GREAT NATURAL HISTORY BOOKS AND THEIR CREATORS pdf

1: The greatest non-fiction books | Books | The Guardian

Amongst the greatest books every created are the large-scale works of natural history researched and written by apothecaries, scientists and others for whom the study of the natural world was a consuming passion.

Prior to its publication, the prevailing view was that each species had existed in its current form since the moment of divine creation and that humans were a privileged form of life, above and apart from nature. Wary of a religious backlash, he kept his ideas secret for almost two decades while bolstering them with additional observations and experiments. The result is an avalanche of detailâ€”there seems to be no species he did not contemplateâ€”thankfully delivered in accessible, conversational prose. Darwin revolutionized our understanding of life, the relationship of humanity to all creatures in the world, and the mythological foundation of all religions. Silver, Princeton University 3. Philosophiae Naturalis Principia Mathematica Mathematical Principles of Natural Philosophy by Isaac Newton Dramatic is an unlikely word for a book that devotes half its pages to deconstructions of ellipses, parabolas, and tangents. Yet the cognitive power on display here can trigger chills. Principia marks the dawn of modern physics, beginning with the familiar three laws of motion "To every action there is always opposed an equal reaction" is the third. Later Newton explains the eccentric paths of comets, notes the similarity between sound waves and ripples on a pond, and makes his famous case that gravity guides the orbit of the moon as surely as it defines the arc of a tossed pebble. The text is dry but accessible to anyone with a high school educationâ€”an opportunity to commune with perhaps the top genius in the history of science. I mean how amazing is it that this guy was able to figure out that the same force that lets a bird poop on your head governs the motions of planets in the heavens? That is towering genius, no? Friedman, Cornell University 4. Galileo responded with this cheeky conversation between three characters: This last oneâ€”a dull thinker named Simplicioâ€”represented the church position, and Galileo was soon standing before the Inquisition. Galileo comes across as a masterful raconteur; his discussions of recent astronomical findings in particular evoke an electrifying sense of discovery. The last section, in which he erroneously argues that ocean tides prove Earth is in motion, is fascinatingly shoddy by comparison. Copernicus, by arguing that Earth and the other planets move around the sun rather than everything revolving around Earth , sparked a revolution in which scientific thought first dared to depart from religious dogma. While no longer forbidden, De Revolutionibus is hardly user-friendly. Physica Physics by Aristotle circa B. By contrast, Aristotle placed Earth firmly at the center of the cosmos, and viewed the universe as a neat set of nested spheres. He also mistakenly concluded that things move differently on Earth and in the heavens. You cannot overestimate his influence on the West and the world. For centuries, anatomists had dissected the human body according to instructions spelled out by ancient Greek texts. Time and space, he showed, are not absolutes. A moving yardstick shrinks in flight; a clock mounted on that yardstick runs slow. Relativity, written for those not acquainted with the underlying math, reveals Einstein as a skillful popularizer of his ideas. To explain the special theory of relativity, Einstein invites us on board a train filled with rulers and clocks; for the more complex general theory, we career in a cosmic elevator through empty space. As Einstein warns in his preface, however, the book does demand "a fair amount of patience and force of will on the part of the reader. The Selfish Gene by Richard Dawkins In this enduring popularization of evolutionary biology, Dawkins argues that our genes do not exist to perpetuate us; instead, we are useful machines that serve to perpetuate them. So is a related notion: Infinity by George Gamow Illustrating these tales with his own charming sketches, renowned Russian-born physicist Gamow covers the gamut of science from the Big Bang to the curvature of space and the amount of mysterious genetic material in our bodies DNA had not yet been described. No one can read this book and conclude that science is dull. Who but a physicist would analyze the atomic constituents of genetic material and calculate how much all that material, if extracted from every cell in your body, would weigh? The answer is less than two ounces. Krauss, Case Western Reserve University The Double Helix by James D. The Double Helix takes us inside a pell-mell race whose winners were almost guaranteed fame and a Nobel Prize. Her X-ray crystallography images showed the molecule to be a helix, crucial data that Watson and his collaborator Francis Crick "borrowed" to construct their DNA model.

