



# Contents

(Bracketed numbers are from the Bibliography.)

Preface

xi

The Classification of Wiener's Papers

2

P. Masani: Introduction and Acknowledgment

3

Bibliography of Norbert Wiener

7

## IA

### Mathematical Philosophy and Foundations

|       |  |     |
|-------|--|-----|
| [14a] | A simplification of the logic of relations                       | 29  |
|       | H. E. Kyburg: Comments on [14a]                                  | 33  |
| [14b] | A contribution to the theory of relative position                | 34  |
| [15a] | Studies in synthetic logic                                       | 43  |
| [21a] | A new theory of measurement: A study in the logic of mathematics | 58  |
|       | H. E. Kyburg: Comments on [14b], [15a], [21a]                    | 83  |
| [22a] | The relation of space and geometry to experience                 | 87  |
|       | A. Fine: Commentary on [22a]                                     | 215 |
| [15b] | Is mathematical certainty absolute?                              | 218 |
|       | W. V. Quine: Comments on [15b]                                   | 225 |
| [16a] | Mr. Lewis and implication  | 226 |
|       | W. V. Quine: Comments on [16a]                                   | 233 |
| [23a] | On the nature of mathematical thinking                           | 234 |
|       | R. L. Wilder: Comments on [23a]                                  | 239 |

|       |   |     |
|-------|---|-----|
| [13a] | On a method of rearranging the positive integers in a series of ordinal numbers greater than that of any given fundamental sequence of omegas | 240 |
|       | P. Masani: Comments on [13a]  | 249 |
| [20a] | Bilinear operations generating all operations rational in a domain $\Omega$   | 250 |
| [20b] | A set of postulates for fields  | 259 |
| [20c] | Certain iterative characteristics of bilinear operations  | 269 |
| [20d] | Certain iterative properties of bilinear operations   | 274 |
| [21b] | The isomorphisms of complex algebra   | 277 |
|       | R. J. Levit: Comments on [20a, b, c, d], [21b]  | 280 |
| [20e] | On the theory of sets of points in terms of continuous transformations  | 281 |
| [22b] | The group of the linear continuum   | 285 |
| [22c] | Limit in terms of continuous transformation   | 303 |
|       | R. L. Wilder: Comments on [20e], [22b,c]  | 319 |
| [17a] | Certain formal invariances in Boolean algebras  | 321 |
|       | F. E. Hohn: Comments on [17a]   | 329 |

## IB Potential Theory

|       |   |     |
|-------|---|-----|
| [23b] | Nets and the Dirichlet problem (with H. B. Phillips)                                | 333 |
|       | L. Lumer: Comments on [23b]   | 353 |
| [23c] | Discontinuous boundary conditions and the Dirichlet problem                         | 355 |
|       | L. Lumer: Comments on [23c]   | 363 |
| [24a] | Certain notions in potential theory   | 364 |
|       | L. Lumer: Comments on [24a]   | 392 |
| [24b] | The Dirichlet problem   | 394 |
| [24c] | Une condition nécessaire et suffisante de possibilité pour le problème de Dirichlet | 414 |

|                                    |     |
|------------------------------------|-----|
| L. Lumer: Comments on [24b, c]     | 419 |
| [25a] Note on a paper of O. Perron | 420 |
| L. Lumer: Comments on [25a]        | 432 |

## IC

### Brownian Movement, Wiener Integrals Ergodic and Chaos Theories, Turbulence and Statistical Mechanics

|   |     |
|---|-----|
| [20f] The mean of a functional of arbitrary elements                    | 435 |
| [21c] The average of an analytic functional                             | 442 |
| [21d] The average of an analytic functional and the Brownian movement   | 450 |
| [23d] Differential space  | 455 |
| [24d] The average value of a functional                                 | 499 |
| K. Ito: Commentary on [20f], [21c, d], [23d], [24d]                     | 513 |
| [23e] Note on the series $\sum_1^{\infty} (\pm 1/n)$                    | 520 |
| J. —P. Kahane: Comments on [23e]  | 524 |
| [24e] Un problème de probabilités dénombrables                          | 525 |
| J. —P. Kahane: Comments on [24e]  | 535 |
| [33a] Notes on random functions (with R. E. A. C. Paley and A. Zygmund) | 536 |
| J. —P. Kahane: Comments on [33a]  | 558 |
| [34a] Random Functions  | 564 |
| J. —P. Kahane: Comments on [34a]  | 571 |
| [38a] The homogeneous chaos   | 572 |
| L. Gross: Comments on [38a]   | 612 |
| [43a] The discrete chaos (with A. Wintner)                              | 614 |
| J. Feldman: Comments on [43a]   | 634 |
| B. McMillan: Comments on [43a]  | 636 |

|       |   |     |
|-------|---|-----|
| [39b] | The use of statistical theory in the study of turbulence  | 641 |
| [39h] | A new method in statistical mechanics (with B. McMillan)<br>(abstract)  | 652 |
| [40d] | A canonical series for symmetric functions in statistical<br>mechanics (abstract)                                     | 653 |
|       | B. McMillan and G. S. Deem: The Wiener program in statistical<br>physics. Commentary on [38a], [39b, h], [40d], [43a] | 654 |
| [39a] | The ergodic theorem   | 672 |
|       | E. M. Stein: Comments on [39a]  | 690 |
| [41a] | Harmonic analysis and ergodic theory (with A. Wintner)  | 693 |
| [41b] | On the ergodic dynamics of almost periodic systems<br>(with A. Wintner)   | 705 |
|       | W. A. Veech: Commentary on [41a, b]   | 736 |
| [57a] | The definition and ergodic properties of the stochastic adjoint<br>of a unitary transformation (with E. J. Akutowicz) | 744 |
|       | K. Ito: Comments on [57a]   | 757 |
|       | E. J. Akutowicz: Comments on [57a]  | 758 |
|       | Index of Papers and Commentaries  | 759 |

