

CONTENTS

Contributors

vii

1. Neurogenetics of Female Reproductive Behaviors in <i>Drosophila melanogaster</i>	1
Meghan Laturney and Jean-Christophe Billeter	
1. Introduction	2
2. Habitat Selection	4
3. First Love	10
4. The Postmating Response	38
5. Female Postcopulatory Mate Choice: Cryptic vs Noncryptic	64
6. Egg-Laying and Oviposition Site Selection	79
7. Conclusion	84
Acknowledgments	86
References	86
2. Association Mapping in Crop Plants: Opportunities and Challenges	109
Pushpendra K. Gupta, Pawan L. Kulwal and Vandana Jaiswal	
1. Introduction	110
2. Populations Used for AM Studies (Mapping Populations, Germplasm and Breeding Populations)	112
3. Molecular Markers and Genotyping for QTL/AM Studies (Including Next Generation Sequencing)	115
4. Approaches Used for AM Studies (GWAS and CG Approach)	116
5. Major Concerns and Issues in Using AM	118
6. Emerging Research Areas for Association Mapping	131
7. Software for Association Analysis	134
8. Future Perspectives	137
Acknowledgments	139
References	139
3. The miRNA-Mediated Cross-Talk between Transcripts Provides a Novel Layer of Posttranscriptional Regulation	149
Jennifer Y. Tan and Ana C. Marques	
1. Introduction	150
2. Biogenesis and Mechanisms of miRNA-Mediated Regulation of Gene Expression	153

3. miRNA-Mediated Cross-talk between Transcripts	163
4. Emerging Roles of Competitive Endogenous RNAs	170
5. Inference of miRNA-Mediated Genetic Interactions	180
6. Perspectives	181
Acknowledgments	184
References	184
4. Essential Letters in the Fungal Alphabet: ABC and MFS Transporters and Their Roles in Survival and Pathogenicity	201
Michael H. Perlin, Jared Andrews and Su San Toh	
1. Introduction	202
2. ABC Transporter Superfamily	208
3. MFS Superfamily	222
4. Amino Acid Transporters	244
5. Conclusions	244
Acknowledgments	245
References	246
5. Unisexual Reproduction	255
Kevin C. Roach, Marianna Feretzaki, Sheng Sun and Joseph Heitman	
1. Homothallism in Ascomycetes and Basidiomycetes	257
2. Unisexual Reproduction in Pathogenic Fungi	260
3. Cryptic Unisexual Species	277
4. Evolutionary Origin of Unisex	278
5. Unisex Increases the Opportunities for Meiosis	280
6. Unisex Alters the Life Cycle of Fungi	286
7. Medical Impacts of Unisex	288
Acknowledgments	289
References	290
<i>Index</i>	307