

Preface

Famous First Facts About the Environment was developed along the framework of the *Famous First Facts* series, first published by H.W. Wilson in 1933. Since then, Famous First Facts became solidly established as an international reference for “firsts” in the history of diverse fields. In the case of *Famous First Facts About the Environment*, the book reflects the vast range of applications of the environment worldwide; the facts cover events in a wide array of disciplines, such as agriculture, art and culture, demographics, history, law, politics, technology, the sciences, warfare, and much more. As such, what differentiates *Famous First Facts About the Environment* from other worthy environmental works is precisely its scope, rarely found in other reference works on the topic.

Lately, environmental issues have occupied a salient position in the media due to growing international concern about climate change. The environment, however, has always been important to societies around the world; from the ancient Sumerians and Greeks to the Mayas and many other agriculture-based societies throughout history; to the Renaissance and the moderns, humans have been aware, one way or another, of the importance of the environment. This is reflected to date in the growing number of environmental movements, as well as the search for more efficient and environmentally friendly ways to produce food, housing, and energy, by a great number of groups, organizations, and industries.

In fact, many things have occurred in the world since the last update to this book—and at an accelerated pace. These include changes to the state of the Earth's climate, such as measurable increases in global temperature, sea level rise, weather extremes, and a significant population growth. There have also been some positive advances, such as the repair of the ozone layer at a faster rate than previously thought. Other advances have included a better understanding of the importance of citizen and indigenous

groups in environmental issues, such as areas of conservation and legislation, as well as advances in the application of sophisticated satellite and artificial intelligence (AI) technologies in environmental industries.

One of the most important historic facts to have occurred in the 21st century was the unexpected appearance of the COVID-19 pandemic, which led to lockdowns around the globe, economic turmoil, and millions of casualties worldwide. The full impact of the pandemic will not be entirely understood for years to come, as its exponential effects—environmental, economic, and human—continue to be discovered. It is now known, however, that the coronavirus pandemic was interrelated with current environmental issues. For instance, among the most salient environmental effects of the years-long pandemic, was, on the one hand, the great improvement of atmospheric quality during times of lockdown and, on the other, a notable increase in sanitary waste in oceans and other natural resources. Other recent changes have included advances in nature conservation, such as the reintroduction of at-risk animals to their original habitats, as well as losses, such as the impending loss of glaciers, and other events impelled by climate change.

In this sense, then, *Famous First Facts About the Environment* is an effort to carefully gather, verify, and curate the information available, both positive and negative, in the most accurate and nuanced manner possible. The purpose of this book is to serve not only as a resource for new evidence-based information, but also as a source of inspiration and ideas for further research both for the beginner student as well as the advanced scholar. Moreover, we have made efforts to ensure it is written in a friendly and entertaining manner, so that it may also serve as a general source of information for the public at large. It is pertinent to note that in all instances, *Famous First Facts About the Environment* has consistently sought to maintain a factual and impartial stance about the issues ad-

dressed. These have been substantiated by the most recent science available at the time the events took place and updated as pertinent in this new edition.

To facilitate its search function, the entries are listed in five indexes found at the end of the book, organized in a system that has stood the test of time in past editions. The entries are compiled according to a main subject line, followed by subcategories when pertinent. Facts may be indexed by month and date, by year, by personal name, and by geography. Its over 4,500 entries may fall within more than one category—for instance, a fact may be searchable by a personal name for an author or a scientist, for a geographic area, as well as by a specific year. Therefore, readers may find them according to how they might logically be listed under any of these categories. In any case, the search functions are explained in further detail in the “How to Use This Book” section. We kindly suggest read-

ing it, in order to find or use the information in the most effective way possible.

Last, but not least, while we are proud of the results offered in *Famous First Facts About the Environment*, the book would not have been possible without the invaluable work of its contributors past and present, to whom we extend our perennial gratitude. We are also grateful to the global body of activists, conservationists, legislators, scientists, and all others who dedicate their time and efforts not only towards protecting the environment, but also to publishing their findings for the benefit of all interested in furthering their knowledge. It is to contribute to that noble purpose that this book is today offered to our readers, with the hopes that it will be found as enjoyable as it is useful.

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How to Use This Book

Entries in *Famous First Facts About the Environment* are grouped together under main subject categories. The subject categories are arranged alphabetically, starting with **Activist Movements—Animal Rights** and ending with **Zoos, Aquariums and Museums—Planetariums**. When the situation is appropriate, main subject categories are divided into subcategories. These subcategories are also arranged alphabetically. For example, the main category of **Air Pollution** is divided into five subcategories—**Health, Indoor, Legislation and Regulation, Public Opinion**, and **Research**. A complete list of subject categories and subcategories appears in the Expanded Contents.

