

Contents

Vol. 210 No. 2 October 2018



Suberites domuncula, a bright orange demosponge, colonizes gastropod shells that are in turn occupied by hermit crabs. The picture features two interacting hermit crabs and their sponge symbionts in a sea water aquarium. See the research paper on the establishment of transgenesis in the demosponge *Suberites domuncula* by Revilla-i-Domingo *et al.*, pp. 435–443. Image courtesy of Roger Revilla-i-Domingo.

THE 2018 GSA HONORS AND AWARDS

- 345–346 **Philip Hieter: 2018 George W. Beadle Award**
Haloupek, Nicole

PERSPECTIVES

- 347–355 **How Mendel’s Interest in Inheritance Grew out of Plant Improvement**
van Dijk, Peter J., Franz J. Weissing, and T. H. Noel Ellis
OPEN ACCESS

FLYBOOK

- 357–396 **Anatomy and Physiology of the Digestive Tract of *Drosophila melanogaster***
Miguel-Aliaga, Irene, Heinrich Jasper, and Bruno Lemaitre
OPEN ACCESS

WORMBOOK

- 397–433 **From “the Worm” to “the Worms” and Back Again: The Evolutionary Developmental Biology of Nematodes**
Haag, Eric S., David H. A. Fitch, and Marie Delattre
HIGHLIGHTED ARTICLE OPEN ACCESS

INVESTIGATIONS

METHODS, TECHNOLOGY, AND RESOURCES

- 435–443 **Establishment of Transgenesis in the Demosponge *Suberites domuncula***
Revilla-i-Domingo, Roger, Clara Schmidt, Clara Zifko, and Florian Raible
OPEN ACCESS

- 445–461 **OrthoList 2: A New Comparative Genomic Analysis of Human and *Caenorhabditis elegans* Genes**
Kim, Woojin, Ryan S. Underwood, Iva Greenwald, and Daniel D. Shaye

STATISTICAL GENETICS AND GENOMICS

- 463–476 **Detecting Rare Mutations with Heterogeneous Effects Using a Family-Based Genetic Random Field Method**
Li, Ming, Zihuai He, Xiaoran Tong, John S. Witte, and Qing Lu

- 477–497 **Accurate Genomic Prediction of Human Height**
Lello, Louis, Steven G. Avery, Laurent Tellier, Ana I. Vazquez, Gustavo de los Campos, and Stephen D. H. Hsu
HIGHLIGHTED ARTICLE

- 499–515 **A Large Multiethnic Genome-Wide Association Study of Adult Body Mass Index Identifies Novel Loci**
Hoffmann, Thomas J., Hélène Choquet, Jie Yin, Yambazi Banda, Mark N. Kvale, Maria Glymour, Catherine Schaefer, Neil Risch, and Eric Jorgenson

GENOME INTEGRITY AND TRANSMISSION

- 517–529 **Extraordinary Genome Instability and Widespread Chromosome Rearrangements During Vegetative Growth**
Möller, Mareike, Michael Habig, Michael Freitag, and Eva H. Stukenbrock
HIGHLIGHTED ARTICLE OPEN ACCESS

- 531–546 **Comparing and Contrasting the Effects of *Drosophila* Condensin II Subunit dCAP-D3 Overexpression and Depletion *in Vivo***
Deutschman, Emily, Jacqueline R. Ward, Kimberly T. Ho-A-Lim, Tyler J. Alban, Dongmei Zhang, Belinda Willard, Madeleine E. Lemieux, Justin D. Lathia, and Michelle S. Longworth
OPEN ACCESS

- 547–558 **Spatial Vulnerabilities of the *Escherichia coli* Genome to Spontaneous Mutations Revealed with Improved Duplex Sequencing**
Zhang, Xiaolong, Xuehong Zhang, Xia Zhang, Yuwei Liao, Luyao Song, Qingzheng Zhang, Peiying Li, Jichao Tian, Yanyan Shao, Aisha Mohammed Al-Dherasi, Yulong Li, Ruimei Liu, Tao Chen, Xiaodi Deng, Yu Zhang, Dekang Lv, Jie Zhao, Jun Chen, and Zhiguang Li

