

CONTENTS

VOLUME 1

Preface		xv
Chapter 1	Speciation in Diatoms: Patterns, Mechanisms, and Environmental Change <i>Joshua T. Cooper and John P. Masly</i>	1
Chapter 2	Sympatric Speciation of Island Plants: The Natural Laboratory of Lord Howe Island <i>Alexander S. T. Papadopoulos, William J. Baker and Vincent Savolainen</i>	37
Chapter 3	Speciation of Arabian Gazelles <i>Hannes Lerp, Torsten Wronski, Thomas M. Butynski and Martin Plath</i>	59
Chapter 4	Chromosome Plasticity, Adaptation and Speciation in Malaria Mosquitoes <i>Igor V. Sharakhov</i>	83
Chapter 5	Transcriptional Differentiation Across the Four Subspecies of <i>Drosophila mojavensis</i> <i>Luciano M. Matzkin and Therese A. Markow</i>	119
Chapter 6	Evolution of Male Courtship Songs in the <i>Drosophila buzzatii</i> Species Cluster <i>Cássia C. Oliveira, Maura H. Manfrin, Fábio de M. Sene and William J. Etges</i>	135
Chapter 7	Prezygotic Isolation in the Parasitoid Wasp Genus <i>Nasonia</i> <i>Maartje C. W. G. Giesbers, Sylvia Gerritsma, Jan Buellesbach, Wenwen Diao, Bart A. Pannebakker, Louis van de Zande, Thomas Schmitt and Leo W. Beukeboom</i>	161
Chapter 8	Where to Look for Speciation Genes When Divergence Is Driven by Postmating, Prezygotic Isolation <i>Jeremy L. Marshall</i>	189

Chapter 9	The Molecular and Evolutionary Basis of Hybrid Sterility: From <i>Odysseus</i> to <i>Overdrive</i> <i>Nitin Phadnis and Harmit S. Malik</i>	203
Chapter 10	The Role of Transposable Elements in Speciation <i>Eric T. Watson and Jeffery P. Demuth</i>	223
Chapter 11	Hybrid Incompatibility: Are Cellular Processes the Battlefields of Genomic Conflict? <i>Norman A. Johnson</i>	247
Chapter 12	Processes in Organic and Cultural Evolution <i>Börje Ekstig</i>	257
Chapter 13	Natural Selection and Diabetes Mellitus <i>Svetlana Shtandel</i>	301
Chapter 14	Genetic Drift among Native People from South American Gran Chaco Region Affects Interleukin 1 Receptor Antagonist Variation <i>Cecilia Inés Catanesi and Laura Angela Glesmann</i>	331
VOLUME 2		
Chapter 15	Alternative Splicing and Neurological Disorders: Focus on Parkinson's Disease <i>Velia D'Agata, Valentina La Cognata and Sebastiano Cavallaro</i>	345
Chapter 16	Tau Alternative Splicing in Alzheimer's Disease <i>Gonzalo Emiliano Aranda-Abreu, María Elena Hernández Aguilar, Fausto Rojas Durán, Sonia Lilia Mestizo Gutiérrez and Jorge Manzo Denes</i>	373
Chapter 17	The Role of Splicing Factors in Cancer Prognosis and Treatment <i>Rebeca Martínez-Contreras and Nancy Martínez-Montiel</i>	383
Chapter 18	Nonsense-Mediated Decay and Human Disease <i>Nancy Martínez-Montiel and Rebeca Martínez-Contreras</i>	407
Chapter 19	Alternative Splicing Alterations in Alzheimer's Disease <i>T. A. Ishunina and D. F. Swaab</i>	427
Chapter 20	Plant RNA-Binding Proteins Implicate mRNA Processing in Abscissic Acid (ABA) Responses <i>Raquel F. Carvalho, Vera S. Nunes and Paula Duque</i>	453
Chapter 21	Comprehensive Analyses of Alternative Exons in Neuronally Differentiated P19 cells <i>Hitoshi Suzuki and Toshifumi Tsukahara</i>	475
Chapter 22	Identification of Genuine Alternative Splicing Variants for Rare or Long-Sized Transcripts <i>Seishi Kato</i>	495