Franklin died of ovarian cancer in , losing out on the Nobel Prize for the discovery. Perhaps to atone, Watson noted her key contribution in the epilogue to his book. The Cosmic Connection by Carl Sagan At a time when NASA was reeling from the end of the Apollo program, Sagan reacquainted both the public and his colleagues with the majesty of the universe, starting with the oft-overlooked worlds of our own solar system. He also championed the search for extraterrestrial life and argued for the likelihood of planets around other stars two decades before they were discovered. The TV series Cosmos brought Sagan to the masses, but the adventure began here. The Insect Societies by Edward O. It also lays the groundwork for his classic, Sociobiology: The New Synthesis, which explores the then-controversial idea that the social behavior of animals, including humans, has a deep biological basis. Wilson openly acknowledges the quirkiness of his obsession; the dedication reads, "For my wife Irene, who understands. The First Three Minutes by Steven Weinberg When Weinberg was a student, "the study of the early universe was widely regarded as not the sort of thing to which a respectable scientist would devote his time. A afterword discusses more recent advances. Amazingly, only the description of the first fraction of a second of cosmic history has changed significantly. Silent Spring by Rachel Carson When Silent Spring was first published, a chorus of critics called Carson "hysterical" and "extremist. Carson argues that DDT not only indiscriminately kills insects, including beneficial species like bees, but also accumulates in the fat of birds and mammals high on the food chain, thinning eggshells and causing reproductive problems. Her chilling vision of a birdless America is still haunting. For hundreds of years, Gould argues, questionable measurements of human intelligence, like skull size or IQ, have been used to justify racism, sexism, and class stratification. According to Gould, even respected sociologists and psychologists have used falsified or shaky data to support the belief that Westerners are genetically predisposed to rule the world. The book drew political and scientific criticism, especially from social scientists furious that Gould had oversimplified or demonized their work. The Man Who Mistook His Wife for a Hat and Other Clinical Tales by Oliver Sacks In these profiles of patients with unusual neurological disorders, Sacks revolutionizes the centuries-old literary tradition of presenting clinical case studies. Far from dryly reporting each case, the eminent British-born New York City neurologist writes in lively prose with the gentle affection of a country doctor on house call and a contagious sense of wonder. Legions of neuroscientists now probing the mysteries of the human brain cite this book as their greatest inspiration. Meriwether Lewis joined the group two days later. The Journals, a meticulous chronicle of their expedition, offer an unprecedented glimpse at unexplored, undeveloped America west of the Mississippi. A complete copy of the Journals and their companion material is heavy reading the definitive Nebraska edition has 13 volumes , but an abridged version captures all the adventure in a palatably sized package. Leighton, and Matthew Sands Not only did physicist Richard Feynman win the Nobel Prize for his work on quantum electrodynamics, he once played bongos for a San Francisco ballet. The first 94 lectures cover a wide swath of basic physics, from Newtonian mechanics to electromagnetism, while the final 21 venture into quantum mechanics. Friedman, Cornell University With raw, technical descriptions of sexual acts, distilled from thousands of interviews, it documented for the first time what people really do behind closed doors. Many researchers consider the book flawed because of its sampling bias: Most of the men interviewed were young, white, and eager to participate. Nevertheless, the work remains an outstanding model of scientific bravery in the 20th century, with its insistence that sexual acts be described as healthy functions of the human body and that cultural taboos not stand in the way of science. Gorillas in the Mist by Dian Fossey In a richly hued portrait of the lives and behavior of African mountain gorillas, Fossey documents her 13 years dwelling in a remote rain forest amid these enigmatic animals. In Gorillas she leaves behind a scientific treasure, one rendered more poignant by her death in the service of these peaceful, intelligent beasts. Under a Lucky Star by Roy Chapman Andrews Roy Chapman Andrews made scientific history during the s by leading five motorized expeditions into unexplored reaches of the Gobi desert. He emerged with the equivalent of paleontological gold: He packed out plenty of wild tales, too, which are woven into this engaging autobiography. Micrographia by Robert Hooke A revelation in its time, Micrographia exposed the previously hidden microscopic world. Hooke, an early developer of the compound microscope, used his device to peer at the eyes of flies, the stinger on a bee, hairs, bristles, sand particles, seeds, and more, noting every detail with both words and masterful illustrations. The

original book is a hefty three pounds, so the digital versions now available are more convenient, but there is something to be said for flipping through a printed copy and discovering, like a hidden treasure, each drawing in its beautiful intricacy. Gaia by James Lovelock As an inventor of scientific instruments, James Lovelock may seem an unlikely figure to have launched a New Age, earth-mother environmental movement. A New Look at Life on Earth.

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2: Action Record - Great natural history books and their creators

Amongst the greatest books every created are the large-scale works of natural history researched and written by apothecaries, scientists and others for whom the study of the natural world was a consuming passion. Behind each book there is a story to tell - how and why the volume was created, the.