- 559–572 **Loss of Cohesin Subunit Rec8 Switches Rad51 Mediator Dependence in Resistance to Formaldehyde Toxicity in *Ustilago maydis***
Sutherland, Jeanette H. and William K. Holloman

GENE EXPRESSION

- 573–585 **The BEN Domain Protein Insensitive Binds to the *Fab-7* Chromatin Boundary To Establish Proper Segmental Identity in *Drosophila***
Fedotova, Anna, Tsutomu Aoki, Mikaël Rossier, Rakesh Kumar Mishra, Chaevia Clendinen, Olga Kyrchanova, Daniel Wolle, Artem Bonchuk, Robert K. Maeda, Annick Muterio, Fabienne Cleard, Vladic Mogila, François Karch, Pavel Georgiev, and Paul Schedl

- 587–605 **Spatiotemporal Gene Expression Analysis of the *Caenorhabditis elegans* Germline Uncovers a Syncytial Expression Switch**
Tzur, Yonatan B., Eitan Winter, Jinmin Gao, Tamar Hashimshony, Itai Yanai, and Monica P. Colaiácovo

- 607–619 **Sucrose Signaling Regulates Anthocyanin Biosynthesis Through a MAPK Cascade in *Arabidopsis thaliana***
Meng, Lai-Sheng, Meng-Ke Xu, Wen Wan, Fei Yu, Cong Li, Jing-Yi Wang, Zhi-Qin Wei, Meng-Jiao Lv, Xiao-Ying Cao, Zong-Yun Li, and Ji-Hong Jiang

- 621–635 **Bimodal Expression of the *Salmonella Typhimurium spv* Operon**
Passaris, Ioannis, Alexander Cambré, Sander K. Govers, and Abram Aertsen
HIGHLIGHTED ARTICLE

DEVELOPMENTAL AND BEHAVIORAL GENETICS

- 637–652 **Tubular Excretory Canal Structure Depends on Intermediate Filaments EXC-2 and IFA-4 in *Caenorhabditis elegans***
Al-Hashimi, Hikmat, David H. Hall, Brian D. Ackley, Erik A. Lundquist, and Matthew Buechner

- 653–663 **Blimp-1 Mediates Tracheal Lumen Maturation in *Drosophila melanogaster***
Öztürk-Çolak, Arzu, Camille Stephan-Otto Attolini, Jordi Casanova,
and Sofia J. Araújo

POPULATION AND EVOLUTIONARY GENETICS

- 665–682 **Geometry of the Sample Frequency Spectrum and the Perils of
Demographic Inference**

Rosen, Zvi, Anand Bhaskar, Sebastien Roch, and Yun S. Song

HIGHLIGHTED ARTICLE

- 683–701 **Coalescence and Linkage Disequilibrium in Facultatively Sexual Diploids**

Hartfield, Matthew, Stephen I. Wright, and Aneil F. Agrawal

- 703–718 **Support for the Dominance Theory in *Drosophila* Transcriptomes**

Llopart, Ana, Evgeny Brud, Nikale Pettie, and Josep M. Comeron

OPEN ACCESS

- 719–732 **Inferring Population Structure and Admixture Proportions in Low-Depth
NGS Data**

Meisner, Jonas and Anders Albrechtsen

HIGHLIGHTED ARTICLE

GENETICS OF COMPLEX TRAITS

- 733–744 **Uncovering Natural Longevity Alleles from Intercrossed Pools of Aging
Fission Yeast Cells**

Ellis, David A., Ville Mustonen, María Rodríguez-López, Charalampos Rallis,
Michał Malecki, Daniel C. Jeffares, and Jürg Bähler

HIGHLIGHTED ARTICLE OPEN ACCESS