

the origin of species answer key

the origin of species answer key serves as an essential resource for students, educators, and enthusiasts seeking a deeper understanding of Charles Darwin's groundbreaking work. This answer key provides detailed explanations and clarifications for key concepts and questions related to "The Origin of Species," one of the most important scientific texts in evolutionary biology. By exploring the mechanisms of natural selection, adaptation, and speciation, learners can better grasp the complexities of evolutionary theory. This article will delve into the significance of the answer key, its structure, and how it aids in comprehending the intricate ideas in Darwin's work. Additionally, it will outline common questions and answers that appear in academic settings, offering a comprehensive guide to mastering the content. The information provided here will be invaluable for those preparing for exams, writing essays, or simply expanding their knowledge of evolutionary science.

- Understanding the Purpose of the Origin of Species Answer Key
- Key Concepts Explained in the Answer Key
- Common Questions and Detailed Answers
- How to Use the Answer Key Effectively
- Benefits of Utilizing an Answer Key in Evolutionary Studies

Understanding the Purpose of the Origin of Species Answer Key

The origin of species answer key is designed to assist learners in navigating the complex theories presented by Charles Darwin in his seminal work. Its primary purpose is to break down difficult concepts into manageable explanations, thus enhancing comprehension and retention. By providing clear, concise answers to typical questions, the answer key serves as a study aid that supports classroom instruction and independent learning alike. It also helps clarify misunderstandings and reinforces critical thinking about evolutionary processes.

Clarifying Complex Evolutionary Concepts

Darwin's "The Origin of Species" introduces several intricate ideas such as natural selection, survival of the fittest, and descent with modification. The answer key elucidates these concepts by offering straightforward definitions, examples, and interpretations. This clarity is crucial for students who may find the original text challenging due to its 19th-century language and scientific depth.

Supporting Academic Success

In academic environments, the origin of species answer key is frequently used as a supplementary tool to improve test performance and essay writing. It aligns with educational standards and curriculum requirements, ensuring that users are meeting learning objectives effectively.

Key Concepts Explained in the Answer Key

The answer key covers a broad range of fundamental ideas that underpin Darwin's theory of evolution. Each concept is explained with attention to detail, helping learners understand the scientific principles and their implications for biology.

Natural Selection

Natural selection is the process by which organisms better adapted to their environment tend to survive and produce more offspring. The answer key details this mechanism, emphasizing variation within populations, competition for resources, and differential survival rates.

Adaptation and Variation

Adaptations refer to traits that enhance an organism's ability to survive and reproduce. The key explains how genetic variation within species provides the material for natural selection to act upon, resulting in evolutionary change over generations.

Speciation and Descent with Modification

Speciation is the formation of new and distinct species in the course of evolution. The answer key highlights how reproductive isolation and genetic divergence lead to the emergence of new species, a process central to Darwin's theory of descent with modification.

Common Questions and Detailed Answers

The origin of species answer key addresses frequently asked questions that test comprehension of Darwin's theories. These questions often appear in exams, homework assignments, and discussion prompts.

1. What evidence did Darwin use to support his theory of natural selection?

Darwin cited observations from his voyage on the HMS Beagle, fossil records, geographical distribution of species, and comparative anatomy to support natural selection.

2. How does natural selection lead to evolution?

Natural selection favors individuals with advantageous traits,

increasing their reproductive success and gradually changing the genetic makeup of populations over time.

3. What role do mutations play in evolution?

Mutations introduce genetic variation, which is essential for natural selection to act upon and drive evolutionary changes.

4. Why are some species more successful than others?

Species with traits better suited to their environment have higher survival and reproduction rates, making them more successful in evolutionary terms.

5. What is the significance of the fossil record?

The fossil record provides historical evidence of species that existed in the past, showing gradual changes and supporting evolutionary theory.

How to Use the Answer Key Effectively

Maximizing the benefits of the origin of species answer key requires strategic study practices. Understanding how to integrate it into learning routines enhances comprehension and exam readiness.

Active Reading and Note-Taking

Use the answer key alongside the original text to actively engage with the material. Taking notes on key points and summarizing answers improves retention and understanding.

