



NATIONAL
GEOGRAPHIC

HISTORY

KUBLAI KHAN

OVERLORD
OF CHINA

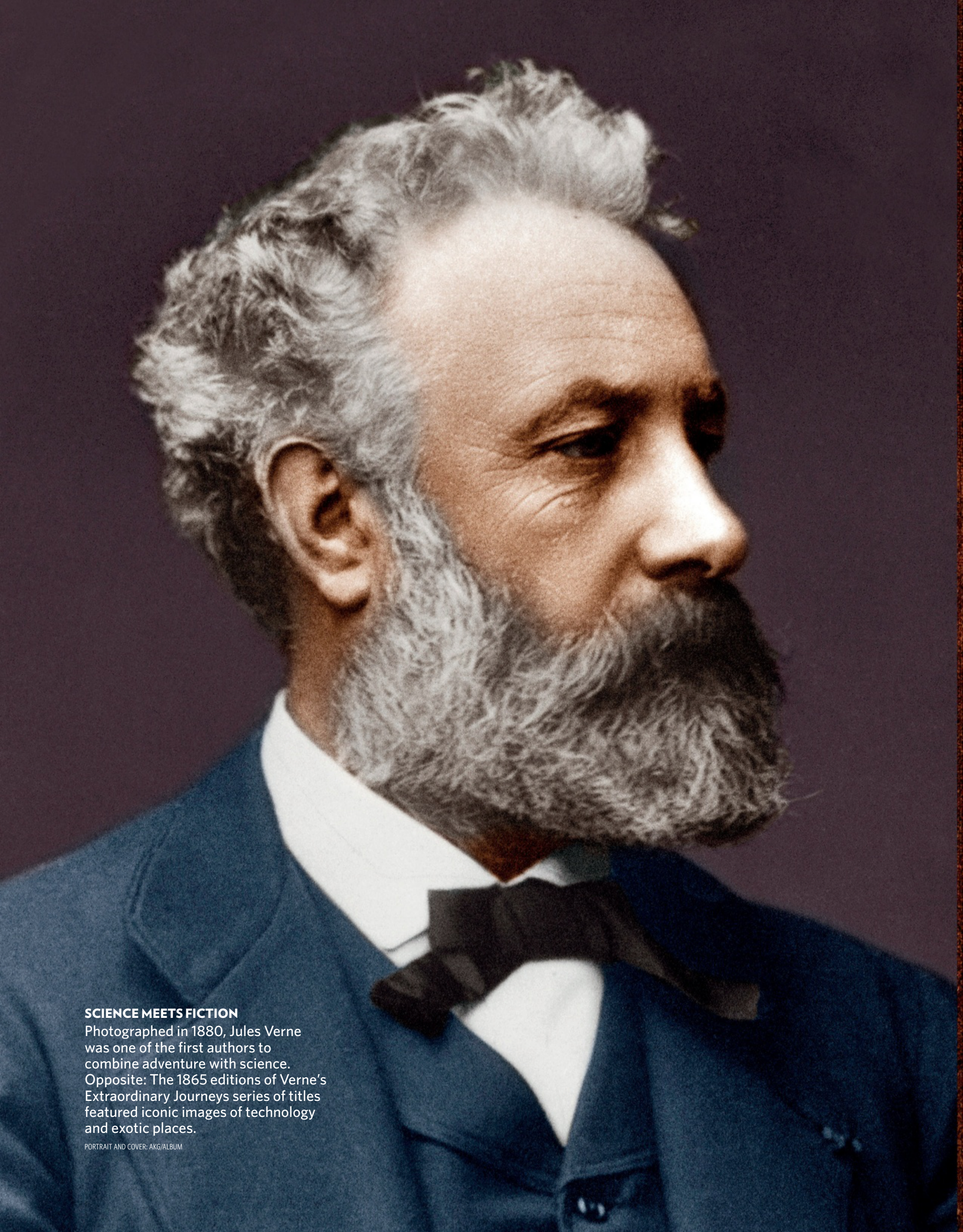
PIRATES OF
ANTIQUITY
SCOURGE OF THE
MEDITERRANEAN

MYSTERIES
OF ISIS
EGYPT'S GREAT
MOTHER GODDESS

FANTASTIC VOYAGES
THE MARVELOUS WORLD
OF JULES VERNE

PLUS:

30 Seconds in Tombstone:
Shoot-out at the O.K. Corral



SCIENCE MEETS FICTION

Photographed in 1880, Jules Verne was one of the first authors to combine adventure with science. Opposite: The 1865 editions of Verne's Extraordinary Journeys series of titles featured iconic images of technology and exotic places.

