

John S. Compton

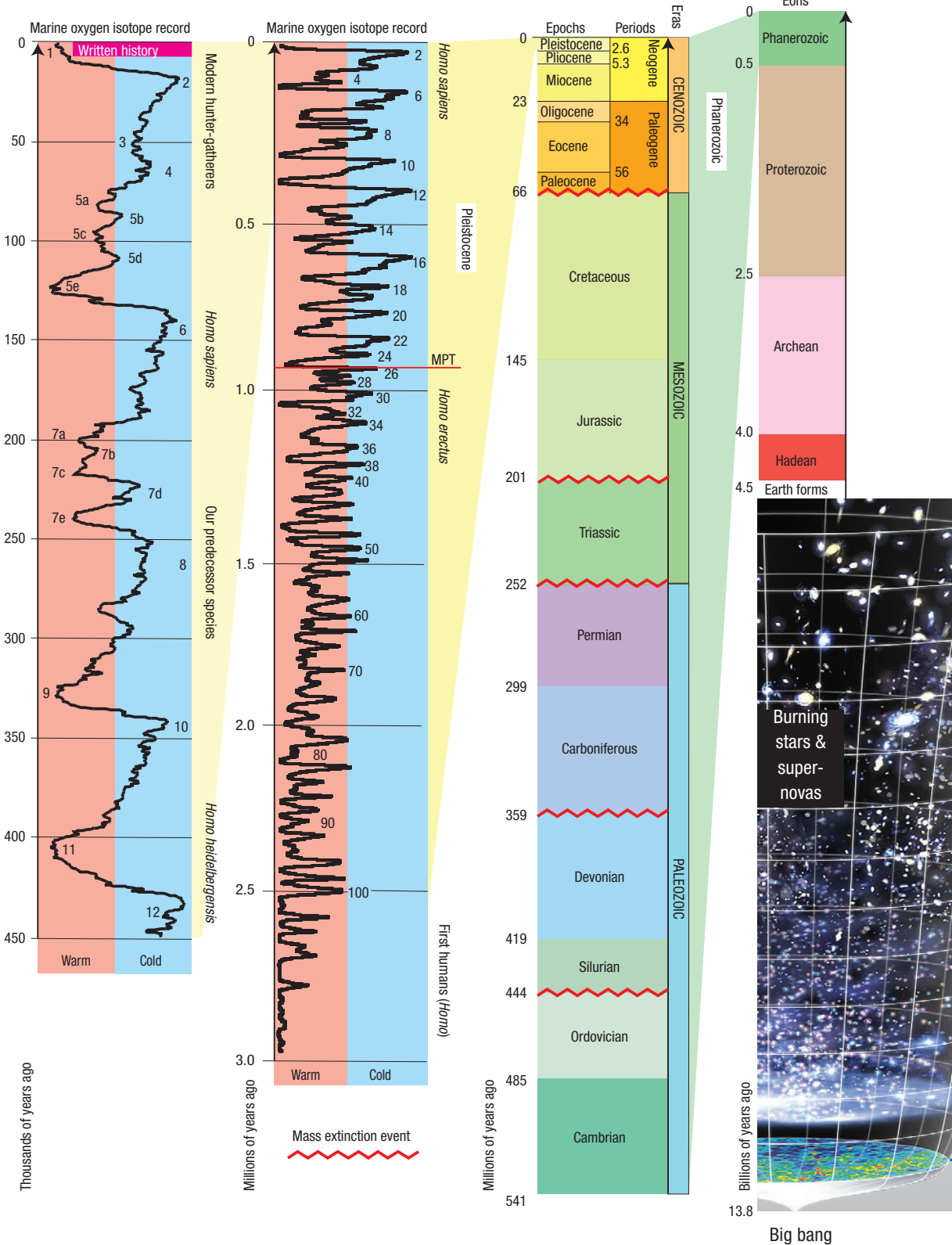
New
Perspectives
from Southern
Africa

HUMAN ORIGINS



How diet, climate and landscape shaped us

Deep (geological) timescale



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How diet, climate and landscape shaped us

John S. Compton



**To all those who came before,
and most especially my parents**



First published 2016

by Earthspun Books

1B Achilles Way, Pinelands 7405

Cape Town, South Africa

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ISBN 978-0-620-69605-0 (print, illustrated)

ISBN 978-0-620-69604-3 (pdf, illustrated)

ISBN 978-0-620-69603-6 (epub, text only)

Copy-edited by Alison Paulin

Printed by Tandym, Epping, Cape Town

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Preface

Men [and women] need history; it helps them to have an idea of who they are.

