
The Origin Of Life

Oparin

The Origin of Life, By A.I. Oparin. Translation With Annotations by Sergius Morgulis

The Origin of Life on the Earth

Creating Life in the Lab

The Emergence of Life on Earth

Origins of Life

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The Origin of Life on the Earth. [@ .] A. I.

Oparin,... 3rd... Edition. Translated... by Ann

Synge

The Origin of Life on the Earth

First Steps in the Origin of Life in the Universe

Basic Concepts in Quantum Mechanics

Animal Algorithms: Evolution and the Mysterious

Origin of Ingenious Instincts

The Origin of Life and Evolutionary Biochemistry

In Search of Cell History

The Emergence of Life

The Principles of Life

Cosmic Genetic Evolution

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Worlds in the Making

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What is Life? On Earth and Beyond
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*The Origin
Of Life*
Oparin

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NATALIE JAX

**The Origin of Life,
By A.I. Oparin.
Translation With
Annotations by
Sergius Morgulis**
University of Chicago
Press
How do some birds,
turtles, and insects

possess navigational
abilities that rival the
best manmade
navigational
technologies? Who or
what taught the honey
bee its dance, or its
hive mates how to read
the complex message
of the dance? How do
blind mound-building
termites master
passive heating and

cooling strategies that dazzle skilled human architects? In *The Origin of Species* Charles Darwin conceded that such instincts are "so wonderful" that the mystery of their origin would strike many "as a difficulty sufficient to overthrow my whole theory." In *Animal Algorithms*, Eric Cassell surveys recent evidence and concludes that the difficulty remains, and indeed, is a far more potent challenge to evolutionary theory than Darwin imagined. *The Origin of Life on the Earth* Oxford University Press

Genesis and Evolutionary Development of Life discusses the present state of thought on the origin and development of life.

The book contains six chapters and begins with a brief history of attempts to solve the problem of the origin of life. This is followed by separate chapters that discuss the following events: the initial stages in the evolution of carbon compounds; formation of the "primitive soup"; origin of prebiological systems; evolution of "protobionts" and the origin of the first organisms; and the further evolution of the first organisms.

Creating Life in the Lab
Oxford University Press, USA

The origins of life remains one of the great unsolved mysteries of science. Growing evidence suggests that the first organisms lived deep underground, in environments

previously thought to be uninhabitable, and that microbes carried inside rocks have travelled between Earth and Mars. But the question remains: how can life spring into being from non-living chemicals? THE FIFTH MIRACLE reveals the remarkable new theories and discoveries that seem set to transform our understanding of life's role in the unfolding drama of the cosmos. *The Emergence of Life on Earth* Cambridge University Press

How did life emerge on Earth? Is there life on other worlds? These questions, until recently confined to the pages of speculative essays and tabloid headlines, are now the subject of legitimate scientific research. This book

presents a unique perspective--a combined historical, scientific, and philosophical analysis, which does justice to the complex nature of the subject. The book's first part offers an overview of the main ideas on the origin of life as they developed from antiquity until the twentieth century. The second, more detailed part of the book examines contemporary theories and major debates within the origin-of-life scientific community. Topics include: Aristotle and the Greek atomists' conceptions of the organism Alexander Oparin and J.B.S. Haldane's 1920s breakthrough papers Possible life on Mars? Origins of Life Oxford University Press

This classic of

biochemistry offered the first detailed exposition of the theory that living tissue was preceded upon Earth by a long and gradual evolution of nitrogen and carbon compounds. "Easily the most scholarly authority on the question...it will be a landmark for discussion for a long time to come." — New York Times.

The Origin of Life

Springer Science & Business Media

This volume explores the questions and answers surrounding the 'secret of life', combining approaches from the sciences, philosophy and theology, including the emerging discipline of astrobiology.

The Origin of Life on the Earth. [@ .] A. I. Oparin,... 3rd... Edition.

Translated... by Ann Syngé Oxford

University Press

The origin of life from non-life remains one of the most enduring mysteries of modern science. This book investigates how close scientists are to solving that mystery and explores what we are learning about the origin of life from current research in chemistry, physics, astrobiology, biochemistry, and more.

The Origin of Life on the Earth Cambridge University Press

The origin of life from inanimate matter has been the focus of much research for decades, both experimentally and philosophically. Luisi takes the reader through the consecutive stages from prebiotic

chemistry to synthetic biology, uniquely combining both approaches. This book presents a systematic course discussing the successive stages of self-organisation, emergence, self-replication, autopoiesis, synthetic compartments and construction of cellular models, in order to demonstrate the spontaneous increase in complexity from inanimate matter to the first cellular life forms. A chapter is dedicated to each of these steps, using a number of synthetic and biological examples. With end-of-chapter review questions to aid reader comprehension, this book will appeal to graduate students and academics researching the origin of life and

related areas such as evolutionary biology, biochemistry, molecular biology, biophysics and natural sciences.

