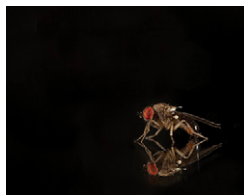


Contents

Vol. 199 No. 3 March 2015



Cover photo: Adult male *Drosophila affinis* on glass. Unckless *et al.* (pp. 831–840). Image courtesy of David Duneau.

- EDITORIAL**
- 637–638 **A Glaring Paradox**
Johnston, Mark
- PERSPECTIVES**
- 639–653 **Fruit Flies in Biomedical Research**
Wangler, Michael F., Shinya Yamamoto, and Hugo J. Bellen
HIGHLIGHTED ARTICLE
- GENETIC TOOLBOX REVIEW**
- 655–669 **Genetic and Genomic Toolbox of *Zea mays***
Nannas, Natalie J. and R. Kelly Dawe
OPEN ACCESS
- COMMUNICATIONS**
- 671–674 **A Surprising Role for the Sch9 Protein Kinase in Chromosome Segregation in *Candida albicans***
Varshney, Neha, Alida Schaeckel, Rima Singha, Tanmoy Chakraborty, Lasse van Wijlick, Joachim F. Ernst, and Kaustuv Sanyal
- INVESTIGATIONS**
- METHODS, TECHNOLOGY, AND RESOURCES**
- 675–681 **Quality Control of Genotypes Using Heritability Estimates of Gene Content at the Marker**
Forneris, Natalia S., Andres Legarra, Zulma G. Vitezica, Shogo Tsuruta, Ignacio Aguilar, Ignacy Misztal, and Rodolfo J. C. Cantet
- 683–694 **An Enhanced Gene Targeting Toolkit for *Drosophila*: Golic+**
Chen, Hui-Min, Yaling Huang, Barret D. Pfeiffer, Xiaohao Yao, and Tzumin Lee
HIGHLIGHTED ARTICLE
- 695–710 **Assessing Gene-Environment Interactions for Common and Rare Variants with Binary Traits Using Gene-Trait Similarity Regression**
Zhao, Guolin, Rachel Marceau, Daowen Zhang, and Jung-Ying Tzeng
HIGHLIGHTED ARTICLE
- GENOME INTEGRITY AND TRANSMISSION**
- 711–727 **The DNA Damage Response and Checkpoint Adaptation in *Saccharomyces cerevisiae*: Distinct Roles for the Replication Protein A2 (Rfa2) N-Terminus**
Ghospurkar, Padmaja L., Timothy M. Wilson, Amber L. Severson, Sarah J. Klein, Sakina K. Khaku, André P. Walther, and Stuart J. Haring
OPEN ACCESS

GENE EXPRESSION

- 729–737** **Unusual Regulation of Splicing of the Cholinergic Locus in *Caenorhabditis elegans***
Mathews, Eleanor A., Gregory P. Mullen, Jacob R. Manjarrez, and James B. Rand
HIGHLIGHTED ARTICLE

CELLULAR GENETICS

- 739–748** **A HIF-Independent Mediator of Transcriptional Responses to Oxygen Deprivation in *Caenorhabditis elegans***
Padmanabha, Divya, Pamela A. Padilla, Young-Jai You, and Keith D. Baker

DEVELOPMENTAL AND BEHAVIORAL GENETICS

- 749–759** **The ABCs of Eye Color in *Tribolium castaneum*: Orthologs of the *Drosophila* *white*, *scarlet*, and *brown* Genes**
Grubbs, Nathaniel, Sue Haas, Richard W. Beeman, and Marcé D. Lorenzen
HIGHLIGHTED ARTICLE

- 761–775** **Conversion of the LIN-1 ETS Protein of *Caenorhabditis elegans* from a SUMOylated Transcriptional Repressor to a Phosphorylated Transcriptional Activator**
Leight, Elizabeth R., John T. Murphy, Douglas A. Fantz, Danielle Pepin, Daniel L. Schneider, Thomas M. Ratliff, Duaa H. Mohammad, Michael A. Herman, and Kerry Kornfeld

- 777–791** **Muscle Cell Fate Choice Requires the T-Box Transcription Factor Midline in *Drosophila***
Kumar, Ram P., Krista C. Dobi, Mary K. Baylies, and Susan M. Abmayr

POPULATION AND EVOLUTIONARY GENETICS

- 793–807** **Molecular Proxies for Climate Maladaptation in a Long-Lived Tree (*Pinus pinaster* Aiton, Pinaceae)**
Jaramillo-Correa, Juan-Pablo, Isabel Rodríguez-Quilón, Delphine Grivet, Camille Lepoittevin, Federico Sebastiani, Myriam Heuertz, Pauline H. Garnier-Géré, Ricardo Alía, Christophe Plomion, Giovanni G. Vendramin, and Santiago C. González-Martínez
HIGHLIGHTED ARTICLE

- 809–816** **Recent and Massive Expansion of the Mating-Type-Specific Region in the Smut Fungus *Microbotryum***
Whittle, Carrie A., Antonina Votintseva, Kate Ridout, and Dmitry A. Filatov

- 817–829** **The Evolution of Selfing Is Accompanied by Reduced Efficacy of Selection and Purging of Deleterious Mutations**
Arunkumar, Ramesh, Rob W. Ness, Stephen I. Wright, and Spencer C. H. Barrett

- 831–840** **Sex-Ratio Meiotic Drive and Y-Linked Resistance in *Drosophila affinis***
Unckless, Robert L., Amanda M. Larracuenté, and Andrew G. Clark

- 841–856** **Can the Site-Frequency Spectrum Distinguish Exponential Population Growth from Multiple-Merger Coalescents?**
Eldon, Bjarki, Matthias Birkner, Jochen Blath, and Fabian Freund

GENETICS OF COMPLEX TRAITS

857–871 **Locally Epistatic Genomic Relationship Matrices for Genomic Association and Prediction**

Akdemir, Deniz and Jean-Luc Jannink

HIGHLIGHTED ARTICLE **OPEN ACCESS**

873–883 **The Mammalian Cervical Vertebrae Blueprint Depends on the *T (brachyury)* Gene**

Kromik, Andreas, Reiner Ulrich, Marian Kusenda, Andrea Tipold, Veronika M. Stein, Maren Hellige, Peter Dziallas, Frieder Hadlich, Philipp Widmann, Tom Goldammer, Wolfgang Baumgärtner, Jürgen Rehage, Dierck Segelke, Rosemarie Weikard, and Christa Kühn

HIGHLIGHTED ARTICLE

CORRIGENDUM

885 **Population Genetics Inference for Longitudinally-Sampled Mutants Under Strong Selection**

Lacerda, M. and C. Seoighe