

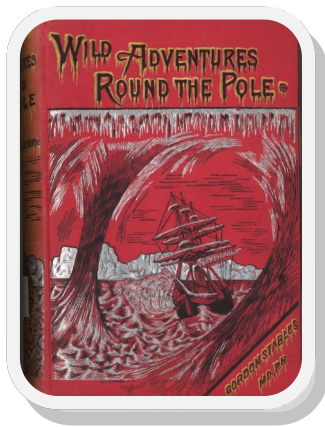


Smithsonian Libraries

**FANTASTIC WORLDS:
SCIENCE AND FICTION 1780–1910**



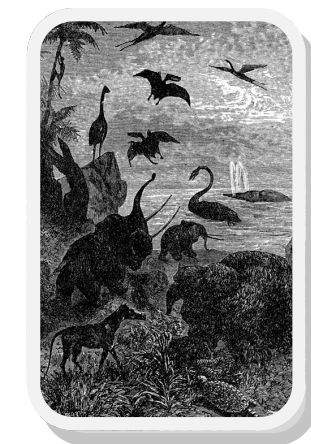
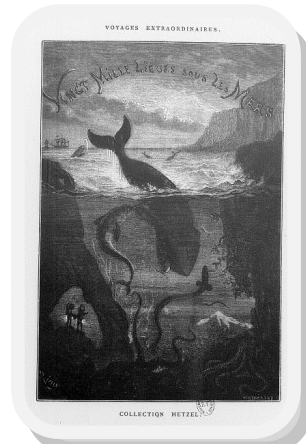
Smithsonian Libraries Exhibition Gallery
National Museum of American History
Opening Summer 2015



Travel with us to the surface of the moon, the center of the earth, and the depths of the ocean – to the fantastic worlds of fiction inspired by 19th century discovery and invention.

New frontiers of science were emerging. We took to the air, charted remote corners of the earth, and harnessed the power of steam and electricity. We began unlocking the secrets of the natural world.

The growing literate middle class gave science a new and avid public audience. Writers explored the farther reaches of the new scientific landscape to craft hoaxes, satires and fictional tales.



Terra Incognita



Exploration to unknown lands provided the opportunity to learn about the natural world. Lured by commerce, empire, national pride, or scientific curiosity, travelers made countless scientific observations and returned with reports about little-known peoples, places, plants and animals.

Map of the Arctic regions reproduced from *The General Atlas for Carey's Edition of Guthrie's Geography Improved*, Philadelphia, 1795.

By the mid-1800s, the Polar Regions and the interior of Africa were the last parts of the globe to be explored. These locales became fixtures of popular culture, as arm-chair travelers read about explorers' perilous adventures. Novelists adapted true-life narratives to their fictions and spun imaginative tales of adventure in unknown lands.



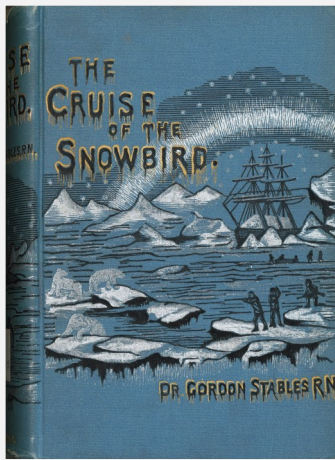
Map of Africa reproduced from *Cary's New Universal Atlas*, London, 1808.



Jules Verne. *The Adventures of Captain Hatteras*.



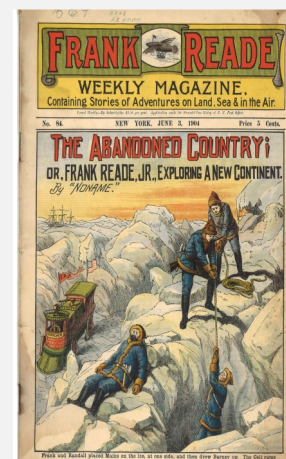
Elisha Kent Kane, *The U.S. Grinnell Expedition in Search of Sir John Franklin. A Personal Narrative*, New York, 1854.



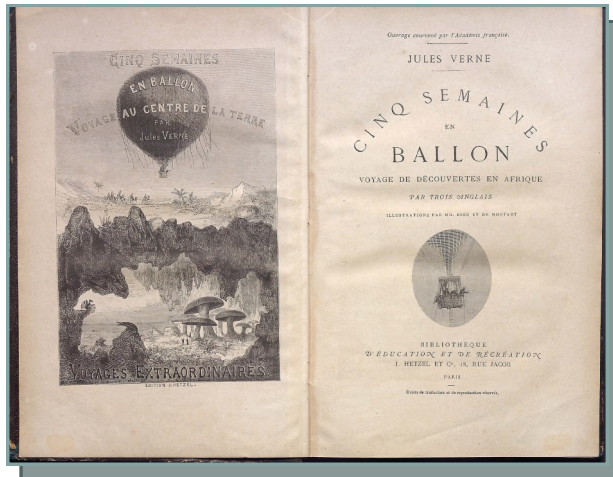
Gordon Stables. *The Cruise of the Snowbird; a Story of Arctic Adventure*, New York, 1884.