Chapter 23	An Epigenetic View on Alternative Splicing <i>Gabriele A. Fontana, Aurora Rigamonti and Silvia M. L. Barabino</i>	515
Chapter 24	Alternative RNA Splicing and Regulation of Nitric Oxide Signaling <i>Iraida G. Sharina</i>	533
Chapter 25	Alternative Splicing by Analyzing a Human mRNA Diversity Using Data of FLJ Human cDNAs <i>Takao Isogai and Ai Wakamatsu</i>	551
Chapter 26	Alternative Splicing in Human Immune System and Autoimmune Diseases <i>Xiang Guo</i>	569
Chapter 27	Poly(ADP-Ribosyl)ation Regulates Alternative Splicing <i>Yingbiao Ji and Alexei V. Tulin</i>	583
Chapter 28	Patent Roadmap for the Biosensor Space <i>Mohamed C. Azeez, Unisha Patel and Dennis Fernandez</i>	595
Chapter 29	Avoidant/Restrictive Food Intake Disorder in a Female Patient Affected by Marfan Syndrome <i>A. P. Verri, A. Serio, M. Grasso, I. Brega and F. Clerici</i>	649
Chapter 30	Optimizing Oil Production in <i>B. napus</i> by Gene Stacking: Transgenic Co-Expression of <i>DGAT1</i> and Partially-Suppressed <i>mtPDCK</i> Cumulatively Enhance Seed Lipid Deposition <i>Elizabeth-France Marillia, Tammy Francis and David C. Taylor</i>	657
Chapter 31	Periodontitis: A Common Oral Disease the Genetic Susceptibility <i>Ying Zheng, You-Qiang Song and W. Keung Leung</i>	689
Chapter 32	Genomic Imprinting and the Brain: Neuron-Specific Switching of Gene Expression at Imprinting Regions <i>Masamitsu Eitoku and Hidenori Kiyosawa</i>	715
Chapter 33	Pharmacogenomics Focusing on Phase Two Metabolizing Enzymes <i>Kung-Hao Liang</i>	739

VOLUME 3

Chapter 34	Sexual Dimorphism in Insect Longevity: Insights from Experimental Evolution <i>Jelica Lazarević, Biljana Stojković and Nikola Tucić</i>	747
Chapter 35	Evidence of Natural and Sexual Selection Shaping the Size of Nuptial Gifts among a Single Bush-cricket Genus (<i>Poecilimon</i> ; Tettigoniidae): An Analysis of Sperm Transfer Patterns <i>J. McCartney, M. A. Potter, A. W. Robertson, K-G. Heller and D. T. Gwynne</i>	777