Practice Testing

Answer questions from the key without immediately checking answers to test knowledge. This practice strengthens recall and identifies areas needing further review.

Group Study Sessions

Discussing answer key content with peers fosters collaborative learning and exposes learners to diverse perspectives, deepening understanding of complex topics.

Benefits of Utilizing an Answer Key in

Evolutionary Studies

Incorporating the origin of species answer key into study routines offers several advantages that contribute to academic and intellectual growth.

- **Improved Comprehension:** Detailed explanations simplify intricate ideas, making them more accessible.
- **Enhanced Retention:** Structured answers help reinforce memory through repetition and clarity.
- **Efficient Study:** Focused answers save time by providing direct information without unnecessary elaboration.
- **Confidence Building:** Knowing correct answers boosts confidence during tests and discussions.
- **Supplemental Learning:** Complements textbooks and lectures by offering additional perspectives and clarifications.

Frequently Asked Questions

What is the 'Origin of Species' answer key?

The 'Origin of Species' answer key is a guide or resource that provides answers and explanations to questions related to Charles Darwin's book 'On the Origin of Species,' often used by students and educators.

Why is the 'Origin of Species' important in biology?

The 'Origin of Species' is important because it introduced the theory of natural selection, explaining how species evolve over time, which is a foundational concept in modern biology.

Where can I find a reliable 'Origin of Species' answer key?

Reliable 'Origin of Species' answer keys can be found in educational textbooks, official study guides, or reputable online educational platforms that provide study resources for biology.

Does the 'Origin of Species' answer key cover natural selection?

Yes, the answer key typically includes explanations about natural selection, which is the central mechanism of evolution described in Darwin's 'On the Origin of Species.'

Can the 'Origin of Species' answer key help with understanding evolutionary concepts?

Absolutely, the answer key helps clarify complex evolutionary concepts presented in the book, making it easier for learners to grasp the principles of evolution and species adaptation.

Is the 'Origin of Species' answer key suitable for all education levels?

Answer keys vary in complexity; some are tailored for high school students, while others are more detailed for college-level studies. It's important to choose one appropriate for your education level.

Additional Resources

1. Origin of Species Answer Key: A Comprehensive Guide

This book provides detailed explanations and answers to the questions found in various editions of Charles Darwin's "On the Origin of Species." It is designed to help students and educators better understand the complex concepts of natural selection, adaptation, and evolutionary theory. The guide includes chapter summaries, key term definitions, and critical thinking questions to enhance learning.

2. Darwin's Origin of Species: Study Companion and Answer Key

Aimed at high school and college students, this companion book breaks down Darwin's original text into manageable sections. It offers clear answers to common study questions and includes additional commentary to clarify difficult passages. The book also features quizzes and essay prompts to encourage deeper engagement with the material.

3. The Science Behind the Origin of Species: Answer Key and Explanations

This title delves into the scientific principles underlying Darwin's work, providing answers to typical academic questions about evolutionary biology. It explains the evidence Darwin used and addresses modern interpretations and discoveries that support or expand on his theory. The book is a valuable resource for both biology students and teachers.

4. On the Origin of Species: Annotated Answer Key Edition

Featuring line-by-line annotations and answers, this edition helps readers navigate Darwin's sometimes challenging 19th-century prose. It clarifies terminology and historical context while answering study questions at the end of each chapter. The annotations also highlight key scientific concepts to enhance comprehension.

5. Evolutionary Biology and the Origin of Species: Workbook and Answer Key

This workbook includes exercises and questions designed to test understanding of evolutionary concepts presented by Darwin. The accompanying answer key provides thorough explanations and references to the original text. It is an excellent tool for classroom use or self-study.

6. Teaching the Origin of Species: Curriculum and Answer Key

Created for educators, this book offers lesson plans, discussion questions, and an answer key tailored to teaching Darwin's seminal work. It focuses on making the theory accessible and engaging for diverse student audiences. The curriculum integrates historical, scientific, and philosophical perspectives

on evolution.

7. *Exploring Natural Selection: Origin of Species Answer Key*

This guide focuses specifically on the mechanism of natural selection as described in Darwin's book. It provides detailed answers to questions about how natural selection operates and its implications for species diversity. Supplementary illustrations and examples make complex ideas more tangible.