PORTRAIT AND COVER: AKG/ALBUM



JULES VERNE

FATHER OF SCIENCE FICTION

Inspired by 19th-century scientific progress, Jules Verne coupled technology with the adventure story to create a blockbuster literary genre.

PEDRO GARCÍA MARTÍN

The human mind,” observes the narrator of *Twenty Thousand Leagues Under the Sea*, “is naturally drawn to grandiose notions.” And notions do not come much more grandiose than those dreamed up by that narrator’s creator, considered the father of science fiction. From the center of the Earth to the surface of the moon, Jules Verne described environments where no one had been, but that everyone wanted to see.

Despite not being much of a traveler himself, Verne unleashed the adventurousness and versatility of his own imagination to describe some of the greatest expeditions in literature across an astonishing output of 60 novels.

He reached the peak of his career in 1872, when an avid readership awaited the next plot twist in his novel *Around the World in 80 Days*. First published in installments, it recounted how Phileas Fogg and his assistant Passepartout risked all to win their 80-day wager against impossible odds.

Verne was, however, much more than a prolific creator of blockbusters. He was a child of the industrial revolution, whose tales fascinated his readers by speculating on where technology would take humanity next, and asking if machines will change humanity for better or worse.

Finding the Formula

Jules Verne was born in 1828 in the river port of Nantes, in western France. His parents—Catholic, conservative, middle class—provided him with a happy childhood. The Atlantic coast and the mighty Loire River of

his hometown shaped his childhood, and he learned to sail and love boats. With a decent education behind him and then a spell in Paris to study law, it was assumed he would bury himself in the family legal practice for the rest of his days.

Instead, he began to construct a network among the city’s literary set. He was also in the French capital to witness the revolution of 1848, a brief, ultimately unsuccessful struggle for radical improvements to better labor and democratic rights that swept Europe. A 1971 essay by historian Jean Chesneaux suggests that these events had a deep impression on Verne, and that the adventures of which he later wrote were, in part, a symbol of political freedom to the author. Chesneaux also saw revolutionary traits in Verne’s later creation, the reclusive Captain Nemo of *Twenty Thousand Leagues Under the Sea*.

Having told his parents he would not be pursuing a legal career, his life as a writer got off to a somewhat rocky start. Over the next few years he wrote a series of plays, only four of which were performed, with little success.

He also got married. His bride was a widow



TALES OF THE FUTURE

1828

Jules Verne is born on February 8, in Nantes, a bustling port city on the Loire River in western France, the son of a lawyer.

1847

He moves to Paris to study law. There, he witnesses the revolution of 1848, meets literary figures, and decides to become a writer.

VICTORIA, THE HOT-AIR BALLOON FEATURED IN THE FIRST EDITION OF VERNE'S 1863 NOVEL, *FIVE WEEKS IN A BALLOON*, HIS FIRST LITERARY HIT

ALBUM/AGG IMAGES



REVOLUTIONARY INSPIRATION?

Eugène Hagnauer's painting shows a bloody episode in Paris during the brief revolution of 1848. Despite Verne's later political and social conservatism, his biographers consider that the events had a deep effect on the future pioneer of science fiction.

Musée de la Ville de Paris, Musée Carnavalet

BRIDGEMAN/ACI



1863

Five Weeks in a Balloon is Verne's first hit. With P.-J. Hetzel as his publisher, in 1869-1870 Verne will publish *20,000 Leagues Under the Sea*.