Within each main subject category or subcategory, the entries are arranged chronologically. Each entry begins with an introductory phrase in boldface type. This introductory phrase is the entry head, which also acts as a reference point in the indexes.

There are five indexes in the back of this book—Index by Year, Index by Month and Day, Geographical Index, Personal Name Index, and Subject Index. This system of indexing eliminates the need for cross-referencing within the main text. In addition, it will allow the reader to quickly find specific entries according to subject, date,

name, or place. In all five indexes, entries are identified by page number.

The Index by Year lists entries according to the year when they took place. Under each year, entries are listed alphabetically. Entries in the Index by Month and Day are listed first by month, then by the specific day of the month on which they took place. For example, all of the entries that took place in the month of January but do not have a specific day are listed first. Then the entries that took place on January 1 are listed, and so forth. In this index, the entries are listed by year under each day and not alphabetically. The Geographical Index lists the key locations of the entries. The entries are listed according to country, state or province, and then city. For example, an event that took place in Los Angeles would be found by looking up **UNITED STATES**, then **California**, and finally **Los Angeles**. The entry heads in this index are listed alphabetically. The Personal Name Index is an alphabetical listing of the key personal names found in the main body of the text. The names are listed in bold, with the entry heads related to each name listed below. Finally, the Subject Index lists alphabetically all entry heads, as well as words representing key subjects.

Famous First Facts About the Environment

A

ACTIVIST MOVEMENTS—ANIMAL RIGHTS

Evidence of bullfighting as a sport dates from 2000 BCE in Crete. A wall painting excavated at Knossos shows male and female acrobats confronting a bull. Bullfighting was introduced to Spain in the 11th century by the Moors, and later spread to other Spanish speaking countries. Bullfighting, which generally leads to the death of a bull, has been strongly criticized by animal rights activists.

Recorded evidence of the use of animals in research dates from the 3rd century BCE. The Greek physician and anatomist Erasistratus of Alexandria in Egypt (fl. c. 250 BCE) used animals in his studies of circulation and nerves. At the time, the Empiric school of thought rejected the study of both dissection of corpses and vivisection on the grounds of cruelty and uselessness. Vivisection is the practice of cutting open living, and often unanesthetized, animals.

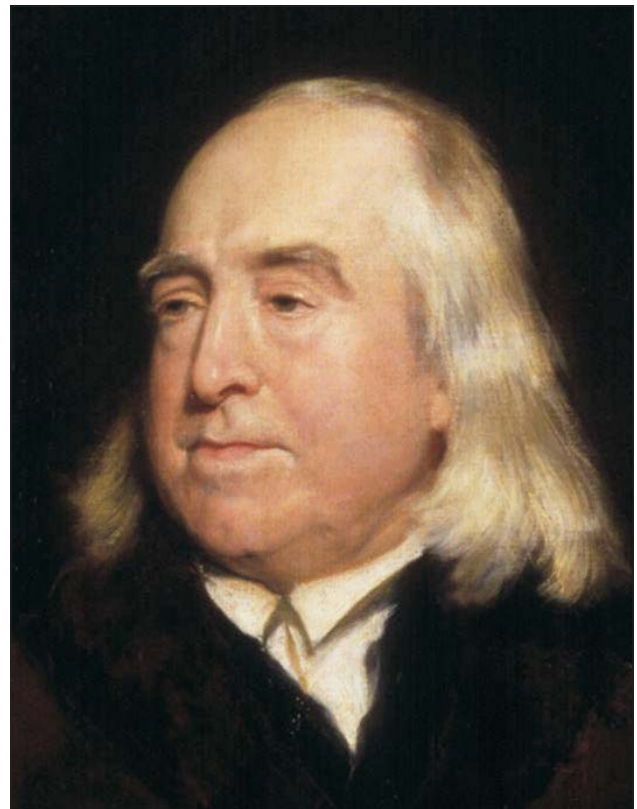
Experiments on animals were conducted through the 17th and 18th centuries, the period known for scientific enquiry, during which the widespread idea of the Cartesian mechanism—the supposed incapacity of nonhuman animals to feel pain—was often invoked in defense of the practice.

Engraving series to deal with animal rights was the *Four Stages of Cruelty* in 1751 by the painter William Hogarth, which depicted how cruelty against animals led to moral degradation. Printed inexpensively, the series was meant for widespread distribution among the populous classes.

Published presentation of the philosophy that humans should not be cruel to animals because animals can feel pain was presented by English philosopher Jeremy Bentham in 1780. Bentham wrote about his philosophy in *Introduction to the Principles of Morals and Legislation*.