8. *Charles Darwin's Origin of Species: Question and Answer Guide*

This question-and-answer format book covers the major themes and arguments presented by Darwin. Each question is followed by a concise, informative answer aimed at clarifying common misconceptions and enhancing understanding. It is suitable for readers new to evolutionary theory as well as those seeking a refresher.

9. *Understanding Evolution: The Origin of Species Answer Key for Students*

Designed to accompany student editions of "On the Origin of Species," this answer key helps learners track their progress and grasp key evolutionary concepts. It includes summaries of each chapter, explanations of Darwin's experiments, and answers to review questions. The book supports effective study habits and critical thinking skills.

The Origin Of Species Answer Key

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The Origin of Species: Answer Key - Unlocking Darwin's Masterpiece and its Modern Relevance

Unraveling the complexities of Charles Darwin's *On the Origin of Species* requires more than a cursory glance; it necessitates a deep dive into the groundbreaking theory of evolution by natural selection, its historical context, its ongoing scientific support, and its implications for our understanding of the natural world. This comprehensive guide serves as an "answer key" not just to the literal contents of Darwin's work but also to the broader questions it raises and the ongoing debates it inspires.

Ebook Title: Deciphering Darwin: A Comprehensive Guide to the Origin of Species

Contents:

Introduction: Setting the Stage for Evolutionary Theory

Chapter 1: Darwin's Voyage and the Genesis of his Ideas: Exploring the Beagle expedition and its impact.

Chapter 2: Natural Selection: The Engine of Evolution: Deep dive into the mechanism of natural selection.

Chapter 3: Evidence for Evolution: Fossils, Biogeography, and Comparative Anatomy: Examining the supporting evidence.

Chapter 4: Challenges and Criticisms of Darwin's Theory: Addressing historical and modern objections.

Chapter 5: The Modern Synthesis: Integrating Genetics and Evolution: Connecting Darwin's work with modern genetics.

Chapter 6: Evolution in Action: Contemporary Examples and Research: Showcasing recent evolutionary studies.

Chapter 7: The Implications of Evolution: From Medicine to Conservation: Exploring the impact of evolutionary theory.

Conclusion: Darwin's Enduring Legacy and Future Directions in Evolutionary Biology

Detailed Outline Explanation:

Introduction: This section will lay the groundwork by providing historical context, introducing Darwin and his work, and outlining the scope of the ebook. It will explain the significance of *On the Origin of Species* and its lasting impact on scientific thought.

Chapter 1: Darwin's Voyage and the Genesis of his Ideas: This chapter details Darwin's five-year voyage on the HMS Beagle, highlighting the observations and specimens collected that profoundly shaped his thinking. Emphasis will be placed on the biogeographic patterns observed in the Galapagos Islands and their contribution to the development of his theory. Recent research on the Beagle voyage and its influence on Darwin's thinking will be incorporated.

Chapter 2: Natural Selection: The Engine of Evolution: This chapter provides a detailed explanation of natural selection, including concepts like variation, inheritance, overproduction, and differential survival and reproduction. It will explore various examples of natural selection in action, from the evolution of antibiotic resistance in bacteria to the development of camouflage in animals. This chapter incorporates modern understanding of natural selection beyond Darwin's original formulation.

Chapter 3: Evidence for Evolution: Fossils, Biogeography, and Comparative Anatomy: This chapter examines the diverse lines of evidence supporting evolution. It will discuss the fossil record, showing transitional forms and the progression of life through time. Biogeography, the distribution of species across the globe, will be explored, along with comparative anatomy, demonstrating homologous structures in different species. The latest fossil discoveries and phylogenetic analyses will be included.

Chapter 4: Challenges and Criticisms of Darwin's Theory: This chapter acknowledges the historical and ongoing criticisms leveled against Darwin's theory. It will discuss the challenges posed by the apparent complexity of some biological structures (like the eye), the incomplete fossil record, and the seemingly sudden appearance of some species in the fossil record. It will address these criticisms using modern scientific understanding, such as punctuated equilibrium.