1870s

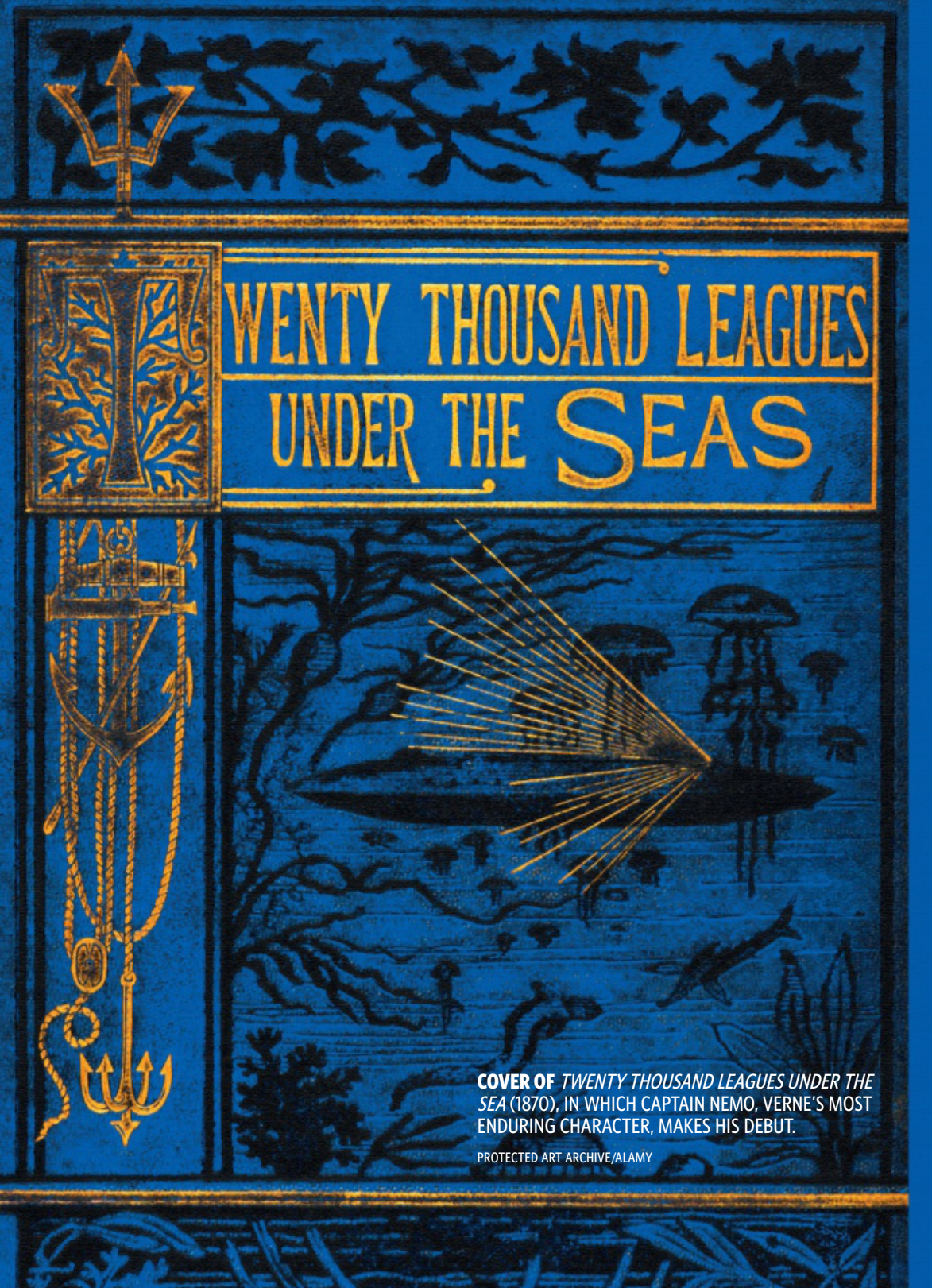
Verne's readers are taken to the moon, Africa, and the Arctic with *Around the Moon*, *Dick Sand*, and *Michael Strogoff*.

1880s

The Green Ray blends science with romance. *The Purchase of the North Pole* recounts a bid to stop the Earth tilting on its axis.