Use of the phrase “The question is not, Can they reason?, not, Can they talk?, but, Can they suffer?” was by English philosopher Jeremy Bentham in 1780. It was in his book *Introduction to the Principles of Morals and Legislation*. The phrase sums up the philosophy that we should be kind to animals because they can feel pain.

Animal protection legislation was passed by the British Parliament in 1822. The push for the measure grew out of city-dwellers’ gradual recognition that animals share many traits with humans, such as the ability to feel pain and the capacity for love, loyalty, and grief. Parliament passed the Cruelty to Animals Act in 1835, extending protection from



Jeremy Bentham, National Portrait Gallery of London. Image via Wikimedia Commons. [Public domain]

mistreatment from cattle, to dogs, bulls, bears, cocks, and other animals used for baiting and fighting.

Animal welfare organization started on a national level was the Society for the Protection of Animals, founded in England in 1824. The Society for the Protection of Animals was a response in part to Parliament's passage of animal protection legislation two years before. Similar private societies were established in the United States later in the 19th century. Though the movement spread more slowly in Europe, private animal protection organizations had appeared in several European countries by 1900.

Society for animal welfare in the U.S. was the Society for the Prevention of Cruelty to Animals, established in 1866. Its founder was Henry Bergh of New York City, a pioneer in humane treatment of animals. The society was chartered in New York State in April 1866.

Anti-vivisection legislation was introduced in the British House of Lords on May 4, 1875. Parliament in 1876 approved a measure regulating painful animal experiments.

National act regulating painful experimentation on animals was approved in Britain in 1876. The Cruelty to Animals Act of that year was an amendment which allowed painful experiments only if they furthered physiological knowledge and prohibited the use of animals for the practice of surgical skills.

National animal rights organization in the United States was the American Anti-Vivisection Society, organized on February 23, 1883, at Philadelphia, PA. According to its charter, the goal of the Society was to restrict "the practice of vivisection within proper limits" and "the prevention of the injudicious and needless infliction of suffering upon animals under the pretense of medical and scientific research." The founder of the society was Caroline Earle White and its first president was Thomas George Morton. The first annual meeting was held on January 30, 1884, in Philadelphia.

Fur farm was established on Prince Edward Island in Canada in 1887. Fur farmers used controlled breeding to achieve characteristics of size, color, and texture. Fur farms have since become a controversial issue. Animal rights advocates strongly oppose raising animals in captivity simply for their fur.



Henry Salt. Photo via Wikimedia Commons. [Public domain.]

Use of the term *animal rights* came in a work by India-born British naturalist and classical scholar Henry Salt in 1892. His *Animals' Rights Considered in Relation to Social Progress* argued the notion that animals should live free of human interference and humans should not use animals for their own purposes: for eating, for clothing (as in fur coats), or for scientific experimentation.

Law in the United States to make shipment of wild animals a federal offense if the animals were taken in violation of state laws was the Lacey Game and Wild Birds Preservation and Disposition Act, approved by Congress in 1900.

Mass-membership animal rights organization in the United States was the Humane Society of the United States, established in 1954. The society, with 3.5 million

throughout the world. As of January 1, 1998, 106 states were signatories.

Modification of the International Convention on the Protection of Birds since 1973 was in 2016, originally ratified in 1953. The convention aims to regulate place strictures on hunting of game birds and protect most species of European birds. Because the Convention gathers a relatively small number of European nations, the treaty is not considered among the most effective for bird protection.

BOTANY

Written description of the medical uses of plants was found in the works of Hippocrates in the 5th century BCE. In his writings, Hippocrates mentions more than 240 plants and their uses as medicine.

Botanical study of significance was the work of Theophrastus, Aristotle's student and successor as head of the Lyceum. His *De historia plantarum*, written circa 320 BCE, described and classified more than 500 plants.

Catalog of Roman plants was Cato the Censor's *De re rustica*, from the 2nd century BCE. He lists 125 plants, including eight types of vines, found exclusively in Rome.

Catalog of significance of plants in the ancient world was contained in Pliny's *Historia naturalis*, composed in Rome during the first century. Sixteen of the 37 sections of this encyclopedic work dealt with more than 1,000 different kinds of plants. Not until 1583, when Caesalpinus published *De Plantis*, covering more than 1,500 species, was there a more extensive work on the subject.

Use of the word *pollen* is attributed to German botanist Valerius Cordus in the 16th century.

Botanical garden in Europe was cultivated in Italy at the University of Pisa in 1543. While the garden was devoted to studying plants for their medical properties, by the end of the 16th century the emerging recognition of botany as a science distinct from medicine transformed the work done in Pisa.