Chapter 36	Mate Choice Copying in Both Sexes of the Guppy: The Role of Sperm Competition Risk and Sexual Harassment <i>Claudia Zimmer, Alexandros S. Gavalas, Benjamin Kunkel, Janina Hanisch, Sara Martin, Svenja Bischoff, Martin Plath and David Bierbach</i>	795
Chapter 37	Sexual Selection under Parental Choice: Mating Strategies and Reproductive Success <i>Menelaos Apostolou and Marianna Zacharia</i>	813
Chapter 38	Melon Germplasm Characteristics, Diversity, Preservation and Uses <i>C. Mallor and A. Díaz</i>	825
Chapter 39	Preservation and Characterization of Woodland Grape (<i>Vitis vinifera</i> ssp. <i>sylvestris</i> GMEL.) Genotypes of the Szigetköz, Hungary <i>Gizella Jahnke, Zóra Annamária Nagy, Gábor Koltai, Edit Hajdu and János Májer</i>	845
Chapter 40	A Mini Review on Morphological and Genetic Diversity of Sweet (<i>Prunus Avium</i> L.) and Sour Cherry (<i>Prunus Cerasus</i> L.) Cultivars <i>Ioannis Ganopoulos, Panagiotis Madesis, Filippos A. Aravanopoulos, Athanasios Tsiftaris, Thomas Sotiropoulos and Konstantinos Kazantzis</i>	859
Chapter 41	Research on Purple Seed Stain of Soybean: Germplasm Screening and Genetic Resistance <i>Shuxian Li, Pengyin Chen, Bo Zhang and Grover Shannon</i>	871
Chapter 42	Somatic and Gonadal Tissue Cryopreservation: An Alternative Tool for the Germplasm Conservation in Wild Mammals <i>Alexsandra Fernandes Pereira, Alexandre Rodrigues Silva, Gabriela Liberalino Lima and Andréia Maria da Silva</i>	881
Chapter 43	Mitochondrial Gene Diversity of the Mega-Herbivorous Species of the Genus <i>Tapirus</i> (Tapiridae, Perissodactyla) in South America and Some Insights on Their Genetic Conservation, Systematics and the Pleistocene Influence on Their Genetic Characteristics <i>Manuel Ruiz-García, Armando Castellanos, Luz Agueda Bernal, Diego Navas, Myreya Pinedo-Castro and Joseph Mark Shostell</i>	909
Chapter 44	Strategies for Gene Prospecting of Plants in Response to Drought and Salinity <i>Deyvid Novaes Marques, Nicolle Louise Ferreira Barros, Diego Tuloza da Silva, Fabiano Melo de Brito and Claudia Regina Batista de Souza</i>	959

Chapter 45	Clinical Evidence and the Genetic Effects of Traditional Chinese Medicine for the Management of Proteinuria in Patients with Diabetic Nephropathy <i>Xiang Tu, XueFeng Ye, Quan Hu, ChunGuang Xie, ChengShi He, Ming Chen, James B. Jordan and Sen Zhong</i>	993
Chapter 46	Biochemistry and Genetics of Ansamycin Antibiotics <i>Amit Kumar Jha and Jae Kyung Sohng</i>	1017
Chapter 47	BRCA Gene Mutations Mediate Particularly High TNBC Risk by Defective Estrogen Signaling <i>Zsuzsanna Suba</i>	1045
Chapter 48	Genotype-Phenotype Relationships in Language Processes in Rett Syndrome <i>Alessandra Falzone, Antonio Gangemi and Rosa Angela Fabio</i>	1061
Chapter 49	Marfan Syndrome: A Rare and Sometime Very Disabling Genetic Disorder <i>Henry J. Mankin and Keith P. Mankin</i>	1079
Chapter 50	Marfan Syndrome and Periodontitis <i>Jun-ichi Suzuki and Yasunobu Hirata</i>	1093
Chapter 51	Combined Pectus Correction and Aortic Valve Sparing Root Replacement in Marfan Patients <i>Jean-Philippe Verhoye and Jacques Tomasi</i>	1099
Chapter 52	Severe Periodontitis in Marfan Syndrome <i>Naoto Suda</i>	1107
Chapter 53	Preimplantation Genetic Diagnosis for Marfan Syndrome <i>Anver Kuliev and Svetlana Rechitsky</i>	1113

VOLUME 4

Chapter 54	Anuran Cytogenetics: An Overview <i>Cintia Pelegrineti Targueta, Stenio Eder Vittorazzi, Kaleb Pretto Gatto, Daniel Pacheco Bruschi, Ana Cristina P. Veiga-Menoncello, Shirlei M. Recco-Pimentel and Luciana Bolsoni Lourenço</i>	1117
Chapter 55	Human Cytogenetic Biomonitoring <i>Armanda Teixeira-Gomes, Solange Costa and João Paulo Teixeira</i>	1157
Chapter 56	Complex Karyotypes and Their Detection in Hematologic Malignancies: The Ongoing Role for Classical Cytogenetics <i>Helena Urbankova</i>	1177