Arctic Voyages

Arctic explorers sought a Northwest Passage, a sailing route through the Arctic connecting the Atlantic and Pacific Oceans. British explorer Sir John Franklin's fourth and final voyage to map the last stretch of the Northwest Passage in 1845 ended in disaster when their two ships became ice-bound. Franklin and his crew were lost, victims of starvation, cold, lead poisoning and disease. Rumors of cannibalism circulated. The story of the Franklin voyage was a sensation in Britain and America. The public eagerly followed the many expeditions launched in search of them. Fascination with these true life tales raised popular interest in the Arctic to new heights.



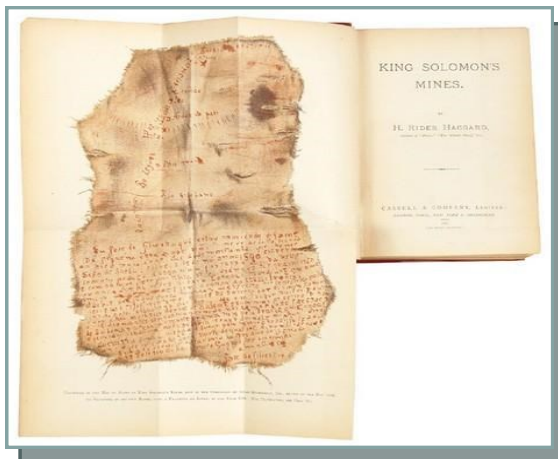
The Abandoned Country; or, Frank Reade, Jr., Exploring a New Continent (Frank Reade Weekly Magazine), New York, 1904. Gift of the Burndy Library.



Jules Verne. *Cinq semaines en ballon; voyage de découvertes en Afrique, par trois anglais.* (Five weeks in a balloon; voyage of discovery in Africa, by three Englishmen), Paris, 1867.



Glass magic lantern slide, ca. 1900. London Stereoscopic & Photographic Company for The London Missionary Society. Russell E. Train Africana Collection.

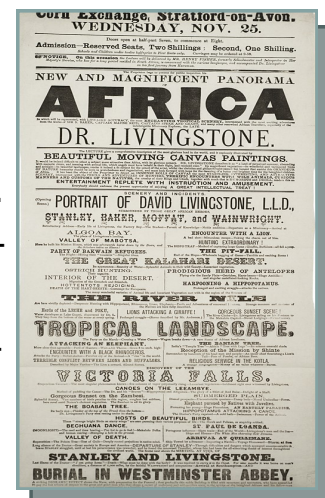


H. Rider Haggard. *King Solomon's Mines*.

African Exploration

Expeditions to Africa—with its wide expanse and varied cultures, unfamiliar to Western eyes—made for compelling tales. The public was transfixed by illustrated magazines with the latest news of adventurers in exotic locales. Africa was sensationalized in the press, depicted as mysterious and fraught with danger.

By the end of the century, the interest in scientific discovery in Africa waned, as explorations of the interior, missionary efforts, and commercial interests led to the occupation of African lands by European powers competing for colonial territories.



