Genome Dynamics

Editor: J.-N. Volff

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3 **Gene and Protein Evolution**
Editor: J.-N. Volff, Lyon
VIII + 194 p., 34 fig., 18 in color, 10 tab., hard cover, 2007. ISBN 978–3–8055–8340–4

4 **Plant Genomes**
Editor: J.-N. Volff, Lyon
VIII + 146 p., 12 fig., 2 in color, 2 tab., hard cover, 2008. ISBN 978–3–8055–8491–3

5 **Meiosis**
Editors: R. Benavente, Würzburg; J.-N. Volff, Lyon
VIII + 160 p., 26 fig., 25 in color, 9 tab., hard cover, 2009. ISBN 978–3–8055–8967–3

6 **Microbial Pathogenomics**
Editors: H. de Reuse, Paris; S. Bereswill, Berlin
X + 214 p., 39 fig., 30 in color, 12 tab., hard cover, 2009. ISBN 978–3–8055–9192–8

Microbial Pathogenomics contains a unique collection of reviews demonstrating how genomics has revolutionized our understanding of virulence, host-adaptation strategies and the evolution of bacterial pathogens. Current technologies – computational tools and functional approaches to genome analysis – are carefully documented and clearly illustrated. These include visualization tools for genome comparison, databases, in silico metabolic reconstructions and function prediction as well as interactomics for the study of protein-protein interactions. The concepts of pan-genomics and reverse vaccinology are introduced as strategies when addressing the challenge presented by bacterial diversity in the prevention and treatment of infectious diseases. The authors explore individual bacterial pathogens and discuss the mechanisms that have contributed to their evolutionary success. Special cases of host adaptation, for example, are illustrated by *Helicobacter pylori* and *Mycobacterium tuberculosis* which are human-specific and highly persistent; further bacteria discussed include *Escherichia coli, Campylobacter, Pseudomonas, Legionella, Bartonella, Burkholderia* and *Staphylococcus*.

Microbial Pathogenomics provides the reader with a global view of key aspects and future trends in bacterial pathogenomics and evaluates their impact on the understanding and treatment of infectious diseases. Well illustrated and accessible to both specialists and nonspecialists, it is recommended not only for researchers in microbiology, genomics and biotechnology, but also for lecturers and teachers.

Cover illustration: Scanning electron microscopy of *Heliobacter pylori* on gastric epithelial cells (AGS). Specimens were critical-point dried using carbon dioxide, then coated with gold and examined with a JOEL JSM-6700 F SEM.

Image taken by Catherine Chaput at the Microscopy platform of the Institut Pasteur, Paris.

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