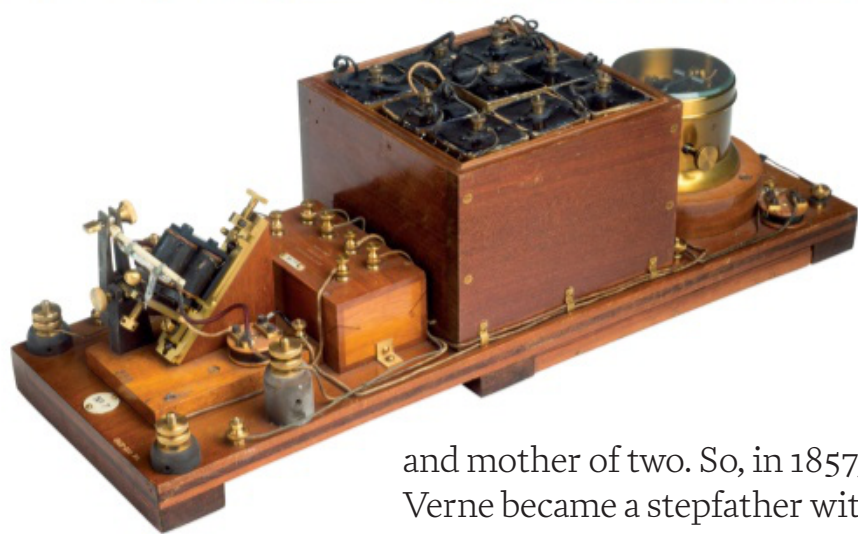
1905

Jules Verne dies, age 77. His 54-novel *Extraordinary Journeys* series will deeply inspire the new medium of film.



COVER OF *TWENTY THOUSAND LEAGUES UNDER THE SEA* (1870), IN WHICH CAPTAIN NEMO, VERNE'S MOST ENDURING CHARACTER, MAKES HIS DEBUT.

PROTECTED ART ARCHIVE/ALAMY



LONG DISTANCE

Phileas Fogg, the hero of *Around the World in 80 Days*, could not have completed his travels without the electric telegraph (above), which first appeared in 1844.

BRIDGEMAN/ACI

and mother of two. So, in 1857, at the age of 29, Verne became a stepfather with all the responsibilities that entails. These he met by taking a job as a stockbroker, rising at dawn to work on his unsuccessful plays, and then setting off for the office. In 1861 his son, Michel, was born, the only child that the couple would have together.

Life by his early 30s seemed far removed from the literary world he yearned for. But rescue came in the form of the flamboyant figure of Gaspard-Félix Tournachon, universally known by his pseudonym, Nadar. Tartly described by his biographer Adam Begley as “a narcissist, but

a charming one,” Nadar was a writer, impresario, and photographer. He was also, perhaps, one of the first men to truly understand the power of nascent celebrity culture, and had a great eye for the possibilities of new technology, especially photography. He was responsible for one of the most famous portraits of Jules Verne, with the author smiling good-humoredly into the lens.

Up, Up, and Away

In 1858 Nadar had a characteristically audacious idea. He would fly over Paris in a balloon, taking his camera with him. There, high above the streets, he would take the world’s first aerial photograph of the city.

Verne later confirmed that this blend of technology and adventure inspired him to finally leave playwriting behind and write a novel. Set in Africa, *Five Weeks in a Balloon* (1863) was about a team of Englishmen, and their bid to cross Africa in a hydrogen-filled balloon. Thanks to Nadar, he had hit upon the formula that would kick-start his career and inaugurate a new genre of storytelling: the scientific romance. Or, as it later came to be known, science fiction.

The novel’s mixture of exotic locations and technical detail was new and would prove immensely popular with readers. Verne was not the first writer to use the landscapes and wildlife of Africa as a backdrop for adventure, but no one before had combined that fantasy with so many concrete details from the technological progress of his day.

Yet what most of his readers did not know was that, when it came to adventure, Verne was almost as inexperienced as they were. Over the course of his life he did make some modest excursions beyond France’s borders, but in that great age of exploration he never went to the more distant parts of the world. All his knowledge of Africa and beyond came from secondary sources. Endlessly curious about how the world of technology worked, he did not feel the need to research the natural world himself.