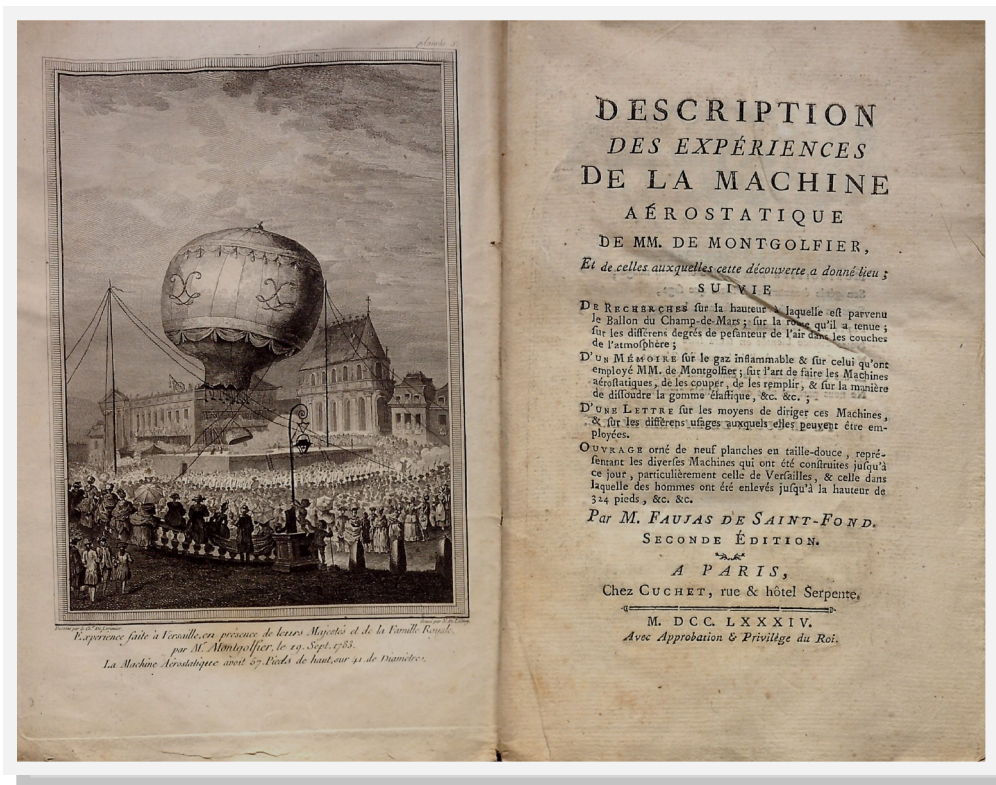
Broadside advertisement. Stratford-upon-Avon, after 1873. Russell E. Train Africana Collection.

The Age of the Aeronaut

Aeronauts were the first voyagers and navigators of flight. The history of flight began when the Montgolfier brothers launched the first balloon in 1783.

Ballooning made celebrities of aeronauts whose adventures filled newspapers, sold books, and inspired works of fiction. Flight offered a sense of freedom, and a radical new frontier for exploration.

Flights of fancy did not stop with ballooning as inventors, engineers, and scientists devised navigable airships and early planes. The search for new modes of flight continues to propel science and the imagination today.



Barthélemy Faujas de Saint-Fond. *Description des expériences de la machine aérostatique de MM. de Mongolfier*. (Description of trials of the Montgolfiers' aerostatic machine), Paris, 1784.

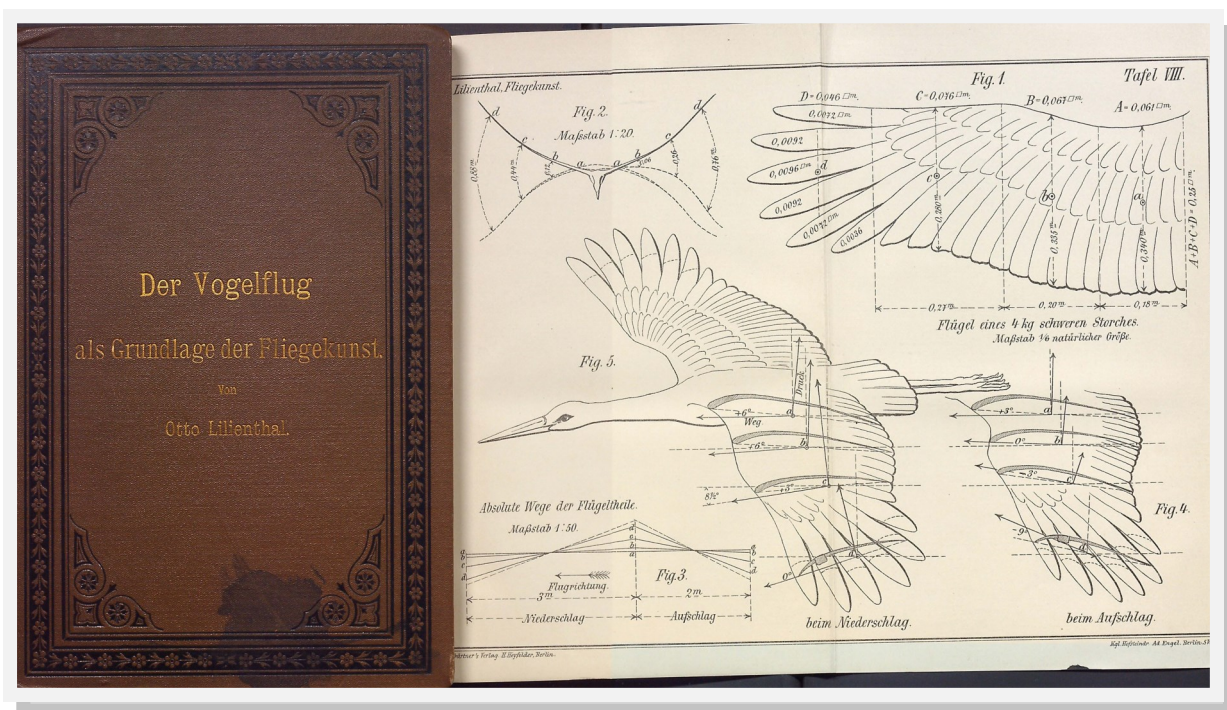
Thomas Baldwin. *Airopaidia: Containing the Narrative of a Balloon Excursion from Chester, the eighth of September, 1875*, London.



