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The Vital Question: Energy, Evolution, and the Origins of Complex Life

Nick Lane

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To explain the mystery of how life evolved on Earth, Nick Lane explores the deep link between energy and genes.

The Earth teems with life: in its oceans, forests, skies and cities. Yet there's a black hole at the heart of biology. We do not know why complex life is the way it is, or, for that matter, how life first began. In *The Vital Question*, award-winning author and biochemist Nick Lane radically reframes evolutionary history, putting forward a solution to conundrums that have puzzled generations of scientists.

For two and a half billion years, from the very origins of life, single-celled organisms such as bacteria evolved without changing their basic form. Then, on just one occasion in four billion years, they made the jump to complexity. All complex life, from mushrooms to man, shares puzzling features, such as sex, which are unknown in bacteria. How and why did this radical transformation happen?

The answer, Lane argues, lies in energy: all life on Earth lives off a voltage with the strength of a lightning bolt. Building on the pillars of evolutionary theory, Lane's hypothesis draws on cutting-edge research into the link between energy and cell biology, in order to deliver a compelling account of evolution from the very origins of life to the emergence of multicellular organisms, while offering deep insights into our own lives and deaths.

Both rigorous and enchanting, *The Vital Question* provides a solution to life's vital question: why are we as we are, and indeed, why are we here at all?

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