Verne’s foray into novel-writing coincided with a golden age in serialized fiction. The first advertisements had appeared in newspapers in 1836, enabling publishers to drop the cost for readers. Circulation rocketed and created a market of readers thirsty for entertainment. The expansion of publishing created a circular, self-feeding system of information. It brought

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Clucke' non gennere'

TAKING OFF

Nadar, pictured here in the gondola of a hot-air balloon in his studio, inspired Verne's first literary hit, *Five Weeks in a Balloon*. Despite the iconic nature of the craft, both men believed the future lay in the possibility of heavier-than-air flight.

ATELIER DE NADAR/RMN-GRAND PALAIS

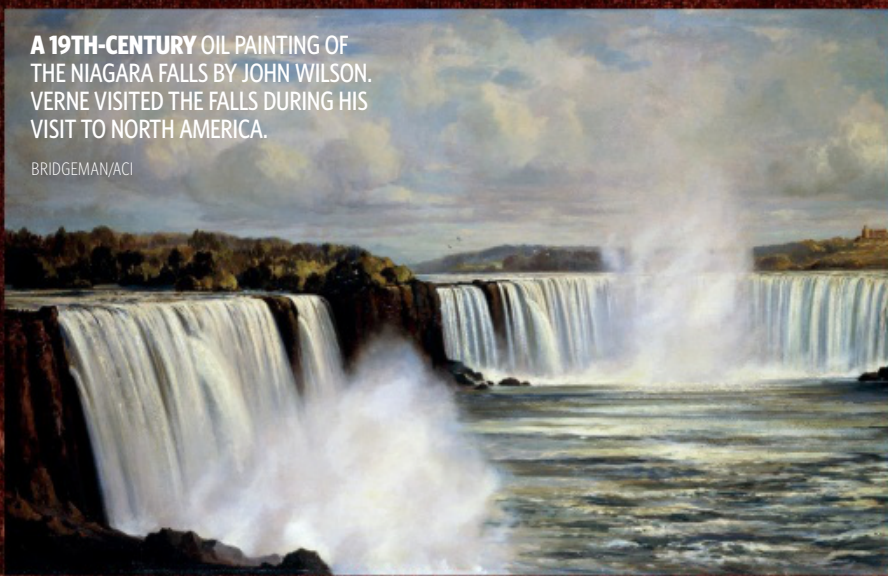


A Modest Traveler

JULES VERNE lived in just three places: Nantes, where he was born; Paris, where he studied; and Amiens, where he lived and wrote until his death. He undertook some journeys around Europe, and once visited North America. His love of boats also took him across the Mediterranean, where he visited North Africa. However, his journeys were relatively modest, and he had no personal experience of the far-flung locations he wrote about. His books were researched using the information he gleaned from the press. Like the scientific, engineering, and astronomical detail that went in to his work, the geographical color that brought his tales alive was mainly secondhand.

A 19TH-CENTURY OIL PAINTING OF THE NIAGARA FALLS BY JOHN WILSON. VERNE VISITED THE FALLS DURING HIS VISIT TO NORTH AMERICA.

BRIDGEMAN/ACI



to an amateur scientist such as Verne all the information he would ever need for his work, which he could then repackage as blockbuster fiction.

Publishing Partners

But Verne could not do it all on his own, and the man who had a definitive impact on his career was someone who understood the burgeoning new market for violence, adventure, romance, and sensation. This was Pierre-Jules Hetzel, the publisher of other great French writers such as Honoré de Balzac and Émile Zola. He had taken on *Five Weeks in a Balloon* and, following the success of that venture, would go on to be Verne's main publisher and close friend.

THE COVER OF *OFF ON A COMET* (1877), WHICH RECOUNTS HOW A COMET MAKES A LOW PASS OVER EARTH, SCOOPING UP A GROUP OF PEOPLE WHO MUST SURVIVE ON ITS SURFACE

LEEMAGE/PRISMA

He offered Verne 20,000 francs for two novels each year. Although this was a vastly larger sum than the writer had ever received before, the contract tied Verne to his publisher for 20 years. It was a mutually beneficial arrangement, though it is a close call as to which of the two men benefited most financially. The two men became friends, but Hetzel also became the author's most astute critic.

