

1 Genome and Disease

Editor: J.-N. Volff, Würzburg

VIII + 246 p., 24 fig., 10 in color, 14 tab., hard cover, 2006. ISBN 978-3-8055-8029-8

2 Vertebrate Genomes

Editor: J.-N. Volff, Würzburg

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3 Gene and Protein Evolution

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VIII + 194 p., 34 fig., 18 in color, 10 tab., hard cover, 2007. ISBN 978-3-8055-8340-4

Our way of understanding evolution has changed completely with the era of genomics, particularly since the emergence of comparative genomics, a discipline allowing the analysis of complete genomes and biological processes over vast periods of time. In this volume, internationally recognized experts present and discuss an update of the evolutionary processes at the onset of organismal diversification and complexity, and review the mechanisms leading to the acquisition of new traits and functions. Different levels of evolution are considered, from internal modules in genes and proteins to interactomes and biological networks, with integration of the influence of both the genomic environment and the ecological context. Particular emphasis will be given to the origin of novel genes and gene functions as well as to the evolutionary impact of the duplication of genetic information, with several chapters devoted to transposable elements. Providing an excellent update on gene and protein evolution, this book will be appreciated by researchers in biology and medicine, biology teachers and anyone interested in evolution and genomics.