V.S. Naipaul, *The Enigma of Arrival*

We forget most of our past but embody all of it.

John Updike, Introduction to *Rabbit Angstrom*

Most of us are curious about where we come from, not only in terms of the immediate question of ‘Who’s your daddy?’ or in the assembly of a family tree, but also in relation to our far more distant, ancestral origins. One of the unique, defining traits of being human is our need for history, not just written history but history in its deepest sense. This book explores our ‘big history’ – from the earliest origins of life on Earth, to where and how the events may have played out leading up to where we find ourselves today on a planet inhabited by 7-plus billion people.

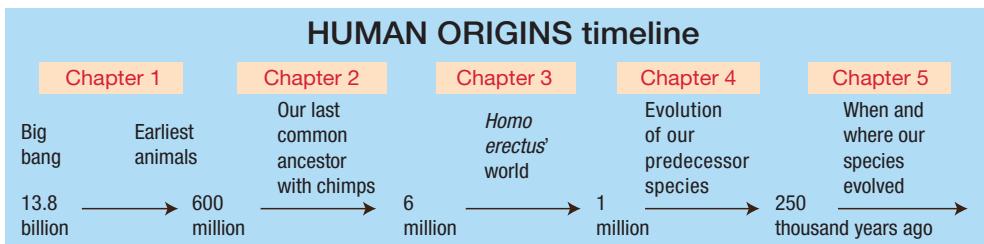
Practically every week the popular press reports on the latest evidence of human evolution – when humans first used fire, made jewellery, spread beyond Africa and mated with Neanderthals. In large part this reflects amazing new discoveries from archaeological sites of the remains of our ancestors and the artefacts they made. But it also reflects entirely new perspectives from the study of human and fossil DNA. These studies reveal ancestors previously unrecognised in the archaeological record, as well as the extent to which we intermingled with our ancestors before they went extinct, leaving us the sole surviving human species. Ocean, lake and ice-core records provide information on the landscapes and habitats in which our ancestors lived, the

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variations in climate they had to contend with and how these may have influenced our evolution. And most critically, the timing of past events can now be determined more accurately than ever before.

I was curious about how the latest advances from seemingly disparate, diverse disciplines might all fit together in a plausible telling of the story of our origins. For the telling of stories is another uniquely modern human trait, in many ways tied to our need for history. As with any story, timing is everything. And because so much depends on what came before, the story told here starts with the big bang and moves forward to the present. The focus is on the last 1 million years, with everything that came before telescoped into the first three chapters and everything since farming (the last 10 thousand years) telescoped into the penultimate chapter. The final chapter considers past trends and future projections. I've seen succinct cinematic versions of this story, and I once read a 4-page summary of our origins from the big bang to now. Going from 4 to 400 pages allows for a far more detailed telling of our story, but it is still far too short to go beyond capturing the major events and concepts. And because the literature detailing the many bits of hard scientific evidence is so vast, only the most relevant and recent sources are provided for those readers wishing to delve more deeply.

