Foreword

Relativity is presently on trial. If Einstein's theory cannot be sustained there is no recognized alternative. This book provides not only an alternative but a comprehensive unification of all physics. It is based upon a straightforward confrontation with the anomalies in accepted electromagnetic theory. These undisputed inconsistencies cannot be ignored if modern science is to progress. What is offered here is not a new theory but a reconciliation of existing theories. The starting point of this work was not a lofty-minded attempt to overthrow Relativity or explain gravitation. It was a desire to understand more about the nature of ferromagnetism. However, what emerged provided physical concepts embracing fundamental magnetism from its atomic environment to the cosmos. Gravitation is explained and is supported by the derivation of G in terms of the properties of the electron. Elementary particles are explained and there is support from the exact quantitative assessment of their spin magnetic moments. Wave mechanics are explained and there is support from the quantitative evaluation of the Fine Structure Constant. Atomic structure is explained and is supported by quantitative analysis of nuclear binding energy. The evaluation of the binding energy of the deuteron is particularly revealing. It will be shown that Einstein's theory is unnecessary.

Introduction

At the end of the nineteenth century the well-tested mechanical principles of Isaac Newton were the very heart of physical theory. Electricity and magnetism still presented problems. The electron had been discovered but its charge had only just been measured. The photon light quantum and its source, the atom, attracted the attention. Electromagnetic waves had only recently been detected and their radiation pressure verified. However, Newton's principles of mechanics were firmly applied throughout physical theory. The aether was still a subject of speculation but interest in it was losing impetus. Its nature had become a great mystery, standing alongside the aged problems of the cause of gravitation and terrestrial magnetism. The great minds in physics were diverted to the atom and its quantum behaviour. Albert Einstein emerged in the midst of this diversion when, in 1905, he proposed new principles which were destined to limit the scope of application of Newton's mechanics. The already-recognized relationship between energy and mass was brought into the framework of Einstein's philosophy. A new way of looking at physics had been found. The aether had become an unnecessary integer since the mathematical structure of Einstein's theory provided the medium by which physical theory had to be linked. The Special and General Theories of Relativity became recognized aristocrats among physical theories. They have acquired and retained an undeniable elegance. However, in the past ten years, more and more voices have been raised in criticism. More is expected than the theories appear able to supply. Tests are becoming more exacting as new and better experimental techniques are developed. Relativity appears to be weakening even though it stands as a lone provider of physical understanding. There is, therefore, due cause for concern and this is an appropriate time to review physics as it could be without reliance upon Einstein's doctrines.