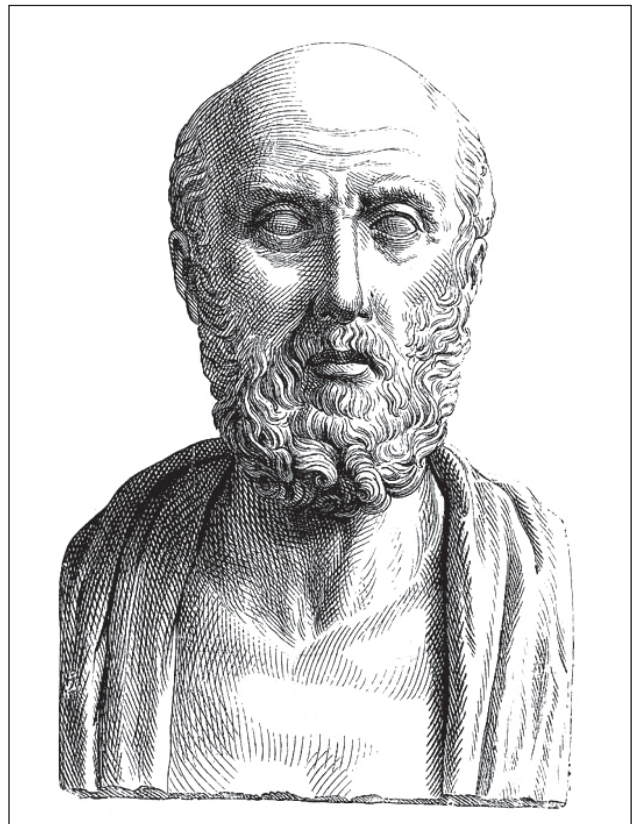
Herbarium was created by Italian botanists Caesalpinus and Aldrovani in 1563. The herbarium contained 768

plants dried, mounted, and labeled with Latin and Italian names.

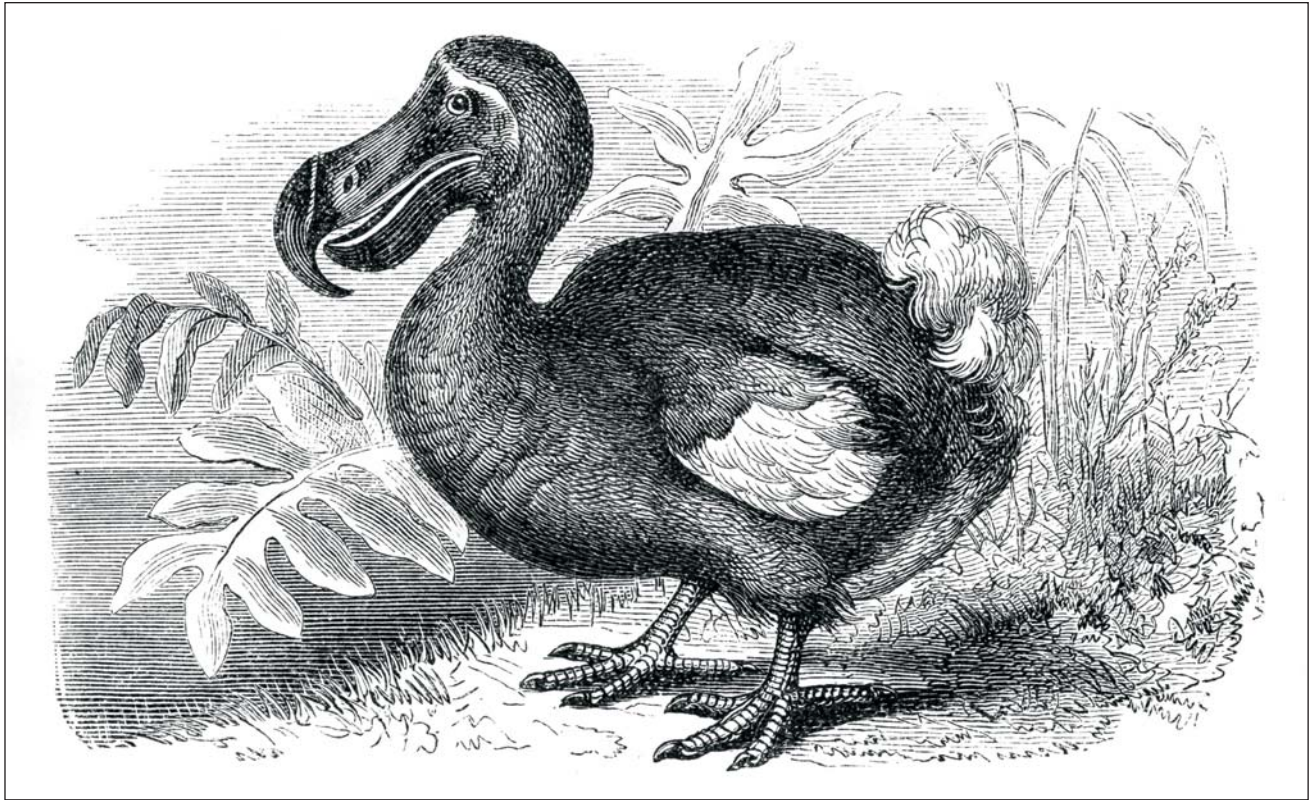
Western botanist to note the sexual identity of plants was Venetian physician Prospero Alpini in 1580. While working for the Venetian government in Egypt, he discovered that plants exist in male and female forms. Alpini later taught botany and was the first European to describe the coffee plant.