Chapter 5: The Modern Synthesis: Integrating Genetics and Evolution: This chapter bridges Darwin's work with the advancements in genetics during the 20th century. It explains how Mendelian genetics provided a mechanism for inheritance, resolving a major gap in Darwin's original theory. The concepts of population genetics, mutation, gene flow, and genetic drift will be

explained in detail, showing how they contribute to evolution.

Chapter 6: Evolution in Action: Contemporary Examples and Research: This chapter focuses on recent research demonstrating evolution in action. Examples include the evolution of pesticide resistance in insects, the rapid adaptation of species to climate change, and the emergence of new diseases. Specific recent studies and their findings will be presented, showcasing the dynamism of evolution.

Chapter 7: The Implications of Evolution: From Medicine to Conservation: This chapter explores the far-reaching implications of evolutionary theory in various fields. It will discuss the relevance of evolution to medicine (antibiotic resistance, disease evolution), agriculture (crop improvement, pest management), and conservation biology (understanding biodiversity, predicting species extinction). It highlights the practical applications of evolutionary principles.

Conclusion: This chapter summarizes the key concepts discussed throughout the ebook, reiterating the power and enduring relevance of Darwin's theory. It will look towards the future of evolutionary biology, highlighting ongoing research areas and the exciting questions that remain to be answered.

Keywords: On the Origin of Species, Charles Darwin, evolution, natural selection, adaptation, speciation, phylogeny, genetics, modern synthesis, evolutionary biology, fossil record, biogeography, comparative anatomy, Darwin's finches, Galapagos Islands, HMS Beagle, punctuated equilibrium, antibiotic resistance, climate change adaptation.

FAQs:

1. What is the central argument of *On the Origin of Species*? The central argument is that species change over time through a process called natural selection, driven by variation within populations and competition for resources.
2. What is natural selection? Natural selection is the process whereby organisms better adapted to their environment tend to survive and produce more offspring.
3. What evidence did Darwin use to support his theory? Darwin used evidence from fossils, biogeography, comparative anatomy, and embryology.
4. What are some criticisms of Darwin's theory? Criticisms have included the perceived lack of transitional forms in the fossil record, the complexity of some biological structures, and the mechanism of inheritance. Modern genetics largely addresses these criticisms.

5. What is the modern synthesis? The modern synthesis integrates Darwin's theory of natural selection with Mendelian genetics, providing a more complete understanding of evolution.
6. How does evolution relate to medicine? Understanding evolution is crucial in addressing antibiotic resistance, the emergence of new diseases, and the development of effective treatments.
7. How is evolution relevant to conservation? Evolutionary principles are essential for understanding biodiversity, predicting species extinction, and designing effective conservation strategies.
8. What are some examples of evolution in action today? Examples include the evolution of pesticide resistance in insects, the adaptation of species to climate change, and the emergence of new viruses.
9. What are the future directions of evolutionary biology? Future research will likely focus on understanding the role of epigenetics, exploring the evolution of complex traits, and predicting the impacts of environmental change on biodiversity.

Related Articles:

1. Darwin's Finches: A Case Study in Adaptive Radiation: This article will detail the evolution of Darwin's finches in the Galapagos Islands, showcasing adaptive radiation and the power of natural selection.
2. The Fossil Record and the Evidence for Evolution: This article will explore the fossil record, highlighting key transitional fossils and demonstrating the progression of life through time.
3. The Modern Synthesis of Evolutionary Theory: A detailed exploration of the integration of Darwinian evolution and Mendelian genetics.
4. Evolutionary Medicine: Combating Antibiotic Resistance and Emerging Diseases: This article will focus on the application of evolutionary principles to the fight against infectious diseases.
5. Biogeography: The Distribution of Life on Earth: An examination of biogeographic patterns and their contribution to our understanding of evolution.
6. Comparative Anatomy: Homologous and Analogous Structures: This article will discuss the anatomical similarities and differences between species and what they reveal about evolutionary relationships.
7. Punctuated Equilibrium: A Challenge to Gradualism? A discussion of the punctuated equilibrium model of evolution and its implications.
8. Evolution and Climate Change: Adapting to a Changing World: This article explores how species are adapting to the rapid changes in climate brought on by human activity.
9. The Ethical Implications of Evolutionary Theory: This article will examine the ethical questions raised by the understanding of human evolution, such as the implications for social justice and our place in the natural world.