In the Islamic Golden Age of the 8th to the 13th centuries, philosophers explored ideas about natural history. These ideas included transmutation from non-living to living: Conway Zirkle , writing about the history of natural selection in , said that an excerpt from this work was the only relevant passage he had found from an Arabian scholar. He provided a quotation describing the struggle for existence, citing a Spanish translation of this work: Strong animals cannot escape being devoured by other animals stronger than they. And in this respect, men do not differ from animals, some with respect to others, although they do not arrive at the same extremes. In short, God has disposed some human beings as a cause of life for others, and likewise, he has disposed the latter as a cause of the death of the former. It shows nexuses between causes and things caused, combinations of some parts of creation with others, and transformations of some existent things into others, in a pattern that is both remarkable and endless. The essences at the end of each particular stage of the worlds are by nature prepared to be transformed into the essence adjacent to them, either above or below them. This is the case with the simple material elements; it is the case with palms and vines, which constitute the last stage of plants, in their relation to snails and shellfish, which constitute the lowest stage of animals. It is also the case with monkeys, creatures combining in themselves cleverness and perception, in their relation to man, the being who has the ability to think and to reflect. The preparedness for transformation that exists on either side, at each stage of the worlds, is meant when we speak about their connection. Great chain of being and Natural theology Drawing of the great chain of being from Rhetorica Christiana English: However, contact with the Islamic world , where Greek manuscripts were preserved and expanded, soon led to a massive spate of Latin translations in the 12th century. Europeans were re-introduced to the works of Plato and Aristotle, as well as to Islamic thought. As the universe was ultimately perfect, the great chain of being was also perfect. There were no empty links in the chain, and no link was represented by more than one species. Therefore, no species could ever move from one position to another. For humans to forget their position was seen as sinful, whether they behaved like lower animals or aspired to a higher station than was given them by their Creator. It formed a part of the argument from design presented by natural theology. As a classification system, it became the major organizing principle and foundation of the emerging science of biology in the 17th and 18th centuries. Thomas Aquinas While Christian theologians held that the natural world was part of an unchanging designed hierarchy, some theologians speculated that the world might have developed through natural processes. Thomas Aquinas went even farther than Augustine of Hippo in arguing that scriptural texts like Genesis should not be interpreted in a literal way that conflicted with or constrained what natural philosophers learned about the workings of the natural world. Aquinas rather held that: It is as if the shipbuilder were able to give to timbers that by which they would move themselves to take the form of a ship. He wrote of natural modifications occurring during reproduction and accumulating over the course of many generations, producing races and even new species, a description that anticipated in general terms the concept of natural selection. In the late 17th century, Ray had given the first formal definition of a biological species, which he described as being characterized by essential unchanging features, and stated the seed of one species could never give rise to another. The term gradually gained a more general meaning of growth or progressive development. For example, he believed that lions, tigers, leopards and house cats might all have a common ancestor. He further speculated that the or so species of mammals then known might have descended from as few as 38 original animal forms. History of paleontology In , Georges Cuvier published his findings on the differences between living elephants and those found in the fossil record. His analysis identified mammoths and mastodons as distinct species, different from any living animal, and effectively ended a long-running debate over whether a species could become extinct. Independently, in , Cuvier and Alexandre Brongniart published an influential study of the geologic history of the region around Paris, based on the stratigraphic