Another novel that Verne had written, *Paris in the Twentieth Century*, was set a hundred years in the future, in a dystopian 1960 France where technology represented the only measure of worth. Hetzel disapproved of the work, believing the pessimism of the book would worry and alienate Verne's new audience. He persuaded Verne not to publish it. The book would remain shelved until the very 20th century that it purported to describe.

Despite the differences in literary vision between the two men, Hetzel's commercial formula began to reap huge commercial rewards for both. Exploiting the huge growth in journals that published fiction in serialized form, starting in 1864 Verne's tales started to come out in a joint Verne-Hetzel venture, the *Magasin d'éducation et de récréation*.

Around the same time, Hetzel hit on another shrewd marketing ploy: Following serialization, Verne's tales would then appear in a permanent book format, grouped under the title *Voyages extraordinaires*, or the Extraordinary Journeys.

Hetzel proclaimed that the aim of the collection was "to summarize all knowledge of geography, geology, physics and astronomy that modern science has amassed and to retell the history of the universe in the attractive and picturesque form." The claim was somewhat overblown, but the brand he created has been powerful and enduring: Using a cartonnage technique and bound in a richly decorated, fabric-lined cardboard cover, the books were gorgeous objects in themselves. Hetzel invested heavily in the cover design and produced objects whose craftsmanship and beauty still resonate (and are often imitated) today.

Verne soon had an income that allowed him to move out of Paris. He settled in Amiens, a cathedral town in northern France, quiet enough to facilitate the imagination (and fulfill Hetzel's punishing publishing schedule) but still within easy reach of the big city. Provincial life suited him. He could write each morning, leaving plenty of time in the afternoons for other activities.

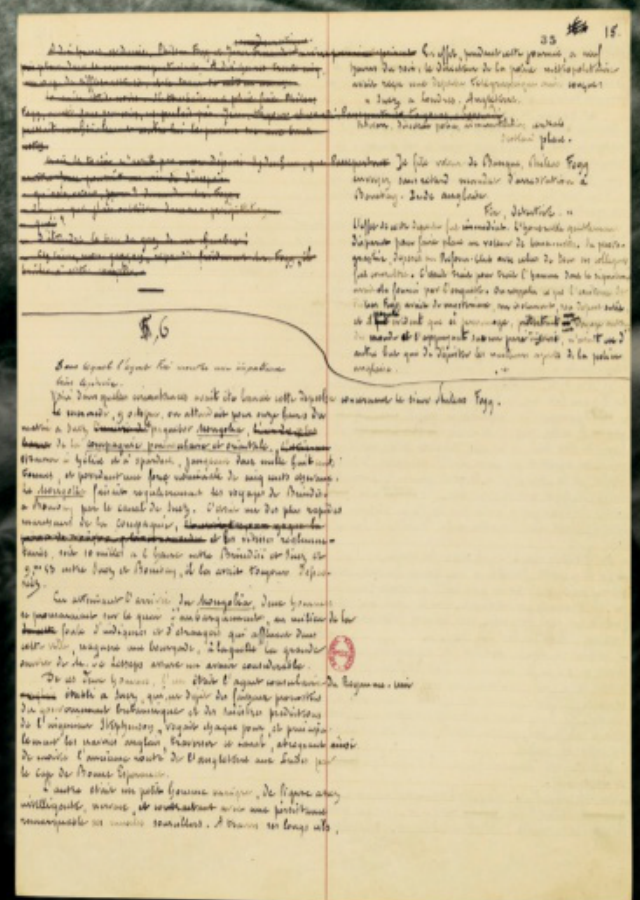
PIERRE-JULES HETZEL
PHOTOGRAPHED BY NADAR IN
1865, SOON AFTER HE EMBARKED
ON HIS HIGHLY (AND MUTUALLY)
LUCRATIVE PUBLISHING VENTURE
WITH VERNE

ADOC-PHOTOS/ALBUM

A Thin Editorial Line

PIERRE-JULES HETZEL was Verne's publisher for over 20 years, following the author's first success with *Five Weeks in a Balloon* in 1863. Hetzel was the brainchild behind the Extraordinary Journeys series of stories, which made Verne's name and both of their fortunes, and when Hetzel died in 1886, Verne's stellar career was undisputed. A veteran of the 1848 revolution and the short-lived republic that followed it, Hetzel was a man of progressive views and an atheist. Even so, he exercised strict control over Verne's works, doing all he could to veto overtly political or religious content, which Hetzel felt might alienate the mass audience that he wanted to cultivate. Despite some forays into pessimism and social criticism, Verne largely respected Hetzel's business instinct. The question of whether Hetzel improved or damaged the artistic merit of the novels is a vexed one. Perhaps, without Hetzel, Verne's tales would have broached contentious issues—slavery, for example, or the loss of religious faith—more often. On the other hand, a character such as Captain Nemo seems to live outside current affairs, and is a product of the pure, storytelling spirit that Hetzel knew Verne's readers adored.

