

# Contents

## Part I    Emergence of Standard Algorithms

<b>1</b>	<b>What’s Behind Blast</b> . . . . .	<b>3</b>
	Gene Myers	
<b>2</b>	<b>Forty Years of Model-Based Phylogeography</b> . . . . .	<b>17</b>
	David Bryant and Jamie Kydd	
<b>3</b>	<b>How to Infer Ancestral Genome Features by Parsimony: Dynamic Programming over an Evolutionary Tree</b> . . . . .	<b>29</b>
	Miklós Csűrös	
<b>4</b>	<b>Duplication, Rearrangement and Reconciliation: A Follow-Up 13 Years Later</b> . . . . .	<b>47</b>
	Cedric Chauve, Nadia El-Mabrouk, Laurent Guéguen, Magali Semeria, and Eric Tannier	
<b>5</b>	<b>The Genesis of the DCJ Formula</b> . . . . .	<b>63</b>
	Anne Bergeron and Jens Stoye	

## Part II    New Lights on Current Paradigms

<b>6</b>	<b>Large-Scale Multiple Sequence Alignment and Phylogeny Estimation</b> . . . . .	<b>85</b>
	Tandy Warnow	
<b>7</b>	<b>Rearrangements in Phylogenetic Inference: Compare, Model, or Encode?</b> . . . . .	<b>147</b>
	Bernard M.E. Moret, Yu Lin, and Jijun Tang	
<b>8</b>	<b>Status of Research on Insertion and Deletion Variations in the Human Population</b> . . . . .	<b>173</b>
	Liqing Zhang, Mingming Liu, and Layne T. Watson	

<b>9</b>	<b>A Retrospective on Genomic Preprocessing for Comparative Genomics</b> . . . . .	183
	Binhai Zhu	
<b>10</b>	<b>The Emperor Has No Caps! A Comparison of DCJ and Algebraic Distances</b> . . . . .	207
	Joao Meidanis and Sophia Yancopoulos	
<b>Part III Promising Directions</b>		
<b>11</b>	<b>Fractionation, Rearrangement, Consolidation, Reconstruction</b> . . .	247
	David Sankoff and Chunfang Zheng	
<b>12</b>	<b>Error Detection and Correction of Gene Trees</b> . . . . .	261
	Manuel Lafond, Krister M. Swenson, and Nadia El-Mabrouk	
<b>13</b>	<b>The Potential of Family-Free Genome Comparison</b> . . . . .	287
	Marília D.V. Braga, Cedric Chauve, Daniel Doerr, Katharina Jahn, Jens Stoye, Annelyse Thévenin, and Roland Wittler	
<b>14</b>	<b>Genetic History of Populations: Limits to Inference</b> . . . . .	309
	Daniel E. Platt, Filippo Utro, Marc Pybus, and Laxmi Parida	
<b>Index</b>	. . . . .	325

Models and Algorithms for Genome Evolution

Chauve, C.; El Mabrouk, N.; Tannier, E. (Eds.)

2013, XII, 328 p. 86 illus., 45 illus. in color., Hardcover

ISBN: 978-1-4471-5297-2