the origin of species answer key: The Beak of the Finch Jonathan Weiner, 2014-05-14
PULITZER PRIZE WINNER • A dramatic story of groundbreaking scientific research of Darwin's discovery of evolution that spark[s] not just the intellect, but the imagination (Washington Post Book World). "Admirable and much-needed.... Weiner's triumph is to reveal how evolution and science work, and to let them speak clearly for themselves."—The New York Times Book Review On a desert island in the heart of the Galapagos archipelago, where Darwin received his first inklings of the theory of evolution, two scientists, Peter and Rosemary Grant, have spent twenty years proving that Darwin did not know the strength of his own theory. For among the finches of Daphne Major, natural selection is neither rare nor slow: it is taking place by the hour, and we can watch. In this remarkable story, Jonathan Weiner follows these scientists as they watch Darwin's finches and come up with a new understanding of life itself. *The Beak of the Finch* is an elegantly written and compelling masterpiece of theory and explication in the tradition of Stephen Jay Gould.

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the origin of species answer key: *Charles Darwin* Gavin de Beer, 2017-05-30 Excerpt from Charles Darwin: Evolution by Natural Selection My introduction to the name of Darwin took place nearly sixty years ago in Paris, where I used to be taken from my home in the Rue de la Paix to play in the Gardens of the Tuileries. On the way, in the Rue saint-honore near the corner of the Rue de Castiglione, was a Shop that called itself Articles pour chz'ens and sold dog collars, harness, leads, raincoats, greatcoats With little pockets for handkerchiefs, and buttoned boots made of india - rubber, the pair for fore - paws larger than the pair for hind-paws. One day this heavenly shop produced a catalogue, and although I have long since lost it, I remember its introduction as vividly as if I had it before me. It began, 'on sait depuis Darwin que nous descendons des singes, ce qui nous fait encore plus aimer nos chiens.' I asked, 'qu'est ce que ca veut dire, Darre-vingt?' My father came to the rescue and told me that Darwin was a famous Englishman who had done something or other that meant nothing to me at all; but I recollect that because Darwin was English and a great man, it all fitted perfectly into my pattern of life, which was built on the principle that if anything was English it must be good. I have learnt better since then, but Darwin, at any rate, has never let me down. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works.

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career collecting specimens in the Amazon rainforest. He explored the Rio Negra for four years, making notes on the peoples and languages he encountered as well as the geography, flora, and fauna. While travelling, Wallace refined his thoughts about evolution and in 1858 he outlined his theory of natural selection in an article he sent to Charles Darwin. Wallace made a huge contribution to the natural sciences and he will continue to be remembered as one of the key figures in the development of evolutionary theory.

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its products.

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Opmålingsskibet Beagles togt til Sydamerika og videre jorden rundt

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the origin of species answer key: Replacing Darwin Nathaniel T Jeanson, 2017-09-01 If Darwin were to examine the evidence today using modern science, would his conclusions be the same? Charles Darwin's *On the Origin of Species*, published over 150 years ago, is considered one of history's most influential books and continues to serve as the foundation of thought for evolutionary biology. Since Darwin's time, however, new fields of science have emerged that simply give us better answers to the question of origins. With a Ph.D. in cell and developmental biology from Harvard University, Dr. Nathaniel Jeanson is uniquely qualified to investigate what genetics reveal about origins. The Origins Puzzle Comes Together If the science surrounding origins were a puzzle, Darwin would have had fewer than 15% of the pieces to work with when he developed his theory of evolution. We now have a much greater percentage of the pieces because of modern scientific research. As Dr. Jeanson puts the new pieces together, a whole new picture emerges, giving us a testable, predictive model to explain the origin of species. A New Scientific Revolution Begins Darwin's theory of evolution may be one of science's "sacred cows," but genetics research is proving it wrong. Changing an entrenched narrative, even if it's wrong, is no easy task. Replacing Darwin asks you to consider the possibility that, based on genetics research, our origins are more easily understood in the context of . . . In the beginning . . . God, with the timeline found in the biblical narrative of Genesis. There is a better answer to the origins debate than what we have been led to believe. Let the revolution begin! About the Author Dr. Nathaniel Jeanson is a scientist and a scholar, trained in one of the most prestigious universities in the world. He earned his B.S. in Molecular Biology and Bioinformatics from the University of Wisconsin-Parkside and his PhD in Cell and Developmental Biology from Harvard University. As an undergraduate, he researched the molecular control of photosynthesis, and his graduate work involved investigating the molecular and physiological control of adult blood stem cells. His findings have been presented at regional and national conferences and have been published in peer-reviewed journals, such as *Blood*, *Nature*, and *Cell*. Since 2009, he has been actively researching the origin of species, both at the Institute for Creation Research and at Answers in Genesis.