The Transient Lake; or *Frank Reade Jr's Adventures in a Mysterious Land*. (Frank Reade Weekly Magazine), New York, 1904.

Rudyard Kipling. *With the Night Mail, a Story of 2,000 A.D.*, New York, 1909.





Otto Lilienthal. *Der Vogelflug als Grundlage der Fliegekunst*. (Bird flight as the basis of the art of flying), Berlin, 1889.

While tales of ballooning and fanciful flying machines fascinated the public, the dream of mechanized winged flight had not gotten off the ground.

Lack of advancements in flight made the public as well as scientists think motorized flying machines only appeared in fiction. Gravity could not hold down the future of flight as tinkerer and scientist alike aimed for the sky. Important breakthroughs were made in the mechanics of flight by studying birds, though many failed attempts were made off hills and cliffs, by scientists using mechanical wings strapped to their backs.

Infinite Worlds

Astronomers in the 1800s sought to discover the origins of the universe and answer questions about the make-up of the stars and the planets. Advances in telescopes enabled discovery of the outermost planets in our solar system and views into deep space.

Amateur astronomy became widely popular. Books by famous astronomers were best sellers. The question of extraterrestrial life, at the time known as a “plurality of worlds” theory, was a hot topic of debate.

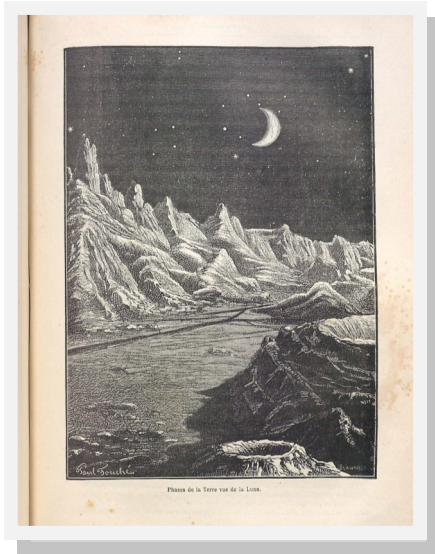
Space was a frontier where science and the creative mind explored unknown and distant worlds. The emerging genre of science fiction, took it further, harnessing scientific thought to envision travel to earth-like planets.



Sailing to the Moon. Illustration by Gustave Doré from *The Adventures of Baron Munchausen*, London, 1867.



Leopoldo Galluzzo. *Altre scoperte fatte nella luna dal Sigr. Herschel*. (Other lunar discoveries from Signor Herschel), Napoli, 1836 .



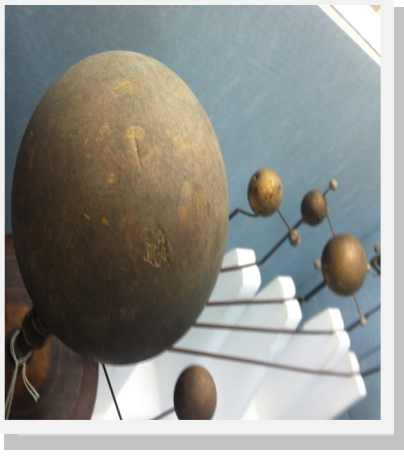
Camille Flammarion. *Les terres du ciel; voyage astronomique sur les autres mondes et description des conditions actuelles de la vie sur les diverses planètes du système solaire*. (Land of the sky: astronomical travel on other worlds and description of the current conditions of life on the planets of the solar system), Paris, 1884.

The Great Moon Hoax

In 1835, Richard Adams Locke, a writer for the New York newspaper, *The Sun*, concocted a fictional scientific report claiming British astronomer John Herschel had discovered “man-bats” on the moon. Locke’s satire targeted Reverend Thomas Dick, a main supporter of the “plurality of worlds” theory. The story was so popular that the *Sun*’s owner would not allow Locke to expose the truth. The story is now known as the Great Moon Hoax.



Leopoldo Galluzzo. *Altre scoperte fatte nella luna dal Sigr. Herschel* (Other lunar discoveries from Signor Herschel), Napoli, 1836.