succession of rock layers. These works helped establish the antiquity of the Earth. Knowledge of the fossil record continued to advance rapidly during the first few decades of the 19th century. By the s, the outlines of the geologic timescale were becoming clear, and in John Phillips named three major eras, based on the predominant fauna of each: This progressive picture of the history of life was accepted even by conservative English geologists like Adam Sedgwick and William Buckland ; however, like Cuvier, they attributed the progression to repeated catastrophic episodes of extinction followed by new episodes of creation. Lyell claimed that, rather than being the products of cataclysmic and possibly supernatural events, the geologic features of the Earth are better explained as the result of the same gradual geologic forces observable in the present dayâ€”but acting over immensely long periods of time. Although Lyell opposed evolutionary ideas even questioning the consensus that the fossil record demonstrates a true progression , his concept that the Earth was shaped by forces working gradually over an extended period, and the immense age of the Earth assumed by his theories, would strongly influence future evolutionary thinkers such as Charles Darwin. Lamarck did not believe that all living things shared a common ancestor but rather that simple forms of life were created continuously by spontaneous generation. He also believed that an innate life force drove species to become more complex over time, advancing up a linear ladder of complexity that was related to the great chain of being. Lamarck recognized that species adapted to their environment. He explained this by saying that the same innate force driving increasing complexity caused the organs of an animal or a plant to change based on the use or disuse of those organs, just as exercise affects muscles. He argued that these changes would be inherited by the next generation and produce slow adaptation to the environment. It was this secondary mechanism of adaptation through the inheritance of acquired characteristics that would become known as Lamarckism and would influence discussions of evolution into the 20th century. Grant became an authority on the anatomy and reproduction of marine invertebrates. As a young student, Charles Darwin joined Grant in investigations of the life cycle of marine animals. In , an anonymous paper, probably written by Robert Jameson , praised Lamarck for explaining how higher animals had "evolved" from the simplest worms; this was the first use of the word "evolved" in a modern sense. In , the Scottish publisher Robert Chambers anonymously published an extremely controversial but widely read book entitled Vestiges of the Natural History of Creation. This book proposed an evolutionary scenario for the origins of the Solar System and of life on Earth. It claimed that the fossil record showed a progressive ascent of animals, with current animals branching off a main line that leads progressively to humanity. It implied that the transmutations lead to the unfolding of a preordained plan that had been woven into the laws that governed the universe. In this sense it was less completely materialistic than the ideas of radicals like Grant, but its implication that humans were only the last step in the ascent of animal life incensed many conservative thinkers. Cuvier attacked the ideas of Lamarck and Geoffroy, agreeing with Aristotle that species were immutable. Cuvier believed that the individual parts of an animal were too closely correlated with one another to allow for one part of the anatomy to change in isolation from the others, and argued that the fossil record showed patterns of catastrophic extinctions followed by repopulation, rather than gradual change over time. He also noted that drawings of animals and animal mummies from Egypt , which were thousands of years old, showed no signs of change when compared with modern animals. They believed that relationships between species could be discerned from developmental patterns in embryology, as well as in the fossil record, but that these relationships represented an underlying pattern of divine thought, with progressive creation leading to increasing complexity and culminating in humanity. Owen developed the idea of "archetypes" in the Divine mind that would produce a sequence of species related by anatomical homologies, such as vertebrate limbs. Owen led a public campaign that successfully marginalized Grant in the scientific community. Darwin would make good use of the homologies analyzed by Owen in his own theory, but the harsh treatment of Grant, and the controversy surrounding Vestiges, showed him the need to ensure that his own ideas were scientifically sound. For example, Loren Eiseley has found isolated passages written by Buffon suggesting he was almost ready to piece together a theory of natural selection, but states that such anticipations should not be taken out of the full context of the writings or of cultural values of the time which made Darwinian ideas of evolution unthinkable.

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3: History of evolutionary thought - Wikipedia

Keynote Points- Behind-the-scene stories of how these rare books were created- Sixty-nine color illustrations many reproduced from original copies in The British Library and other major cities- Ray Desmond has written more than 20 books on the history of natural history.

The war in Washington will not end until the presidency of Donald Trump ends. Everyone seems to sense that now. This is a fight to the finish. With the forced resignation of Attorney General Jeff Sessions and his replacement by his chief of staff, Matthew Whitaker, the long-anticipated confrontation with Robert Mueller appears at hand. Whitaker has definitely not. Before joining Justice, he said that the Mueller probe was overreaching, going places it had no authority to go, and that it could be leashed by a new attorney general and starved of funds until it passes away. Whitaker was not chosen to be merely a place holder until a new AG is confirmed. He was picked so he can get the job done. It is past time for Mueller to prove these charges or concede he has a busted flush, wrap up his investigation and go home. And now, in T. It detests the man the American people chose to lead their country and thus wants to use its political and cultural power to effect his removal. One reporter berated the president and refused to surrender the microphone. Others shouted support for his antics. Freedom of the press does not mean guaranteed immunity of the press from the same kind of abuse the press directs at the president. Kennedy was beloved by the media elite. Some journalists have become Trump haters with press passes. And Trump is right to speak truth to mainstream media power and to accord to the chronically hostile press the same access to the White House to which Robert De Niro is entitled. Pelosi appears the favorite to return as speaker of the House. But she may find her coming days in the post she loves to be less-than-happy times. Some of her incoming committee chairs â€” namely, Adam Schiff, Maxine Waters and Elijah Cummings â€” seem less interested in legislative compromises than in rummaging through White House files for documents to damage the president, starting with his tax returns. To a world watching with fascination this death struggle convulsing our capital, one wonders how attractive American democracy appears. And just how much division can this democracy stand? Half his supporters, she said, are a "basket of deplorables" who are "racist, sexist, homophobic, xenophobic, Islamophobic â€” you name it. How can the left "unite" with people like that? Why should the left not try to drive such "racists" out of power by any means necessary? This is the thinking that bred antifa. As for those on the right â€” as they watch the left disparage the old heroes, tear down their monuments, purge Christianity from their public schools â€” they have come to conclude that their enemies are at root anti-Christian and anti-American. How do we unify a nation where the opposing camps believe this? What the Trump-establishment war is about is the soul of America, a war in which a compromise on principle can be seen as a betrayal.

4: Welcome to Pemberley Books - Specialist Natural History Booksellers

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6: One North Star â€” University of Minnesota Press

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7: Books & Products | National Museum of the American Indian

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