Chapter 57	Natural Hybridization between Chromosomal Discrepant Species and the Role of Hybrid Speciation in the Genus <i>Astyanax</i> <i>Francisco de Menezes Cavalcante Sassi, Snaydia Viegas Resende, Rubens Pazza and Karine Frehner Kavalco</i>	1193
Chapter 58	Trichorhinophalangeal Syndrome (TRPS) Revisited <i>N. Selenti, M. Tzetis, E. Tsoutsou and H. Fryssira</i>	1203
Chapter 59	Epigenetic Modifications and Developmental Origin of Health and Diseases (DOHaD) <i>Jia Zheng and Xinhua Xiao</i>	1211
Chapter 60	Effects of Oxidative Stress on Epigenetic Mechanisms <i>Yildiz Dincer and Onur Baykara</i>	1225
Chapter 61	Epigenetic Modifications and Their Potential Role in Tumorigenesis <i>Muthu K. Shanmugam, Frank Arfuso and Gautam Sethi</i>	1241
Chapter 62	Alzheimer's Disease: An Insight from Epigenetic Perspective <i>Yildiz Dincer and Zeynep Sezgin</i>	1291
Chapter 63	Epigenetic Mechanisms in Cardiovascular Diseases <i>Mehmet Güven and Bahadır Batar</i>	1323
Chapter 64	Insights from Epigenomics Analysis of Sperm: Sperm Development and Male Infertility <i>Dheepa Balasubramanian, Eisa Tahmasbpour and Ashok Agarwal</i>	1361
Chapter 65	Epigenetics, Inflammation and Inflammatory Related-Diseases: A General Look <i>Müge Sayitoğlu and Yücel Erbilgin</i>	1383
Chapter 66	A New Molecular Approach to Obesity: Epigenetic Perspective <i>Burcu Bayoglu and Mujgan Cengiz</i>	1419

VOLUME 5

Chapter 67	Genetics and Evolution of Entomopathogenic Fungi <i>A. García, M. Michel, S. Villarreal, F. Castillo, E. Osorio, M. T. García-Ruiz, F. Veana, A. C. Flores and R. Rodríguez</i>	1447
Chapter 68	Mitochondrial Population Genetics Inferences about the Phylogeography and Systematics of the Tayra (<i>Eira barbara</i> , Mustelidae, Carnivora) <i>Manuel Ruiz-García, Nicolás Lichilín-Ortiz, Yolanda Mejía, Juan Manuel Ortega and Joseph Mark Shostell</i>	1491
Chapter 69	The Precision Medicine and Precision Public Health Approaches to Cancer Treatment and Prevention: A Cross-Comparison <i>Stephen M. Modell, Sharon L. R. Kardia and Toby Citrin</i>	1525

Chapter 70	Neuropsychological Profile of People with Williams Syndrome (WS) <i>Anne-Sophie Pezzino, Nathalie Marec-Breton and Agnès Lacroix</i>	1547
Chapter 71	Preimplantation Genetic Diagnosis (PGD) for Chromosome Rearrangements <i>Chun Kyu Lim</i>	1569
Chapter 72	A Family-Based Association Study between the BDNF Gene and Attention Deficit Hyperactivity Disorder in Mexican Children and Adolescents <i>Alan López-López, Miriam Margot Rivera-Angles, Carlos Alfonso Tovilla-Zárate, Roberto Molina-Solís, Araceli Valencia-Hernández, Luis Gómez-Valencia, Thelma Beatriz González-Castro, Isela E Juárez-Rojop, María Lilia López-Narváez, Ana Fresan and Yazmin Hernández-Díaz</i>	1589
Chapter 73	Petroleum Microbiology and Genetics <i>Joana Montezano Marques, Carla Thais Moreira Paixão, Gabriel Villar Monte Palma Pantoja, Artur Luiz da Costa da Silva and Diego Assis das Graça</i>	1601
Chapter 74	Estrogen Activated ERs are the Chief Genetic Safeguards of Somatic and Reproductive Health in Mammals <i>Zsuzsanna Suba</i>	1633
Chapter 75	Motor Abilities are Related to Specific Genotypes in Rett Syndrome <i>R. A. Fabio, T. Capri, M. Lotan, G. E. Towey and G. Marting</i>	1649
Chapter 76	A Longitudinal Study on the Development of a Boy with Fragile X Syndrome: Developmental Trends and Adaptive Changes in a Single Case Report <i>María Auxiliadora Robles-Bello, Nieves Valencia-Naranjo and David Sánchez-Teruel</i>	1669
Chapter 77	Cornelia De Lange Syndrome: A Review <i>Elizabeth A. M. Frost</i>	1683
Chapter 78	Cognitive-Behavioral Phenotype in Klinefelter Syndrome (KS) and Other Sex Chromosomal Aneuploidies (SCAs): Clinical Variability <i>A. P. Verri, C. D'Angelo, A. Cremante, F. Clerici, A. Mauri and C. Castelletti</i>	1697
Chapter 79	Transcranial Direct Current Stimulation (tDCS) and Cognitive Empowerment for the Functional Recovery of Diseases with Chronic Impairment and Genetic Etiopathogenesis <i>Antonio Gangemi, Tindara Capri, Rosa Angela Fabio, Paola Puggioni, Alessandra Maria Falzone and Gabriella Martino</i>	1715