Golden Apparatus. Charles Came Collection. Courtesy of the National Museum of American History.

Science as Theater

Travelling science lecturers, like Charles Came in upstate New York, were popular in the mid-1800s, spreading scientific discoveries and knowledge to the general public. Lecturers used mechanically animated visuals and enthralling experiments to present scientific thought as something wondrous, entertaining, and even terrific in nature.

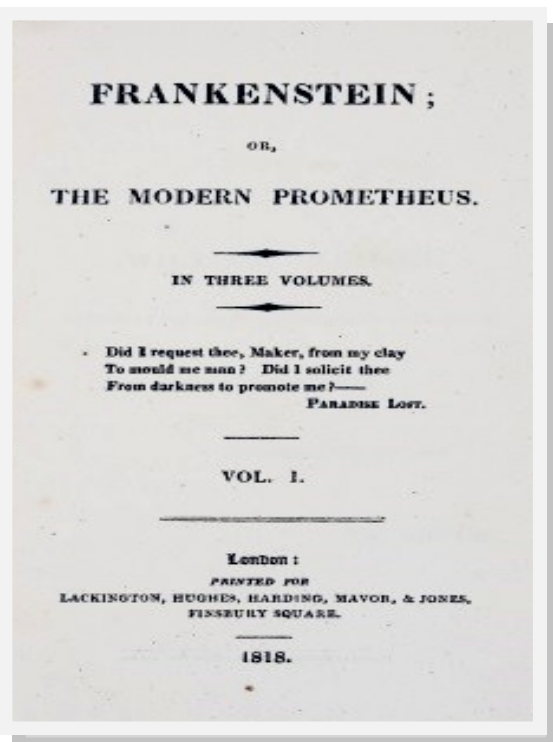
The Body Electric

Could the dead be brought back to life?

The new sciences of chemistry and electricity emerging in the early 1800s offered provocative new tools to help solve an ancient problem: what is the nature of life? The experiments of Luigi Galvani hinted at electricity as a life force.

In the summer of 1816, young Mary Shelley, challenged by her companions to invent a ghost story, began work on what would become *Frankenstein: or, the Modern Prometheus*.

Shelley had read of recent theories on the animation of matter and electricity's effect on the bodies of the dead. Her gothic tale explores the fate of the ambitious scientist who succeeds in creating life from death.



Mary Shelley. *Frankenstein: or, The Modern Prometheus*, London, 1818.

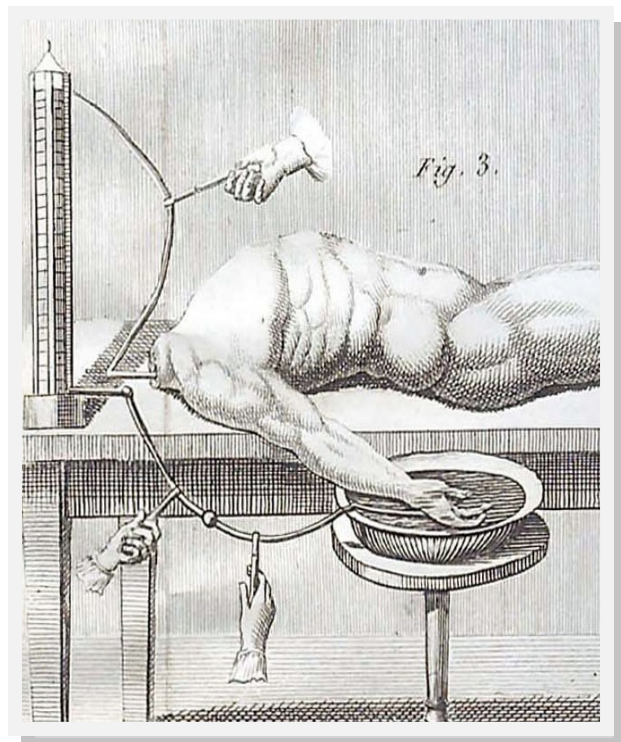
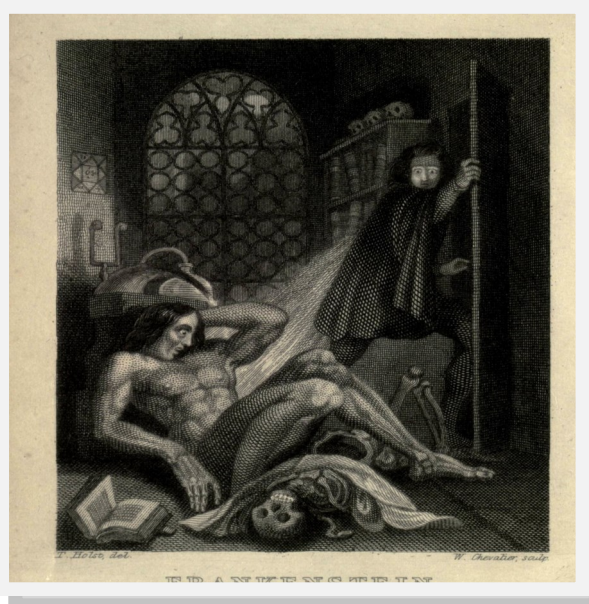
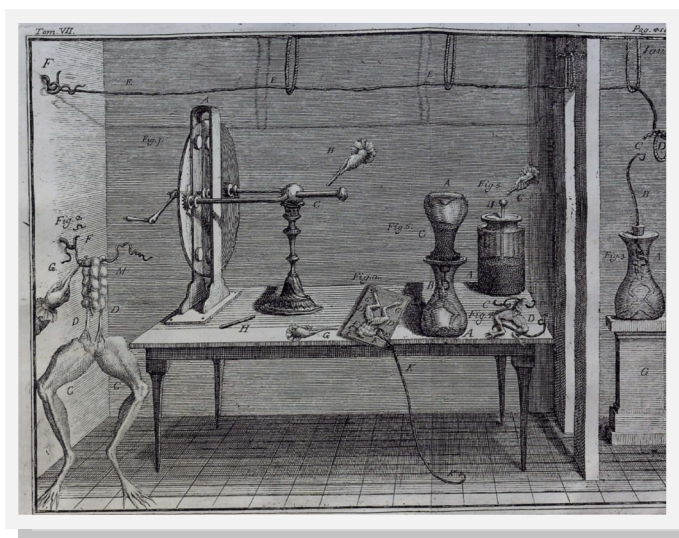