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idea that group selection causes characteristics to evolve that are good for the group though bad for the individual? How does Darwin's discussion of God in *The Origin of Species* square with the common view that he is the champion of methodological naturalism? These are just some of the intriguing questions raised in this volume of interconnected philosophical essays on Darwin. The author's approach is informed by modern issues in evolutionary biology, but is sensitive to the ways in which Darwin's outlook differed from that of many biologists today. The main topics that are the focus of the book—common ancestry, group selection, sex ratio, and naturalism—have rarely been discussed in their connection with Darwin in such penetrating detail. Author Professor Sober is the 2008 winner of the Prometheus Prize. This biennial award, established in 2006 through the American Philosophical Association, is designed to honor a distinguished philosopher in recognition of his or her lifetime contribution to expanding the frontiers of research in philosophy and science. This insightful collection of essays will be of interest to philosophers, biologists, and laypersons seeking a deeper understanding of one of the most influential scientific theories ever propounded.

the origin of species answer key: The Descent of Man, and Selection in Relation to Sex Charles Darwin, 2008-09-02 In the current resurgence of interest in the biological basis of animal behavior and social organization, the ideas and questions pursued by Charles Darwin remain fresh and insightful. This is especially true of *The Descent of Man and Selection in Relation to Sex*, Darwin's second most important work. This edition is a facsimile reprint of the first printing of the first edition (1871), not previously available in paperback. The work is divided into two parts. Part One marshals behavioral and morphological evidence to argue that humans evolved from other animals. Darwin shows that human mental and emotional capacities, far from making human beings unique, are evidence of an animal origin and evolutionary development. Part Two is an extended discussion of the differences between the sexes of many species and how they arose as a result of selection. Here Darwin lays the foundation for much contemporary research by arguing that many characteristics of animals have evolved not in response to the selective pressures exerted by their physical and biological environment, but rather to confer an advantage in sexual competition. These two themes are drawn together in two final chapters on the role of sexual selection in humans. In their Introduction, Professors Bonner and May discuss the place of *The Descent* in its own time and relation to current work in biology and other disciplines.

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be heading. Written in a clear and non-technical style, this book will be of use as a textbook for students in the philosophy of science who need to become familiar with the background to the debates about evolution.

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acts of violence and untimely death, what happens to trust? Set in the lands of Northeast Brazil, this is an account of the everyday experience of scarcity, sickness and death that centres on the lives of the women and children of a hillside favela. Bringing her readers to the impoverished slopes above the modern plantation town of Bom Jesus de Mata, where she has worked on and off for 25 years, Nancy Scheper-Hughes follows three generations of shantytown women as they struggle to survive through hard work, cunning and triage. It is a story of class relations told at the most basic level of bodies, emotions, desires and needs. Most disturbing - and controversial - is her finding that mother love, as conventionally understood, is something of a bourgeois myth, a luxury for those who can reasonably expect, as these women cannot, that their infants will live.

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1987-11-26 Charles Darwin's *On the Origin of Species* is unquestionably one of the chief landmarks in biology. The Origin (as it is widely known) was literally only an abstract of the manuscript Darwin had originally intended to complete and publish as the formal presentation of his views on evolution. Compared with the Origin, his original long manuscript work on Natural Selection, which is presented here and made available for the first time in printed form, has more abundant examples and illustrations of Darwin's argument, plus an extensive citation of sources.

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