

Contents

Preface VII

Introduction 1

- Three Stages of Ecosocialist Analysis 1
- The Debate on Marx and Ecology a Decade and a Half Later 12
- Marx's 'Major Ecological Flaw': The Tanuro Thesis 15
- Marx and the Foreshortening of Intrinsic Value: The Kovel Thesis 34
- Marx, Aesthetics, and the Sensuous Value of Nature 50

1 The Dialectic of Organic and Inorganic Relations 57

- The Critique of 'Marx's Inorganic Body' 58
- The Organic/Inorganic Distinction and Hegel's Philosophy of Nature 65
- Marx's Dialectic of Organic/Inorganic: The Conditions of Human Existence 70
- The Ecological Transformation of Marx's Nature-Dialectic 78
- Instrumentalism and Teleology: Contradictions in the Ecological Critique of Marx 83
- Toward Ecological Materialism 88

2 The Origins of Ecological Economics: Podolinsky and Marx-Engels 89

- Podolinsky: Life and Work 93
- Development of Podolinsky's Project 99
- Accumulation of Energy on Earth 102
- Problems with the Quantitative Energy Accumulation Approach 103
- Podolinsky's Analysis as a Basis for Value Theory 106
- Value and Nature: Marx and Sieber versus Podolinsky 107
- Podolinsky's Perfect Machine Argument 110
- Shortcomings of the Perfect Machine Perspective 113
- Marx's Notes on Podolinsky 117
- Engels's Comments on Podolinsky 122
- Elaborations in *Die Neue Zeit* 131
- Stoffwechsel 134

3	Classical Marxism and Energetics	137
	Introduction	137
	Labour Power and its Value	139
	Energy and Surplus Value	144
	Capitalist Industrialisation and Thermodynamics in Marx's <i>Capital</i>	150
	Entropy and the Metabolic Rift	160
4	Engels, Entropy, and the Heat Death Hypothesis	165
	Introduction	165
	The Second Law and the Heat Death of the Universe	170
	The Heat Death Hypothesis and Nineteenth-Century Physics	186
	Marxism, the Entropy Law, and Ecology	197
	Conclusion: The Dialectics of Nature and Society and the Second Law	199
5	The Reproduction of Economy and Society	204
	Introduction	204
	Ecological Economists on Marx's Reproduction Schemes	205
	Production and Circular Flows in the <i>tableau économique</i>	206
	Marx on the <i>tableau économique</i>	209
	Production, Nature and Monetary Flows in Marx's Schemes	211
	The Analytical Background for Marx's Schemes	214
	The Reproduction Schemes and Environmental Crises	218
	Conclusion	221
	Conclusion: Marx and Metabolic Restoration	222
	Marx's Ecology after Marx (and after Engels)	224
	Marx, Metabolism, and Open-System Economics	232
	Against Energeticism	236
	Metabolic Restoration: Toward Sustainable Human Development	239
	Appendix 1: Sergei Podolinsky, 'Socialism and the Unity of Physical Forces' (Translated from the Italian)	243
	Appendix 2: Sergei Podolinsky, 'Human Labour and the Unity of Force' (Translated from the German)	262
	Bibliography	288
	Index	310