A PAGE OF A MANUSCRIPT OF *AROUND THE WORLD IN 80 DAYS* SHOWING CORRECTIONS TO THE FIRST VERSION, ADDED BY VERNE, IN THE RIGHT-HAND COLUMN

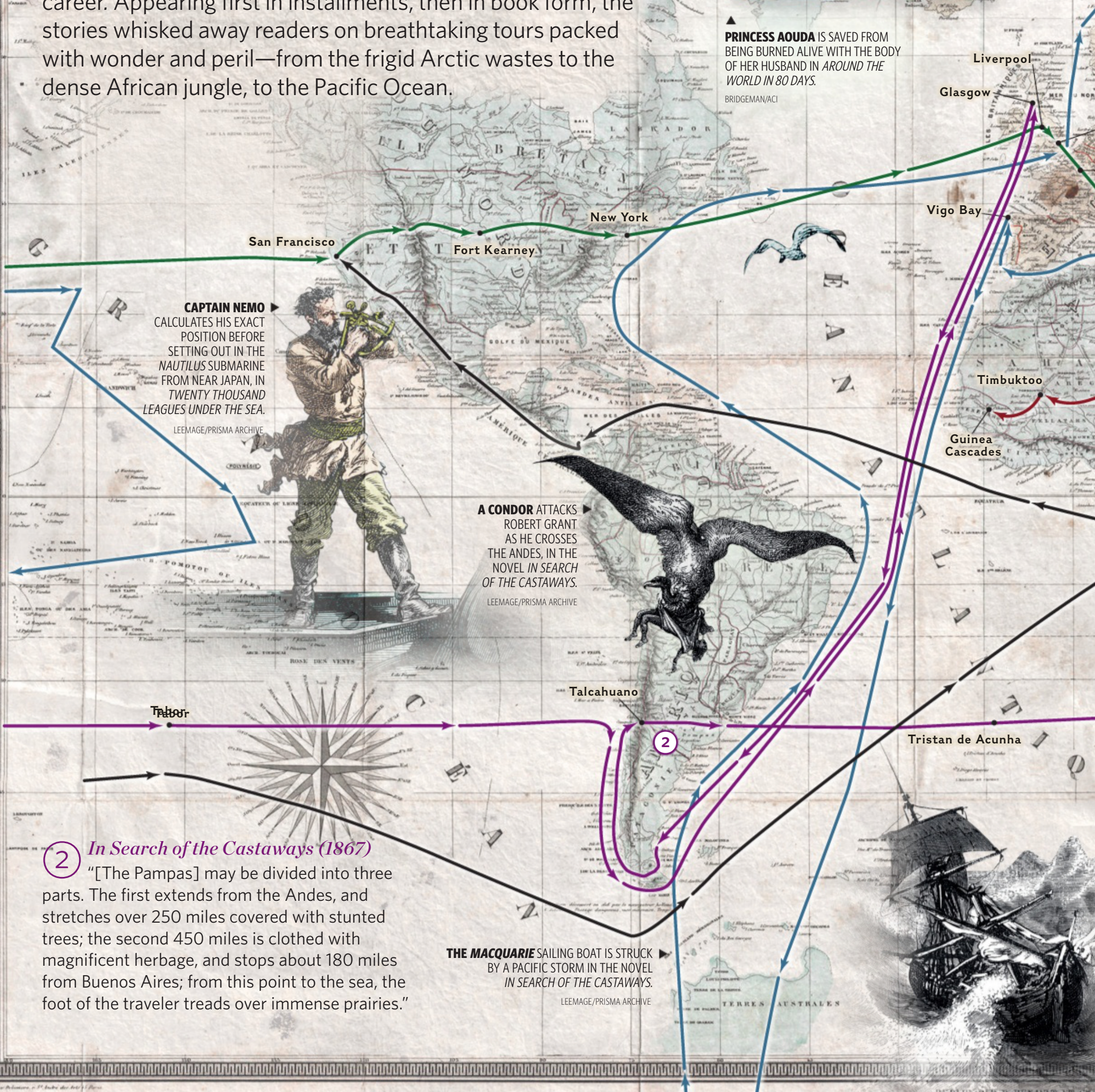


AROUND THE WORLD IN 54 NOVELS

Beginning in the 1860s, Verne published a series of novels collectively known as the Extraordinary Journeys, which would contain an astonishing 54 works by the end of Verne's career. Appearing first in installments, then in book form, the stories whisked away readers on breathtaking tours packed with wonder and peril—from the frigid Arctic wastes to the dense African jungle, to the Pacific Ocean.



▲ **PRINCESS AUDA** IS SAVED FROM BEING BURNED ALIVE WITH THE BODY OF HER HUSBAND IN *AROUND THE WORLD IN 80 DAYS*. BRIDGEMAN/ACI



CAPTAIN NEMO CALCULATES HIS EXACT POSITION BEFORE SETTING OUT IN THE NAUTILUS SUBMARINE FROM NEAR JAPAN, IN *TWENTY THOUSAND LEAGUES UNDER THE SEA*. LEEMAGE/PRISMA ARCHIVE



▲ **A CONDOR** ATTACKS ROBERT GRANT AS HE CROSSES THE ANDES, IN THE NOVEL *IN SEARCH OF THE CASTAWAYS*. LEEMAGE/PRISMA ARCHIVE



② *In Search of the Castaways* (1867) “[The Pampas] may be divided into three parts. The first extends from the Andes, and stretches over 250 miles covered with stunted trees; the second 450 miles is clothed with magnificent herbage, and stops about 180 miles from Buenos Aires; from this point to the sea, the foot of the traveler treads over immense prairies.”

▲ **THE MACQUARIE** SAILING BOAT IS STRUCK BY A PACIFIC STORM IN THE NOVEL *IN SEARCH OF THE CASTAWAYS*. LEEMAGE/PRISMA ARCHIVE





◀ **DETAIL FROM THE BOOK COVER MICHAEL STROGOFF: THE COURIER OF THE CZAR, PUBLISHED BY HETZEL, ILLUSTRATED BY JULES FÉRAT**