Illustration from Giovanni Aldini, *Essai théorique et expérimental sur le galvanisme* (Theoretical and experimental essay on galvanism), Paris, 1804.

Though not yet twenty when she began *Frankenstein*, Mary Shelley was no stranger to both the creation and the loss of life. She bore three children, losing one in infancy, and lost her half-sister to suicide, all before the book was finished. “Perhaps a corpse would be reanimated,” she wrote in the preface; “galvanism had given token of such things.”



Mary Shelley. *Frankenstein, or, The Modern Prometheus*, London, 1831.



Luigi Galvani. *De viribus electricitatis in motu musculari commentaries*. (Commentary on the effect of electricity on muscular motion), Bologna, 1791.

Thomas Green Fessenden. *Terrible Tractortation!!!: a Poetical Petition against Galvanising Trumpery, and the Perkinistic Institution*, London, 1803. Gift of the Burndy Library.

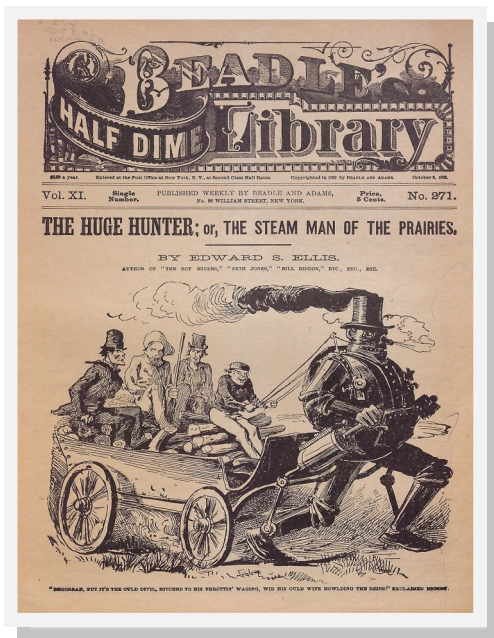


Rise of the Machines

The revolution in industrial mechanization that took place in Victorian times was astounding. Artisans displaced by mechanical production saw machines, animated by steam or electricity, accomplish tasks once only done by human hands. The factory was here to stay.

Clockwork automatons, entertaining novelties made to look and move like living creatures, had been around for centuries. But now the question arose: if machines could be made to work, could they be made to think?

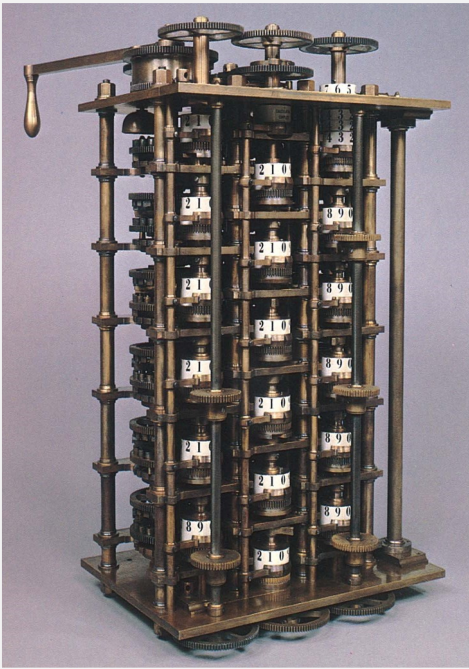
Literary fictions of the time reflected this strange new world, inventing wonders like steam-powered mechanical men, and speculating on the future. Where, in this newly mechanized world, would machines take us?