In addition to the timing, the spatial or geographic distribution of past events is also coming into better focus. We evolved in Africa, but Africa is a massive continent with a rich diversity of landscapes and habitats ranging from the central rainforests, the eastern Rift Valley lakes and highlands, and the savannahs of southern Africa. Place matters, and recent archaeological discoveries reveal the importance of regions located at the far northern and southern tips of Africa. For example, engraved shell and stone, shell jewellery and heat-treated stone tools recovered from caves along the southern coast of South Africa represent some of the earliest evidence of modern behaviours, such as abstract thought, self-awareness and problem solving. More than simply reflecting a fluke of preservation, these artefacts suggest that the evolution of

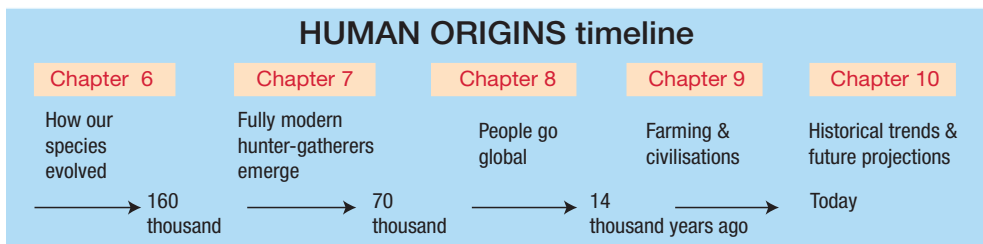


fully modern humans may have occurred at the southern tip of Africa.

A better understanding of when and where allows us to start to think about how and why events happened in the past. For example, the northern and southern tips of Africa may have provided periodic, isolated refugia – places where groups could take refuge during large climate swings of the past. These refugia were influenced by changes in the landscape as the sea periodically rose and fell in sync with major climate cycles to submerge or expose large tracts of land. It was while holed up in such refugia that groups may have been forced to adopt new behaviours and diets, such as eating seafood or developing more effective hunting weapons. In this way, intervals during which groups were isolated in Africa may relate to major events in human evolution.

Most of us are creatures of habit, conservative and comfortable with the way things are. We do not care for sudden or large changes that force us to alter our way of life – hence our aversion to scenarios of global climate change. The challenges we currently face associated with global warming are huge. But climate was far more variable prior to the relatively stable climates of the last 10 thousand years during which human civilisations flourished. Imagine changes as large as or greater than those anticipated in the next century without all of our technological advantages; this is what our ancestors had to deal with repeatedly over the last million years. These past climate fluctuations were probably critical in ultimately driving the evolution of our species. But the specifics of how, where and when these climatic fluctuations unfolded and our evolutionary responses to them are far less clear, and are open to debate.

Here, the record of human evolution as revealed by archaeology and genetics is compared to the records of past climate fluctuations to construct plausible or most likely scenarios to explain past events in our evolution. The proposed scenarios are derived from a blend of my own and other people’s ideas. Some readers will undoubtedly take issue with some of the scenarios proposed, especially considering our limited knowledge of the past. While there is no question that much of our story is unknown and uncertain, such scenarios, even if highly speculative, provide a useful starting



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point. Our tendency to speculate, in which our minds make inferences that go far beyond the information available, appears to be yet another of our distinctly human traits – one that serves us as well today as it likely did in the past.

Some may view the story presented here as simply the latest among many creation myths or stories of how we came to be. But the story told here is not prophetic, nor does it invoke divine creation. Rather it is based on what we can observe and date applying the scientific method. The story is deciphered from ancient artefacts, bones and fossil DNA, which together with other evidence provide brief, fragmentary glimpses into a past uniquely fixed and irreversible. These sources are in many ways less biased and more reliable than written history or eyewitness accounts of recent events. And yet, how the scientific evidence is interpreted in terms of our evolution has always been highly contentious. The discovery of more archaeological sites, the refined dating of events and a better understanding of our biology will undoubtedly transform our story to be as different 150 years from now as it was 150 years ago when Darwin published his book *Origin of Species*.

There are so many features of our world that are not immediately obvious and which can appear counterintuitive. The world appears flat until more distant perspectives reveal its round shape. The Sun appears to traverse an immovable sky, when in fact Earth spins on an axis at hundreds of kilometres per hour. We appear to be a distinctly unique life form, but in fact we share with all life forms on Earth a common distant ancestor and DNA that varies surprisingly little despite the many outward differences. Whatever your current beliefs or perspectives on human origins might be, this book will provide you with some new ones to ponder. In thinking about how past events shaped us, we may come to learn more about what it means to be human and gain a better understanding of our place in the world and our increasingly large impact upon it.

