### **Research Articles**

- ► Collett, M. and Collett, T. S. The learning and maintenance of local vectors in desert ant navigation. 895-900
  - **Collett, M. and Collett, T. S.** Local and global navigational coordinate systems in desert ants. 901-905
  - **Taylor**, E. W., Leite, C. A. C., Florindo, L. H., Beläo, T. and Rantin, F. T. The basis of vagal efferent control of heart rate in a neotropical fish, the pacu, *Piaractus mesopotamicus*. 906-913
  - **Roberts, A., Feetham, B., Pajak, M. and Teare, T.** Responses of hatchling *Xenopus* tadpoles to water currents: first function of lateral line receptors without cupulae. 914-921
  - **Khan, A. M. and Spencer, G. E.** Novel neural correlates of operant conditioning in normal and differentially reared *Lymnaea*. 922-933
  - Mendonça, P. C. and Gamperl, A. K. Nervous and humoral control of cardiac performance in the winter flounder (*Pleuronectes americanus*). 934-944
- ▶ Riskin, D. K., Bahlman, J. W., Hubel, T. Y., Ratcliffe, J. M., Kunz, T. H. and Swartz, S. M. Bats go head-under-heels: the biomechanics of landing on a ceiling. 945-953
  - **Misfeldt, M., Fago, A. and Gesser, H.** Nitric oxide increases myocardial efficiency in the hypoxia-tolerant turtle *Trachemys scripta*. 954-960
  - **Mach, K. J.** Mechanical and biological consequences of repetitive loading: crack initiation and fatigue failure in the red macroalga *Mazzaella*. 961-976
  - McGillivray, D. G., Garland, T., Jr, Dlugosz, E. M., Chappell, M. A. and Syme, D. A. Changes in efficiency and myosin expression in the small-muscle phenotype of mice selectively bred for high voluntary running activity. 977-985

- Venditti, P., Chiellini, G., Bari, A., Di Stefano, L., Zucchi, R., Columbano, A., Scanlan, T. S. and Di Meo, S.  $T_3$  and the thyroid hormone  $\beta$ -receptor agonist GC-1 differentially affect metabolic capacity and oxidative damage in rat tissues. 986-993
- ► Scheiner, R. and Amdam, G. V. Impaired tactile learning is related to social role in honeybees. 994-1002
  - **Inokuchi, M., Hiroi, J., Watanabe, S., Hwang, P.-P. and Kaneko, T.** Morphological and functional classification of ionabsorbing mitochondria-rich cells in the gills of Mozambique tilapia. 1003-1010
- ➤ Surlykke, A., Ghose, K. and Moss, C. F. Acoustic scanning of natural scenes by echolocation in the big brown bat, *Eptesicus fuscus*. 1011-1020
  - **Simon, M. A. and Trimmer, B. A.** Movement encoding by a stretch receptor in the soft-bodied caterpillar, *Manduca sexta*. 1021-1031
  - **Heimken, C., Aumeier, P. and Kirchner, W. H.** Mechanisms of food provisioning of honeybee larvae by worker bees. 1032-1035
- Schilling, N., Fischbein, T., Yang, E. P. and Carrier, D. R. Function of the extrinsic hindlimb muscles in trotting dogs. 1036-1052
- **Schilling, N. and Carrier, D. R.** Function of the epaxial muscles during trotting. 1053-1063

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