First Steps in the Origin of Life in the Universe

Rutgers University Press

In *Assembling Life*, David Deamer

addresses questions that are the cutting edge of research on the origin of life. For instance, how did non-living organic compounds assemble into the first forms of primitive cellular life? What was the source of those compounds and the energy that produced the first nucleic acids? Did life begin in the ocean or in fresh water on terrestrial land masses? Could life have begun on Mars? The book provides an

overview of conditions on the early Earth four billion years ago and explains why fresh water hot springs are a plausible alternative to salty seawater as a site where life can begin. Deamer describes his studies of organic compounds that were likely to be available in the prebiotic environment and the volcanic conditions that can drive chemical evolution toward the origin of life. The book is not exclusively Earth-centric, but instead considers whether life could begin elsewhere in our solar system. Deamer does not propose how life did begin, because we can never know that with certainty. Instead, his goal is to understand how life can begin on any habitable planet, with

Earth so far being the only known example. *Basic Concepts in Quantum Mechanics* Baker Books
From the primordial soup to meteorite impact zones, the Manhattan Project to the latest research, this book is the first full history of the scientists who strive to explain the genesis of life. How did life begin? Why are we here? These are some of the most profound questions we can ask. For almost a century, a small band of eccentric scientists has struggled to answer these questions and explain one of the greatest mysteries of all: how and why life began on Earth. There are many different proposals, and each idea has attracted passionate believers who promote it with an

almost religious fervor, as well as detractors who reject it with equal passion. But the quest to unravel life's genesis is not just a story of big ideas. It is also a compelling human story, rich in personalities, conflicts, and surprising twists and turns. Along the way, the journey takes in some of the greatest discoveries in modern biology, from evolution and cells to DNA and life's family tree. It is also a search whose end may finally be in sight. In *The Genesis Quest*, Michael Marshall shows how the quest to understand life's beginning is also a journey to discover the true nature of life, and by extension our place in the universe.

[Animal Algorithms: Evolution and the](#)

[Mysterious Origin of Ingenious Instincts](#)
Cambridge University Press

Publisher Description

The Origin of Life and Evolutionary Biochemistry Elsevier
This Very Short

Introduction presents a succinct and accessible guide to the key episodes in the story of life on earth - from the very origins of life four million years ago to the extraordinary diversity of species around the globe today.

In Search of Cell History Springer

Science & Business Media

How did life start? Is the evolution of life describable by any physics-like laws?

Stuart Kauffman's latest book offers an explanation-beyond what the laws of physics can explain-of

the progression from a complex chemical environment to molecular reproduction, metabolism and to early protocells, and further evolution to what we recognize as life. Among the estimated one hundred billion solar systems in the known universe, evolving life is surely abundant. That evolution is a process of "becoming" in each case. Since Newton, we have turned to physics to assess reality. But physics alone cannot tell us where we came from, how we arrived, and why our world has evolved past the point of unicellular organisms to an extremely complex biosphere. Building on concepts from his work as a complex systems researcher at the Santa

Fe Institute, Kauffman focuses in particular on the idea of cells constructing themselves and introduces concepts such as "constraint closure." Living systems are defined by the concept of "organization" which has not been focused on in enough in previous works. Cells are autopoietic systems that build themselves: they literally construct their own constraints on the release of energy into a few degrees of freedom that constitutes the very thermodynamic work by which they build their own self creating constraints. Living cells are "machines" that construct and assemble their own working parts. The emergence of such

systems-the origin of life problem-was probably a spontaneous phase transition to self-reproduction in complex enough prebiotic systems. The resulting protocells were capable of Darwin's heritable variation, hence open-ended evolution by natural selection. Evolution propagates this burgeoning organization. Evolving living creatures, by existing, create new niches into which yet further new creatures can emerge. If life is abundant in the universe, this self-constructing, propagating, exploding diversity takes us beyond physics to biospheres everywhere.