VOLUME 6

Chapter 80	Control of Force and Timing during <u>Unimanual</u> and Bimanual Tapping Movements of Adolescents with Down Syndrome <i>Nobuyuki Inui and Junya Masumoto</i>	1727
Chapter 81	Management of Executive Function Following Assisted Cycling Therapy in Adolescents with Down Syndrome <i>Shannon D. R. Ringenbach, Simon D. Holzapfel, Madeline Richter and Jay L. Alberts</i>	1741
Chapter 82	Endocrine Features and Management of Endocrine Problems in Down Syndrome <i>Stefano Stagi, Elena Sandini, Elisabetta Lapi, Perla Scalini and Maurizio de Martino</i>	1757
Chapter 83	Autosomal Dominant Polycystic Kidney Disease: Pathophysiology and Treatment <i>Ashraf M. Mohieldin, Viralkumar S. Upadhyay, Albert C. M. Ong and Surya M. Nauli</i>	1783
Chapter 84	Hereditary Haemorrhagic Telangiectasia or Rendu-Osler-Weber Syndrome <i>Roberto Zarrabeitia, Cristina Amado, Virginia Albiñana and Luisa-María Botella</i>	1807
Chapter 85	Osteogenesis Imperfecta <i>Colin R. Paterson</i>	1831
Chapter 86	Autosomal Dominant Disorders Associated to Breast Cancer <i>Nelly Margarita Macías-Gómez</i>	1849
Chapter 87	Fragile X Syndrome <i>M. Milà</i>	1859
Chapter 88	Fragile X-Associated Primary Ovarian Insufficiency (FXPOI) <i>Maria-Isabel Tejada</i>	1873
Chapter 89	Fragile X-Associated Tremor/Ataxia Syndrome <i>L. Rodríguez-Revenga</i>	1883
Chapter 90	Psychiatric Aspects in Fragile X Syndrome and Related Phenotypes <i>E. Mur and M. Milà</i>	1895
Chapter 91	Clinical Features Associated with <i>FMRI</i> Premutation Carriers <i>M. I. Alvarez-Mora and L. Rodríguez-Revenga</i>	1911
Chapter 92	Genetic Counseling of <i>FMRI</i> <i>I. Madrigal</i>	1927
Chapter 93	Treatment of Fragile X Spectrum: FXS, FXTAS and FXPOI <i>F. J. Ramos and M. P. Ribate</i>	1941

