TABLE OF CONTENTS

VOLUME III

CHAPTER XXII

INTEGRAL INVARIANTS

	Page
Steady Motion of a Fluid	1
Definition of Integral Invariants	4
Relationships Between the Invariants and the Integrals	7
Relative Invariants	9
Relationship Between the Invariants and the Variational Equation	15
Transformation of the Invariants	19
Other Relationships Between the Invariants and the Integrals	27
Change in Variables	32
General Remarks	34

CHAPTER XXIII

FORMATION OF INVARIANTS

Use of the Last Multiplier	43
Equations of Dynamics	45
Integral Invariants and the Characteristic Exponents	50
Use of Kepler Variables	65
Remarks on the Invariant Given in No. 256	69
Case of the Reduced Problem	71

CHAPTER XXIV

USE OF INTEGRAL INVARIANTS

Test Procedures	73
Relationship to a Jacobi Theorem	81
Application to the Two-Body Problem	83
Application to Asymptotic Solutions	88

CHAPTER XXV

INTEGRAL INVARIANTS AND ASYMPTOTIC SOLUTIONS

Return to the Method of Bohlin	91
Relationship with Integral Invariants	115

Preceding page blank

Page

Another Discussion Method 120
Quadratic Invariants 130
Case of the Restricted Problem 134

CHAPTER XXVI

POISSON STABILITY

Different Definitions of Stability 142
Motion of a Liquid 143
Probabilitites 153
Extension of the Preceding Results 156
Application to the Restricted Problem 159
Application to the Three-Body Problem 167

CHAPTER XXVII

THEORY OF CONSEQUENTS

Theory of Consequents 176
Invariant Curves 179
Extension of the Preceding Results 188
Application to Equations of Dynamics 190
Application to the Restricted Problem 197

CHAPTER XXVIII

PERIODIC SOLUTIONS OF THE SECOND TYPE

Periodic Solutions of the Second Type 203
Case in Which Time Does Not Enter Explicitly 209
Application to the Equations of Dynamics 215
Solutions of the Second Type for Equations of Dynamics 228
Theorems Considering the Maxima 232
Existence of Solutions of the Second Type 241
Remarks 245
Special Cases 246

CHAPTER XXIX

DIFFERENT FORMS OF THE PRINCIPLE OF LEAST ACTION

Different Forms of the Principle of Least Action 250
Kinetic Focus 262

Page

Maupertuis Focus 268
Application to Periodic Solutions 270
Case of Stable Solutions 271
Unstable Solutions 273

CHAPTER XXX

FORMULATION OF SOLUTIONS OF THE SECOND TYPE

Formulation of Solutions of the Second Type 294
Effective Formulation of the Solutions 296
Discussion 310
Discussion of Particular Cases 320
Application to Equations of No. 13 322

CHAPTER XXXI

PROPERTIES OF SOLUTIONS OF THE SECOND TYPE

Solutions of the Second Type and the Principle of Least Action 329
Stability and Instability 340
Application to the Orbits of Darwin 348

CHAPTER XXXII

PERIODIC SOLUTIONS OF THE SECOND TYPE

Periodic Solutions of the Second Type 357

CHAPTER XXXIII

DOUBLY ASYMPTOTIC SOLUTIONS

Different Methods of Geometric Representation 366
Homoclinous Solutions 377
Heteroclinous Solutions 383
Comparison with No. 225 386
Examples of Heteroclinous Solutions 388