

Beyond the Gene

**Cytoplasmic Inheritance and
the Struggle for Authority
in Genetics**

JAN SAPP

New York Oxford
OXFORD UNIVERSITY PRESS
1987

Contents

Introduction	xi
Chapter 1. Defining the Organism	3
The Organism as a Chinese Box, 3	
"The Organism as a Whole," 6	
Compromising the Chromosomes, 16	
More Parts to the Whole, 25	
Defending the Chromosomes, 26	
Chapter 2. Constructing Heredity	32
Disciplines in Conflict, 33	
Genotype/Phenotype: A Discursive Tactic, 36	
The Rise of American Genetics and the Determinist Gene, 45	
Chapter 3. Challenging the Nuclear Monopoly of the Cell in Germany	54
The Conditions for the Possibility, 56	
The Gradual Disappearance of Victor Jollos, 60	
"Subsumed Under a Single Formula": The Case of Richard Goldschmidt, 65	
Hans Spemann: The Magnetic Order of Cells, 68	
Assembling the <i>Plasmon</i> , 72	
"The Scotch Verdict, 'Not Proven,'" 80	
Chapter 4. T. M. Sonneborn: Making Plasmagenes in America	87
Learning to Dissent, 90	
Plasmagene Theory, 98	
"I Always Liked Unorthodoxy," 105	
The Way to Power, 109	
From Plasmagenes to Human Serfdom, 115	
Chapter 5. Boris Ephrussi and the Birth of Genetics in France	123
The Neo-Lamarckian Hegemony, 124	
From Embryology to Physiological Genetics, 128	

The Competitive Strategy of French Genetics, 134	
“Still Threatened with Vertigo,” 140	
Position Effect, 148	
“A Common Language and a Common Ideology,” 150	
Accounting for Mendelian Error, 155	
 Chapter 6. The Cold War in Genetics	163
Propaganda in America, 168	
Ultra-conservative Anti-genetics in France, 181	
 Chapter 7. Problems with “Master Molecules”	192
Opposing “Dictatorial Elements”: Democratic Steady States, 196	
“The Cell as an Empire”: Cytoplasmic DNA, 203	
Structural Guidance: “A Virus is Far from a Cell,” 212	
 Chapter 8. Patterns of Power	221
 Bibliography	235
 Index	257