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George Birtwistle (1877–1929) published *The New Quantum Mechanics* in 1928. His stated aim was to give a detailed account of work which had brought the relatively new subject of quantum mechanics to the fore in the previous few years. The earlier chapters give a restatement of Alfred Landé's theory of multiplets which reconciles it with the new mechanics which follow. Later chapters present the matrix theory of Heisenberg, the q -number theory of Dirac and the wave mechanics of Schroedinger, and synthesise new theories, statistics and controversies in the work of de Broglie, Bose, Einstein, Fermi and Dirac. The book gives a complete overview of the state of quantum mechanics at the end of the second decade of the twentieth century, making it a valuable benchmark for historians of science and mathematicians alike.

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GEORGE BIRTWISTLE



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THE NEW QUANTUM MECHANICS

by

GEORGE BIRTWISTLE,
FELLOW OF PEMBROKE COLLEGE,
CAMBRIDGE

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PREFACE

THIS book is concerned with the development of quantum mechanics during the past two years. A detailed account is given of the matrix theory of Heisenberg, Born and Jordan, the q -number theory of Dirac, and the wave mechanics of Schrödinger. The earlier chapters are devoted to a restatement of the Landé theory of the multiplets in a form which is in consonance with the new mechanics which is to follow; some later chapters are given up to the de Broglie theory of particles and their waves, and to the new statistics of Bose, Einstein, Fermi and Dirac.

The book closes with the resonance theory of the helium spectrum lately given by Heisenberg, and with the new speculations of Bohr on the limitations imposed by the quantum theory upon the possibilities of experimental observation.

G. B.

HOTEL PHOENIX,
COPENHAGEN

1 October 1927

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