

CONTENTS

Preface

v

1. *MAKING SENSE OF SCIENCE*

<i>Introduction</i>	3
"The Origins of Modern Science," CHAUNCEY WRIGHT	13
"Studies in the Logic of Explanation," CARL G. HEMPEL and PAUL OPPENHEIM	19
"Crucial Experiments," IRVING M. COPI	29
"Measurement," MORRIS R. COHEN and ERNEST NAGEL	34
"The First Physical Synthesis," ALFRED NORTH WHITEHEAD	42

2. *PHILOSOPHICAL PROBLEMS OF PHYSICS*

<i>Introduction</i>	53
"Empirical and A Priori Knowledge," IMMANUEL KANT	64
"Geometry and Empirical Science," CARL G. HEMPEL	71
"The Method of Science," ALBERT EINSTEIN	80
"Einstein, Mach, and Logical Positivism," PHILIPP FRANK	85
"Are There Atoms?" HANS REICHENBACH	94
"On Philosophical Arguments in Physics," S. KÖRNER	106

6. THE RIDDLE OF INDUCTION

<i>Introduction</i>	287
"Of the Ground of Induction," J. S. MILL	293
"Induction as Experimental and Self-Corrective," CHARLES S. PEIRCE	296
"The Pragmatic Justification of Induction," JOHN W. LENZ	299
"The 'Justification' of Induction," P. F. STRAWSON	303
"The Riddle of Induction," EDWARD H. MADDEN	312
"Non-demonstrative Inference and Induction," BERTRAND RUSSELL	322

7. SCIENCE AND VALUES

<i>Introduction</i>	327
"Implications of Physics for Ethics," ERNST CASSIRER	332
"Psychoanalysis and Moral Judgeability," EDWARD H. MADDEN	340
"Reconstruction in Moral Conceptions," JOHN DEWEY	349
"Comment on Dewey's Ethical Views," MELVIN RADER	358
"Value Judgments in Scientific Validation," RICHARD RUDNER	363
<i>Epilogue</i>	367
<i>Selected Bibliography</i>	369
<i>Index</i>	377

3. *BIOLOGY AND THE SCIENCES OF MAN*

<i>Introduction</i>	113
"The Scientific Revolution in Biology," EVERETT W. HALL	121
"Mechanistic Explanation and Organismic Biology," ERNEST NAGEL	132
"Historical and Modern Conceptions of Psychology," KENNETH W. SPENCE	141
"Psychological Theory Construction and the Psychologist," EDWARD JOSEPH SHOEN, JR.	152
"The Operation Called <i>Verstehen</i> ," THEODORE ABEL	158
"Societal Facts," MAURICE MANDELBAUM	166
"Everyman His Own Historian," CARL BECKER	176
"Some Issues in the Logic of Historical Analysis," ERNEST NAGEL	187

4. *THE MEANING OF 'CAUSE' AND 'LAW'*

<i>Introduction</i>	201
"Cause," A. C. EWING	208
"The Idea of Necessary Connexion," DAVID HUME	216
"Causality: Critique of Hume's Analysis," CURT J. DUCASSE	221
"Invariable and Unconditional Antecedents," J. S. MILL	226
"Law Statements and Counterfactual Inference," RODERICK M. CHISHOLM	229
"Historical Laws," GUSTAV BERGMANN	235

5. *PROBABILITY NOTIONS*

<i>Introduction</i>	243
"Probability and Its Principles," PIERRE SIMON, MARQUIS DE LAPLACE	250
"Difficulties of the Classical View of Probability," JOHN VENN	255
"The Frequency Theory of Probability," JOHN W. LENZ	263
"Statistical and Inductive Probability," RUDOLF CARNAP	269
"The Conception of Probability as a Logical Relation," A. J. AYER	279