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The Riddle of the Universe at the Close of the Nineteenth Century

Originally trained as a physician, the biologist and thinker Ernst Haeckel (1834-1919), was an evolutionist who remained sceptical of natural selection. This book, which first appeared in German in 1899, sold 10,000 copies in its first few months and was published in English translation the following year. In the preface, Haeckel applauds the technological progress of the nineteenth century, but bemoans the lack of communication between empirical scientists and abstract philosophers in the search for truth. The book carefully outlines Haeckel's monistic philosophy and ethics, which he sees as the key to human progress. Its twenty chapters cover anthropology, psychology, cosmology and theology, ranging from the embryology of the soul to a debate on Christianity and science. Haeckel's philosophy attracted a sizeable popular following for several decades, and it remains of interest to historians working on the reception of Darwinism as well as its appropriation into Nazi ideology.

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Frontmatter
[More information](#)

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HAECKEL



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CAMBRIDGE UNIVERSITY PRESS

Cambridge New York Melbourne Madrid Cape Town Singapore São Paulo Delhi

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org

Information on this title: www.cambridge.org/9781108000895

© in this compilation Cambridge University Press 2009

This edition first published 1900

This digitally printed version 2009

ISBN 978-1-108-00089-5

This book reproduces the text of the original edition. The content and language reflect the beliefs, practices and terminology of their time, and have not been updated.

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Frontmatter

[More information](#)

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Frontmatter
[More information](#)

THE
RIDDLE OF THE UNIVERSE
AT THE CLOSE OF THE NINETEENTH CENTURY.

BY
ERNST HAECKEL
(*Ph.D., M.D., LL.D., Sc.D., and Professor at the University of Jena.*)

TRANSLATED BY JOSEPH McCABE.

ISSUED BY
THE RATIONALIST PRESS ASSOCIATION, LIMITED.

WATTS & CO.,
17, JOHNSON'S COURT, FLEET STREET, LONDON, E.C.
1900

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 Century
 Ernst Heinrich Philipp August Haeckel
 Frontmatter
[More information](#)

CONTENTS.

	PAGE
PREFACE	vii
AUTHOR'S PREFACE	xi
CHAPTER I.	
THE NATURE OF THE PROBLEM	1
CHAPTER II.	
OUR BODILY FRAME	22
CHAPTER III.	
OUR LIFE	39
CHAPTER IV.	
OUR EMBRYONIC DEVELOPMENT	49
CHAPTER V.	
THE HISTORY OF OUR SPECIES	72
CHAPTER VI.	
THE NATURE OF THE SOUL	90
CHAPTER VII.	
PSYCHIC GRADATIONS	110
CHAPTER VIII.	
THE EMBRYOLOGY OF THE SOUL	136
CHAPTER IX.	
THE PHYLOGENY OF THE SOUL	151

Cambridge University Press
978-1-108-00089-5 - The Riddle of the Universe at the Close of the Nineteenth
Century

Ernst Heinrich Philipp August Haeckel

Frontmatter

[More information](#)

vi

CONTENTS.

	PAGE
CHAPTER X.	
CONSCIOUSNESS	174
CHAPTER XI.	
THE IMMORTALITY OF THE SOUL.	192
CHAPTER XII.	
THE LAW OF SUBSTANCE.	215
CHAPTER XIII.	
THE EVOLUTION OF THE WORLD.	238
CHAPTER XIV.	
THE UNITY OF NATURE	260
CHAPTER XV.	
GOD AND THE WORLD	282
CHAPTER XVI.	
KNOWLEDGE AND BELIEF	300
CHAPTER XVII.	
SCIENCE AND CHRISTIANITY	316
CHAPTER XVIII.	
OUR MONISTIC RELIGION	339
CHAPTER XIX.	
OUR MONISTIC ETHICS	355
CHAPTER XX.	
SOLUTION OF THE WORLD-PROBLEMS	373
—————	
INDEX	393

Cambridge University Press

978-1-108-00089-5 - The Riddle of the Universe at the Close of the Nineteenth Century

Ernst Heinrich Philipp August Haeckel

Frontmatter

[More information](#)

PREFACE.

THE hour is close upon us when we shall commence our retrospect of one of the most wonderful sections of time that was ever measured by the sweep of the earth. Already the expert is at work, dissecting out and studying his particular phase of that vast world of thought and action we call the nineteenth century. Art, literature, commerce, industry, politics, ethics—all have their high interpreters among us; but in the chance of life it has fallen out that there is none to read aright for us, in historic retrospect, what after-ages will probably regard as the most salient feature of the nineteenth century—the conflict of theology with philosophy and science. The pens of our Huxleys, and Tyndalls, and Darwins lie where they fell; there is none left in strength among us to sum up the issues of that struggle with knowledge and sympathy.