Edward S. Ellis, *The Huge Hunter; or, the Steam Man of the Prairies*, (Beadle's Half-Dime Library), New York, 1882. Gift of the Burndy Library.



L. Frank Baum, *Ozma of Oz: A Record of Her Adventures ...*, Chicago, 1907.



Model of Charles Babbage's Difference Engine No. 1 (replica). Gift of International Business Machines Corporation. National Museum of American History.

In the 1820s, British mathematician Charles Babbage devised a “difference engine” to automatically calculate and print mathematical tables free of human error. While never built in his lifetime, his invention set the stage for modern computing.



“Ajeeb” the famous automation, Trade card from Eden Musée, New York. National Museum of American History.



Frank Reade and his Steam Horse. (The Five Cent Wide Awake Library). New York, 1883.



Jules Verne. *Vingt mille lieues sous les mers* (Twenty thousand leagues under the sea), Paris, [189-].



The Sunken Isthmus;
or, Frank Reade, Jr., in the Yucatan Channel (Frank Reade Weekly Magazine), New York, 1904. Gift of the Burndy Library.

Sea Change

The sea was an important part of 19th-century life: distant travel and commerce depended on it. Tales of sea voyages, both fact and fiction, were immensely popular. As the depths were explored, stories began to take place not just on the sea, but in it.

In 1830, scientists believed the deep sea could not sustain life. Knowledge of the oceans was limited to shores and shallow waters. While much of the deep ocean is still a mystery today, the mid-19th century saw the start of our exploration of this immense underwater world.

Technological improvements to submersible vessels and diving gear helped make the seas more accessible. The bold plan to lay a telegraph cable across the Atlantic Ocean made understanding the ocean floor essential, and helped drive deep sea exploration further.

Underworlds



Benjamin Waterhouse Hawkins at work in his studio. Reproduced from *The Illustrated London News* December 31, 1853.

As the new science of geology and the study of fossils evolved, so did the imaginative possibilities. Writers creatively responded to these novel ideas recreating past worlds and imagining new ones.

Our understanding of the earth changed radically in the early 1800s. The discovery of the true age of the planet, and the remarkable species that had inhabited it before us astonished the world, challenging long-held beliefs.

By the 1850s, a curious public was attending lectures and viewing popular panoramic paintings of our world's distant past. The first models of dinosaurs were built, and natural history museums displayed fossil specimens.



Volcanoes and passageways, Illustration from Athanasius Kircher, *Mundus Subterraneus ...* (The Subterranean World), Amsterdam, 1664–1665.



Portrait of Mary Anning
Natural History Museum, London

Fossils

The first complete fossil of an ichthyosaur, a long-extinct marine reptile, was collected from the cliffs in the English seaside town of Lyme Regis in 1811, by 12-year-old Mary Anning. Selling her findings as curios to tourists and to scientists seeking specimens, she would become a significant contributor to paleontology in its early days.

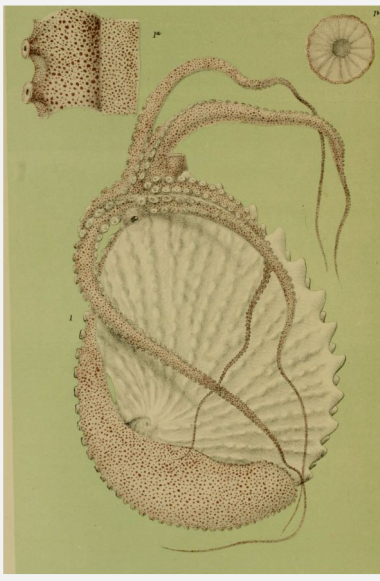


Jules Verne . *Journey to the Center of the Earth*



Duria Antiquior – A More Ancient Dorset, 1830.
Watercolor by Henry De la Beche (reproduction)
National Museum Cardiff / Amgueddfa Cymru

The progress of geological science and the study of fossils was rapid. The public read about it in magazines and pored over geological guides and popular science books. Writers of fiction like Jules Verne saw an opportunity and worked the new science into tales of adventure.



Frederick McCoy. *Natural History of Victoria*, Melbourne, 1885-1890.