The Emergence of Life National

Academies Press
 This comprehensive history of cell evolution “deftly discusses the definition of life” as well as cellular organization, classification and more (San Francisco Book Review). The origin of cells remains one of the most fundamental mysteries in biology, one that has spawned a large body of research and debate over the past two decades. With *In Search of Cell History*, Franklin M. Harold offers a comprehensive, impartial take on that research and the controversies that keep the field in turmoil. Written in accessible language and complemented by a glossary for easy reference, this book examines the

relationship between cells and genes; the central role of bioenergetics in the origin of life; the status of the universal tree of life with its three stems and viral outliers; and the controversies surrounding the last universal common ancestor. Harold also discusses the evolution of cellular organization, the origin of complex cells, and the incorporation of symbiotic organelles. *In Search of Cell History* shows us just how far we have come in understanding cell evolution—and the evolution of life in general—and how far we still have to go. “Wonderful...A loving distillation of connections within the incredible diversity of life in the biosphere, framing one of

biology’s most important remaining questions: how did life begin?”—Nature
The Principles of Life
 Springer Science & Business Media
 In this text, Tibor Gánti develops three general arguments about the nature of life. He offers a set of reflections on the parameters of the problems to be solved in origins of life research and, more broadly, in the search for principles governing the living state in general.
Cosmic Genetic Evolution University of Chicago Press
 Analyzes three early theories explaining the origins of life on earth and expands his own biochemical explanation of the formation of living substances
Life: Its Nature, Origin,

and Development

Academic Press

This volume contains the lectures presented at the second course of the International School of Space Chemistry held in Erice (Sicily) from October 20 - 30 1991 at the "E. Majorana Centre for Scientific Culture". The course was attended by 58 participants from 13 countries. The Chemistry of Life's Origins is well recognized as one of the most critical subjects of modern chemistry. Much progress has been made since the amazingly perceptive contributions by Oparin some 70 years ago when he first outlined a possible series of steps starting from simple molecules to basic building blocks and ultimate assembly into

simple organisms capable of replicating, catalysis and evolution to higher organisms. The pioneering experiments of Stanley Miller demonstrated already forty years ago how easy it could have been to form the amino acids which are critical to living organisms. However we have since learned and are still learning a great deal more about the primitive conditions on earth which has led us to a rethinking of where and how the condition for prebiotic chemical processes occurred. We have also learned a great deal more about the molecular basis for life. For instance, the existence of DNA was just discovered forty years ago.

The Limits of Organic Life in Planetary

Systems Univ of California Press
 Each year brings to light new scientific discoveries that have the power to either test our faith or strengthen it--most recently the news that scientists have created artificial life forms in the laboratory. If humans can create life, what does that mean for the creation story found in Scripture? Biochemist and Christian apologist Fazale Rana, for one, isn't worried. In *Creating Life in the Lab*, he details the fascinating quest for synthetic life and argues convincingly that when scientists succeed in creating life in the lab, they will unwittingly undermine the evolutionary explanation for the origin of life, demonstrating instead

that undirected chemical processes cannot produce a living entity.

Problems of Cosmogony Courier Dover Publications
 Cosmic Genetic Evolution, Volume 106 in the *Advances in Genetics* series, highlights new advances in the field, with this new volume presenting interesting chapters on Panspermia, Cometary Panspermia and Origin of Life, The Efficient Lamarckian Spread of Life in the Cosmos, The Sociology of Science and Generality of the DNA/RNA/Protein Paradigm Throughout the Cosmos, The Mutagenic Source and Power of Our Own Evolution, Origin of New Emergent Coronavirus and Candida Fungal

Diseases – Terrestrial or Cosmic?, and Future Prospects for Investigation -The Near-Earth Neighborhood and Beyond. Provides the authority and expertise of leading contributors from an international board of authors
 Presents the latest release in the Advances in Genetics series Updated release includes the latest information on the Cosmic Genetic Evolution
Information Theory, Evolution, and the Origin of Life Jones & Bartlett Publishers
 The Origin of Life on the Earth covers the proceedings of the First International Symposium of The Origin of Life on the Earth, held at Moscow on August 19-24, 1957. This symposium brings

together numerous scientific studies on the evolutionary principles and the different stages in the evolutionary development of matter. This book is organized into seven parts encompassing 60 chapters. The first parts discuss evidence that on the formation of hydrocarbons and their derivatives on the surface of the Earth even before the emergence of life. The subsequent parts are devoted to the many asymmetrical syntheses under the influence of circularly-polarized ultraviolet light, by catalytic reactions occurring on the surface of quartz crystals, and spontaneously by slow crystallization from solutions. These topics are followed by reviews

on the possible means of abiogenic formation of amino acids, porphyrins, protein-like polymers, polynucleotides and other high-molecular organic compounds. Considerable chapters explore the complete possibility of the primary formation of these compounds on the surface of the Earth even before life

was present on it. Other general topics covered include nucleic acids, nucleoproteins and viruses. The last part considers general biochemical problems connected with the further development of metabolism. This book will be of value to astronomers, physicists, geologists, chemists, and biologists.