

PREFACE

This book is the result of a peculiar combination of interests that has been with me for the past twelve years.

It is primarily written for physical and theoretical chemists, with or without an interest in history. Most of the original German material in theoretical chemistry has never been translated. An overview of the results obtained in the very early days has come from those Americans who went to Germany in the twenties to do post-doctoral studies, and communicated what they had found to the American scientific audience. A few years later, a wave of refugees from Germany took quantum physics to the United States. They further developed the lines of research started back in Europe and took on new research projects. With the original authors of quantum chemistry so close by, there was perhaps never a real need to go all the way back to the original material.

The book also aims to provide documentary material for philosophers of science studying the origins of quantum chemistry. The transfer of a whole body of knowledge between two cultures so radically different as Weimar Germany and the United States provides a wealth of material for historical studies. The serious study of this transfer has only just begun, and a lot more remains to be done. Philosophical speculation on scientific development without documented historical data is blind; this book aims at providing some of the data and will hopefully do its part in the development of a serious study of early quantum chemistry.

For this reason, the book has two introductions: a historical and philosophical introduction for those interested in the philosophical aspects of the development of atomic theories and a brief technical introduction for those who are not.

My aim has been to let the original material “speak for itself”. I have therefore refrained from adding large numbers of editorial remarks. Those remarks I have found necessary are collected in the technical introduction.

Part of this book was written with financial support from the Auckland University Research Committee, for which I am grateful. Also, Prof. Douglas Russell of the University of Auckland and Prof. Mary Jo Nye of the University of Oregon were kind enough to proofread parts of the material and supply useful feedback.

In a certain sense this book is a parting shot. It marks the final step of my intellectual transition from science to the philosophy of science. Therefore the two introductions carry two different addresses. Both are correct.

27 July 1998

Auckland, New Zealand