In these circumstances it has been thought fitting that we should introduce to English readers the latest work of Professor Haeckel. Germany, as the reader will quickly perceive, is witnessing the same strange

Cambridge University Press

978-1-108-00089-5 - The Riddle of the Universe at the Close of the Nineteenth Century

Ernst Heinrich Philipp August Haeckel

Frontmatter

[More information](#)

viii

PREFACE.

reaction of thought that we see about us here in England, yet *Die Welt-räthsel* found an immediate and very extensive circle of readers. One of the most prominent zoologists of the century, Professor Haeckel has a unique claim to pronounce with authority, from the scientific side, on what is known as “the conflict of science and religion.” In the contradictory estimates that are urged on us—for the modern ecclesiastic is as emphatic in his assurance that the conflict has ended favourably to theology as the rationalist is with his counter-assertion—the last words of one of the leading combatants of the second half of the century, still, happily, in full vigour of mind, will be heard with respect and close attention.

A glance at the index of the work suffices to indicate its comprehensive character. The judgment of the distinguished scientist cannot fail to have weight on all the topics included; yet the reader will soon discover a vein of exceptionally interesting thought in the chapters on evolution. The evolution of the human body is no longer a matter of serious dispute. It has passed the first two tribunals—those of theology and of an *à priori* philosophy—and is only challenged at the third and last—that of empirical proof—by the decorative heads of scientific bodies and a few isolated thinkers.

“*Apparent rari nantes in gurgite vasto.*”

Cambridge University Press

978-1-108-00089-5 - The Riddle of the Universe at the Close of the Nineteenth Century

Ernst Heinrich Philipp August Haeckel

Frontmatter

[More information](#)

PREFACE.

ix

But the question of the evolution of the human mind, or soul, has been successfully divorced from that of the body. Roman Catholic advanced theologians, whose precise terminology demanded a clear position, admit the latter and deny the former categorically. Other theologians, and many philosophers, have still a vague notion that the evidence for the one does not impair their sentimental objection to the other. Dr. Haeckel's work summarizes the evidence for the evolution of mind in a masterly and profoundly interesting fashion. It seems impossible to follow his broad survey of the psychic world, from protist to man, without bearing away a conviction of the natural origin of every power and content of the human soul.

TRANSLATOR.

October, 1900.

Cambridge University Press

978-1-108-00089-5 - The Riddle of the Universe at the Close of the Nineteenth Century

Ernst Heinrich Philipp August Haeckel

Frontmatter

[More information](#)

AUTHOR'S PREFACE.

THE present study of the monistic philosophy is intended for thoughtful readers of every condition who are united in an honest search for the truth. An intensification of this effort of man to attain a knowledge of the truth is one of the most salient features of the nineteenth century. That is easily explained, in the first place, by the immense progress of science, especially in its most important branch, the history of humanity; it is due, in the second place, to the open contradiction that has developed during the century between science and the traditional "Revelation"; and, finally, it arises from the inevitable extension and deepening of the rational demand for an elucidation of the innumerable facts that have been recently brought to light, and for a fuller knowledge of their causes.

Unfortunately, this vast progress of empirical knowledge in our "Century of Science," has not been accompanied by a corresponding advancement of its theoretical interpretation—that higher knowledge of the causal nexus of individual phenomena which we call philosophy. We find, on the contrary, that the abstract and almost wholly metaphysical science which has been taught in our universities for the

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Frontmatter

[More information](#)

last hundred years under the name of "philosophy" is far from assimilating our hard-earned treasures of experimental research. On the other hand, we have to admit, with equal regret, that most of the representatives of what is called "exact science" are content with the special care of their own narrow branches of observation and experiment, and deem superfluous the deeper study of the universal connection of the phenomena they observe—that is, philosophy. While these pure empiricists "do not see the wood for the trees," the metaphysicians, on the other hand, are satisfied with the mere picture of the wood, and trouble not about its individual trees. The idea of a "philosophy of nature," to which both those methods of research, the empirical and the speculative, naturally converge, is even yet contemptuously rejected by large numbers of representatives of both tendencies.

This unnatural and fatal opposition between Science and Philosophy, between the results of experience and of thought, is undoubtedly becoming more and more onerous and painful to thoughtful people. That is easily proved by the increasing spread of the immense popular literature of "natural philosophy" which has sprung up in the course of the last half-century. It is seen, too, in the welcome fact that, in spite of the mutual aversion of the scientific observer and the speculative philosopher, nevertheless eminent thinkers from both camps league themselves in a united effort to attain the solution of that highest object of inquiry

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978-1-108-00089-5 - The Riddle of the Universe at the Close of the Nineteenth Century

Ernst Heinrich Philipp August Haeckel

Frontmatter

[More information](#)

AUTHOR'S PREFACE.

xiii

which we briefly denominate the "world-riddles." The studies of these "world-riddles" which I offer in the present work cannot reasonably claim to give a perfect solution of them: they merely offer to a wide circle of readers a critical inquiry into the problem, and seek to answer the question as to how nearly we have approached that solution at the present day. What stage in the attainment of truth have we actually arrived at in this closing year of the nineteenth century? What progress have we really made during its course towards that immeasurably distant goal?