Plant taxonomist was Italian botanist Caesalpinus. In his work *De Plantis*, published in 1583 in Florence, he classifies more than 1,500 plants by various attributes such as seeds, fruit, and leaf formation.

Scientific botanical garden in Western Europe was founded in Holland at the University of Leiden in 1590. Its first director, Carolus Clusius (Charles de L'Écluse),



Hippocrates: A conventionalized image in a Roman "portrait" bust (19th-century engraving). Image via Wikimedia Commons. [Public domain.]



Dodo, illustration, c. 19th century. Image via iStock/Nastasic. [Used under license.]

Bering expedition of 1741 relied on sea cow meat to survive. Subsequent fur hunters also used the large marine mammal for meat and had hunted Steller's sea cow to extinction by 1768, only 27 years after its discovery by Europeans.

Scientist to establish the fact of extinction was French biologist Georges Cuvier, whose comparative studies of vertebrate fossils in 1796 proved that some life forms were no longer to be found alive on Earth. Cuvier also founded the sciences of comparative anatomy and vertebrate paleontology.

Report of the extinction of the Bonin Islands thrush was in 1828, when the last four specimens were collected on the small Japanese island of Chichi Shima. The bird was probably eradicated by rats that had escaped from whaling ships.

Report of the death of the last great auk in the British Isles was in 1834, when an auk captured alive in Waterford

harbor in southeast Ireland was beaten to death by local people who believed it to be a witch. Another report indicates that this last specimen was immediately collected by a museum. A subsequent, similar account came from St. Kilda in the Western Isles in 1840, where an islander reportedly caught the last specimen and, after keeping it alive for three days, killed it when he suspected it of being a witch responsible for a recent storm.

Scientific description of a moa was written by British anatomist Richard Owen and published in the journals of the Zoological Society of London in 1839. From a single bone, Owen correctly theorized that the extinct New Zealand creature was a large flightless bird. Subsequent discoveries of moa bones revealed that the birds were capable of growing as tall as seven feet.

Use of the word *dinosaur* appeared in the work of British anatomist Richard Owen in 1841. Owen created the term by combining Greek words meaning "terrible lizard" to describe extinct Mesozoic Saurian reptiles.

Federal legislation in the United States authorizing recreational uses of wildlife conservation areas managed by the Department of the Interior was the Refuge Recreation Act of 1962.

State nature preserve in North Carolina was dedicated in 1963 at Weymouth Woods, near Southern Pines. The Weymouth Woods Sandhills Nature Preserve protects the region's coastal pine barren flora and bird life, including the endangered red-cockaded woodpecker.

Wilderness refuge system in the United States was created in 1964 when the Wilderness Act was signed into law, directing a review of national forest primitive areas and of the National Park System and National Wildlife Refuge System lands. By the end of 1998, Congress had enacted 88 laws designating new wilderness areas or adding to existing ones.

Consolidation of various types of lands into a single U.S. National Wildlife Refuge System was in 1966, with passage of the National Wildlife Refuge Administration Act.

Wild horse range established by the U.S. Bureau of Land Management was the Pryor Mountain Wild Horse Range, created in south central Montana in 1968.

Tiger preserve in India was established at Corbett National Park. Founded as Hailey National Park in 1936 at the urging of hunter and naturalist Jim Corbett, it is also India's first national park. The World Wildlife Fund launched its Project Tiger protection campaign there on April 1, 1973.

Federal legislation in the United States to tax hunting and fishing equipment in order to fund improvements



American Bison. Photo via Wikimedia Commons. [Public domain.]