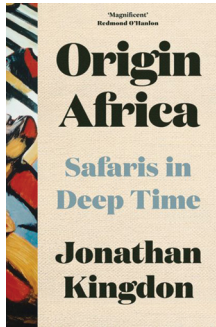




Jonathan Kingdon treats nature lovers to the varied beauty of Africa's fauna

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What an absolute delight to read someone with a most curious mind and to share his joy for the variety of plant and animal life on his own continent, “the sense-igniting mother-continent” and “the birthplace of all humanity”, Africa. How very fortunate Jonathan Kingdon was told early in life that “questions are more important than answers”. His infectious ecstasy is revealed by the statement that life, “even within a single hectare of African forest”, is beyond the imaginings of a science-fiction writer! Kingdon aimed at helping those with outdated and primitive mindsets who view Africa negatively and to assuage his own despair at humanity’s disinterest and rejection of the science of our shared origins in Africa.¹⁻⁴ My long-held view that biology should and must be taught outside the classroom is affirmed on every page of this unputdownable book, with its beautiful sketches and illustrations, several by the author’s mother. And when it comes to the birth of primates, this work aptly complements many previous works.^{3,4}

Africa (‘the dark continent’) hardly ever receives good press in socio-economic and political spheres; but proud Africans would share Kingdon’s view that ours is a misrepresented, dehumanised and abused continent. Kingdon has written a paean to the theory of evolution and natural selection⁵ – the understanding of which helps us make sense of the diversity of life. However, whilst it is written in a manner for both the specialist and general reader, the latter may become overwhelmed by the volume of material, describing hundreds of species on our continent. The book is a celebration of the biodiversity in the song of the birds, the sonic boom of the whale, the vibration of every insect, feather or vocal cord, the smell of birth and death and of the flowers, which are flung at Kingdon’s every sense, for his and the reader’s delight. And then there is the sadness of the humiliation of Africans caused by colonisation and the slave trade, the exploitation of our plant, animal and human resources, the threat to and extinction of many species, together with droughts, poverty, poaching and post-colonial governmental corruption. African dictatorships are vulnerable to exploitation by huge powers in the Global North.

For some context, we are taken to Pangaea, the ‘supercontinent mother’ of continents, its fracture 300 million years ago, the continual movement of land masses from each other (Wegener’s drift), and, for our interest, the birth of the African continent.

Interestingly, lungfish, killifish and frogs are older than the earth’s continents. The earth is 4.5 billion years old, and the first unicellular bacteria and archaea appeared 4 billion years ago, whilst the ancestor of the human cell is approximately 2 billion years old.⁶ Of significance for humans and their ancestors was the crash to earth of a 10-km-wide, iridium-loaded meteor (Chicxulub), in the region of the Yucatan Peninsula and the Caribbean Sea. This was the period of the C(K)retaceous-Tertiary (K-T) boundary, 66 million years ago, that caused the extinction of the dinosaurs and left the smaller and hardy animals, ‘shrew-like lineages’, and hibernating genera to evolve into carnivores and primates.⁷ In Africa, following this crash, all surviving mammals are labelled ‘afrotheres’. This is our ancestry and, rather than it being a moment of creation, Kingdon sees it as a moment of release for these “holocaust’s survivors”.

Kingdon has a message for those who claim that the world is determined^{8,9} and we humans have no free will. The appearance of primates on our planet is a consequence of the meteor strike during the K-T boundary period, and scientists and philosophers need to appreciate evolution as a response to both chance accidents and regular predictabilities of existence, including migrations of people, cultures and epidemics. Our very existence depends on plants, and yet, we humans, in this age of the Anthropocene, care little about our warming planet. We ignore oral histories and knowledge to our peril. We have a golden opportunity to save our planet¹⁰, having the aptitude and the tools to understand the processes that generate the biodiversity around us. In this light, there is an urgent need for systemic research such as the ‘Frontier Tanzania’ programme, Africa’s most significant multi-partner scientific enterprise and a wonderful model of what is needed in the rest of Africa and the world.

Kingdon brings us closer to our hominid and hominin family members with a description of *Proconsul africanus*, an 18-million-year-old dental ape, a complete skeleton of which was unearthed by Mary Leakey on the Lake Victoria Island of Rusinga. The very same Mary Leakey gave us the 3.6-million-year-old Laetoli footprints of *Australopithecus afarensis* (near Tanzania’s Olduvai Gorge), preserved in the hardened ash of volcanic material.¹¹ Kingdon has nailed his colours to the mast by declaring that the “grand spectacle of evolution hangs on the emancipation of hands”, rather than the advent of bipedalism or uprightiness.⁷ However, the birth of bipedalism is covered (with descriptions of a skull in Chad, *Sahelanthropus*, 10.5 million years ago) and so is our divergence from our ape ancestors 6 million years ago (with the finding of *Orrorin tugenensis* and *Ardipithecus ramidus* (5.8 million years old), in the Afar region of Ethiopia. Speciation happened in shifting major vegetation zones with oscillating climates and genetic drift. Adaptation to different climes by primates has been amazing. The history of our evolution has been characterised by so many competing species amongst the *Australopithecus* and *Homo* genera, leaving scientists to grapple with our direct line of ancestry.^{2,4,12} Suffice to say that *Homo sapiens* is 300 000 years old, and, approximately 70 000 years ago, our ancestors migrated out of Africa and colonised the world.⁷

What has been disappointing in this otherwise brilliant history, is the absence of the significant discovery of the skull of Taung Child (*Australopithecus africanus*) in 1924 (the ‘missing link’) and Raymond Dart’s battles to have it acknowledged by European scientists (how can humans have originated in Africa?).⁴ Then there was the insult of the Piltdown forgery¹³ and, while mention is made of one of our most exciting finds of ‘Little Foot’ (*Australopithecus prometheus*), the contributions of Phillip Tobias, Ron Clarke, Stephen Motsumi and Nkwane Molefe are not covered³. In Ethiopia, the discovery of Lucy (*Australopithecus afarensis*) shook the world, and the implications of her discovery are mentioned by Johanson¹⁴.

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Origin Africa should be distributed to every biology teacher in our schools. The question the reader is left with is whether we have lost our connection with nature in our modern way of living? Kingdon offers us (especially the youth) the possibility of shifting our attention from the modern celebrity culture to the awe and wonders of this world.

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