Fantastic Worlds: Science and Fiction, 1780-1910 will be the first exhibition to debut in the newly renovated Smithsonian Libraries Exhibition Gallery in the National Museum of American History. Join us on a tour of imaginative tales and the scientific discoveries that inspired them, when the science fiction genre was just beginning to come into its own. Learn about this fascinating period in our history using the very works that taught eager and curious public new ideas: newspaper hoaxes, works of popular science, novels, and much more. Top hat and goggles are not required to take this trip to a world revolutionized by technology, populated with inspired minds (perhaps even a few mad scientists), and transformed by discovery.

Smithsonian Libraries exhibitions are made possible through the generous contributions of individuals, foundations and corporate partnerships. To explore exhibition sponsorship opportunities please contact the Libraries Advancement Office at (202)633-2241 or librarygiving@si.edu.

The Smithsonian Libraries has a myriad of intellectual and visual source materials from the 19th century, which illustrate the themes of the exhibit and provide scientific and cultural contexts. This includes materials illustrating developments in electricity, the steam engine, ballooning and aeronautics, transportation, astronomy, and much more. In addition, the Libraries holds works focusing on the artistic and creative production of the time, such as fantastic flying machines, visions of the future, illustrated literary works, etc.



Frank Reade Jr.'s *Search for the Silver Whale; or, Under the Ocean in the Electric Dolphin* (Frank Reade Weekly Magazine). Gift of the Burndy Library.



LEVEL	IMPACT	BENEFITS
\$2,500	A gift of \$2,500 could support the conservation and digitization of the rare books and materials in the exhibition.	<ul style="list-style-type: none"> • Recognition on the Smithsonian Libraries' website • Credit in <i>Fantastic Worlds</i> virtual exhibition • Acknowledgement in the Smithsonian Libraries Annual Report • Subscription to postal and e-newsletters • Access to private behind-the-scenes tours • Invitations to the <i>Fantastic Worlds</i> private exhibition opening reception • Invitation to Smithsonian Libraries VIP events • Invitation to Annual Smithsonian Weekend
\$5,000	<i>A gift of \$5,000 could support advertising for the exhibition and public programs in places like:</i> <ul style="list-style-type: none"> • Newspapers and magazines; • Smithsonian kiosks; • Smithsonian shuttles; and • Flyers and bookmarks 	Enjoy the benefits above as well as: <ul style="list-style-type: none"> • Recognition as a sponsor on <i>Fantastic Worlds</i> signage and publications • Private behind-the-scenes curator-led tour of the exhibition and the Dibner Library of the History of Science and Technology • Invitation to participate in <i>Fantastic Worlds</i> symposium hosted by the Smithsonian Libraries
\$10,000	<i>A gift of \$10,000 could fund exhibition brochures including:</i> <ul style="list-style-type: none"> • Complementary content and broad use of rich imagery from the Libraries' historical collections; and • Large print exhibition guide 	Enjoy the benefits above, and <ul style="list-style-type: none"> • Private consultation with a curator, conservator or head librarian



\$25,000	<p><i>A gift of \$25,000 could make our exhibition's education and outreach activities possible.</i></p> <ul style="list-style-type: none"> • Lecture series and/or symposium on Moon Hoax, science and literature of the period, or 19th century aeronautics, astronomy and their fictions; • Creation of iBook to ensure content is accessible; • Programming for K-12 and life-long learners designed with educators and curators 	<p>Enjoy the benefits on the previous page as well as:</p> <ul style="list-style-type: none"> • Recognition with logo, on exhibition signage, website and publications • Recognition on the Smithsonian Libraries' Donor Panel in the National Museum of Natural History
\$50,000	<p><i>A gift of \$50,000 could support the design, fabrication and installation of exhibition cases housing three exhibition themes:</i></p> <ul style="list-style-type: none"> • Terra Incognita - Artic and African adventure and exploration; • Infinite Worlds; • Age of the Aeronaut; • Body Electric; • Rise of the Machines; • Sea Change; • or Underworlds 	<p>Enjoy the benefits above, and</p> <ul style="list-style-type: none"> • A story featuring your gift online and in our newsletter • Opportunity to provide a giveaway at the <i>Fantastic Worlds</i> opening reception
\$100,000	<p><i>Lead Sponsorship is critical for the design, editing, fabrication and installation of the exhibition</i></p>	<p>Enjoy the benefits above, and</p> <ul style="list-style-type: none"> • Enjoy recognition as <i>Lead Sponsor</i> on exhibition and all promotional materials • Attend a private exhibition event for you and your guests

Questions? Please contact the Libraries' Advancement Office at (202) 633-2241 or librarygiving@si.edu