The answer which I give to these great questions must, naturally, be merely subjective and only partly correct; for my knowledge of nature and my ability to interpret its objective reality are limited, as are those of every man. The one point that I can claim for it, and which, indeed, I must ask of my strongest opponents, is that my Monistic Philosophy is sincere from beginning to end—it is the complete expression of the conviction that has come to me, after many years of ardent research into Nature and unceasing reflection, as to the true basis of its phenomena. For fully half a century has my mind's work proceeded, and I now, in my sixty-sixth year, may venture to claim that it is mature; I am fully convinced that this "ripe fruit" of the tree of knowledge will receive no important addition and suffer no substantial modification during the brief spell of life that remains to me.

Cambridge University Press

978-1-108-00089-5 - The Riddle of the Universe at the Close of the Nineteenth Century

Ernst Heinrich Philipp August Haeckel

Frontmatter

[More information](#)

xiv

AUTHOR'S PREFACE.

I presented all the essential and distinctive elements of my monistic and genetic philosophy thirty-three years ago, in my *General Morphology of Organisms*, a large and laborious work, which has had but a limited circulation. It was the first attempt to apply in detail the newly-established theory of evolution to the whole science of organic forms. In order to secure the acceptance of at least one part of the new thought which it contained, and to kindle a wider interest in the greatest advancement of knowledge that our century has witnessed, I published my *Natural History of Creation* two years afterwards. As this less complicated work, in spite of its great defects, ran into nine large editions and twelve different translations, it has contributed not a little to the spread of monistic views. The same may be said of the less known *Anthropogeny*¹ (1874), in which I set myself the difficult task of rendering the most important facts of the theory of man's descent accessible and intelligible to the general reader; the fourth, enlarged, edition of that work appeared in 1891. In the paper which I read at the fourth International Congress of Zoology at Cambridge, in 1898, on "Our Present Knowledge of the Descent of Man"² (a seventh edition of which appeared in 1899), I treated certain significant and particularly valuable advances which this important branch of anthropology

¹ There are two English translations, *The Evolution of Man* (1879) and *The Pedigree of Man* (1880).

² The English translation, by Dr. Hans Gadow, bears the title of *The Last Link*.

Cambridge University Press

978-1-108-00089-5 - The Riddle of the Universe at the Close of the Nineteenth Century

Ernst Heinrich Philipp August Haeckel

Frontmatter

[More information](#)

AUTHOR'S PREFACE.

XV

has recently made. Other isolated questions of our modern natural philosophy, which are peculiarly interesting, have been dealt with in my *Collected Popular Lectures on the Subject of Evolution* (1878). Finally, I have briefly presented the broad principles of my monistic philosophy and its relation to the dominant faith in my *Confession of Faith of a Man of Science: Monism as a Connecting Link between Religion and Science*¹ (1892, eighth edition, 1899).

The present work on *The Riddle of the Universe* is the continuation, confirmation, and integration of the views which I have urged for a generation in the aforesaid volumes. It marks the close of my studies on the monistic conception of the universe. The earlier plan, which I projected many years ago, of constructing a complete "System of Monistic Philosophy" on the basis of evolution will never be carried into effect now. My strength is no longer equal to the task, and many warnings of approaching age urge me to desist. Indeed, I am wholly a child of the nineteenth century, and with its close I draw the line under my life's work.

The vast extension of human knowledge which has taken place during the present century, owing to a happy division of labour, makes it impossible to-day to range over all its branches with equal thoroughness, and to show their essential unity and connection. Even a genius of the highest type, having an

¹ English translation, by J. Gilchrist, with the title of *Monism*.

Cambridge University Press

978-1-108-00089-5 - The Riddle of the Universe at the Close of the Nineteenth Century

Ernst Heinrich Philipp August Haeckel

Frontmatter

[More information](#)

xvi

AUTHOR'S PREFACE.

equal command of every branch of science, and largely endowed with the artistic faculty of comprehensive presentation, would be incapable of setting forth a complete view of the cosmos in the space of a moderate volume. My own command of the various branches of science is uneven and defective, so that I can attempt no more than to sketch the general plan of such a world-picture, and point out the pervading unity of its parts, however imperfect be the execution. Thus it is that this work on the world-enigma has something of the character of a sketch-book, in which studies of unequal value are associated. As the material of the book was partly written many years ago, and partly produced for the first time during the last few years, the composition is, unfortunately, uneven at times; repetitions, too, have proved unavoidable. I trust those defects will be overlooked.

In taking leave of my readers, I venture the hope that, through my sincere and conscientious work—in spite of its faults, of which I am not unconscious—I have contributed a little towards the solution of the great enigma. Amid the clash of theories, I trust that I have indicated to many a reader who is absorbed in the zealous pursuit of purely rational knowledge that path which, it is my firm conviction, alone leads to truth—the path of empirical investigation and of the Monistic Philosophy which is based upon it.

Jena, Germany.

ERNST HAECKEL.