VOLUME 7

Chapter 94	Privacy and Progress in Whole Genome Sequencing <i>Presidential Commission for the Study of Bioethical Issues</i>	1955
Chapter 95	Genetic Testing: Scientific Background for Policymakers <i>Amanda K. Sarata</i>	2045
Chapter 96	Evolution of Human Genome Analysis: Impact on Diseases Diagnosis and Molecular Diagnostic Labs <i>Julie Gauthier, Isabelle Thiffault, Virginie Dormoy-Raclet and Guy A. Rouleau</i>	2057
Chapter 97	Improvements in HSV-1- Derived Amplicon Vectors for Gene Transfer <i>Matias E. Melendez, Alejandra I. Aguirre, Maria V. Baez, Carlos A. Bueno, Anna Salvetti, Diana A. Jerusalinsky and Alberto L. Epstein</i>	2079
Chapter 98	Advances in Viral Genome Research of Papillomaviruses <i>A. C. Freitas, A. L. S. Jesus, A. P. D. Gurgel and M. A. R. Silva</i>	2115
Chapter 99	Synthetic Synthesis of Viral Genomes <i>Monique R. Eller, Roberto S. Dias, Rafael L. Salgado, Cynthia C. da Silva and Sérgio O. De Paula</i>	2131
Chapter 100	Novel Bioinformatics Method to Analyze More Than 10,000 Influenza Virus Strains Easily at Once: Batch-Learning Self Organizing Map (BLSOM) <i>Yuki Iwasaki, Toshimichi Ikemura, Kennosuke Wada, Yoshiko Wada and Takashi Abe</i>	2149
Chapter 101	Oncogenes: Classification, Mechanisms of Activation, and Roles in Cancer Development Role of Oncogenes in Gynecological Pathology <i>Ciro Comparetto and Franco Borruto</i>	2163
Chapter 102	The Classification, Mechanisms of Activation and Roles in Cancer Development of Oncogenes <i>Patricio Barros-Núñez, Mónica Alejandra Rosales-Reynoso and Clara Ibet Juárez-Vázquez</i>	2193

VOLUME 8

Chapter 103	Dicer and MicroRNAs: Oncomirs Are the Next Frontier of Oncogenes Affecting Cancer Etiology and Tumor Progression <i>Ha T. Nguyen and Mandi M. Murph</i>	2227
Chapter 104	The Role of the Epidermal Growth Factor Receptor as a Therapeutic Target in Glioblastoma and Other Malignancies <i>Andrej Pala, Christian Rainer Wirtz and Marc-Eric Halatsch</i>	2255

Chapter 105	Tumor Suppressors Involved in DNA Repair and Carcinoprevention <i>Yasuko Kitagishi and Satoru Matsuda</i>	2267
Chapter 106	Molecular Pathogenesis of Neurofibromatosis Type 1 <i>Ming-Jen Lee, Alton Etheridge, David J. Galas and Kai Wang</i>	2279
Chapter 107	Imaging of Plexiform Neurofibromas in Neurofibromatosis Type 1 <i>Eva Dombi, Nicholas Patronas and Brigitte Widemann</i>	2299
Chapter 108	Surgical Treatment of Giant Neurofibromas <i>Stamatis Sapountzis, Ji Hoon Kim, Abid Rashid and Hung-Chi Chen</i>	2317
Chapter 109	Neurofibromatosis Type 1-Associated Nervous System Tumors and Current Treatment Strategies <i>Nilika Shah Singhal and Sabine Mueller</i>	2329
Chapter 110	Outcome Measures for Optic Pathway Gliomas <i>Peter M. K. de Blank, Grant T. Liu and Michael J. Fisher</i>	2349
Chapter 111	Neurofibromatosis Type 1 Bone Disease: Diagnosis and Management <i>Elizabeth K. Schorry and Alvin H. Crawford</i>	2375
Chapter 112	Cognition and Behaviour in Neurofibromatosis Type 1: Pathogenesis and Emerging Therapies <i>Jonathan M. Payne, Natalie A. Pride and Kathryn N. North</i>	2391
Chapter 113	Communication Disorders Associated with Neurofibromatosis Type 1 <i>Heather L. Thompson, David A. Stevenson, Sean M. Redmond, Bruce L. Smith and David H. Viskochil</i>	2421
Chapter 114	Children with Neurofibromatosis Type 1: Functioning in the Classroom <i>Yafit Gilboa, Sara Rosenblum, Aviva Fattal-Valveski and Naomi Josman</i>	2441
Index		2461
Related Nova Publications		2477