BRIDGEMAN/ACI

5 *Michael Strogoff: Courier of the Czar (1876)*

"These winters of Asiatic Russia may be said to be precocious, considering that during them the thermometer falls until the mercury is frozen nearly 42 degrees below zero."

4 *Around the World in 80 Days (1872)*

Passepartout's offer to the Indian "was an alluring one, for, supposing it took the elephant 15 hours to reach Allahabad, his owner would receive six hundred pounds."

3 *Twenty Thousand Leagues Under the Sea (1869)*

"Captain Nemo placed himself under a dark gallery. The light from our lamps produced sometimes magical effects, following the rough outlines of the natural arches and pendants disposed like lustres, that were tipped with points of fire."

1 *Five Weeks in a Balloon (1863)*

"Starting from the soil, delicate jets of water scattered in all directions, crossing and recrossing each other, mingling, contending in the swiftness of their progress, and all rushing toward that nascent stream which became a river. 'Here is, indeed, the Nile!' reiterated the doctor, with a tone of conviction."

6 *Dick Sand: A Captain at Fifteen (1878)*

"Eight days after the departure from the Coanza, twenty had fallen by the way, at the mercy of the beasts that prowled behind the convoy. Lions, panthers and leopards waited for the victims which could not fail them, and each evening after sunset their roaring sounded at such a short distance that one might fear a direct attack."

THE BALLOON VICTORIA
WITH HER THREE CREW MEMBERS, IN AN ILLUSTRATION FROM VERNE'S FIRST BEST SELLER, *FIVE WEEKS IN A BALLOON*
LEEMAGE/PRISMA ARCHIVE

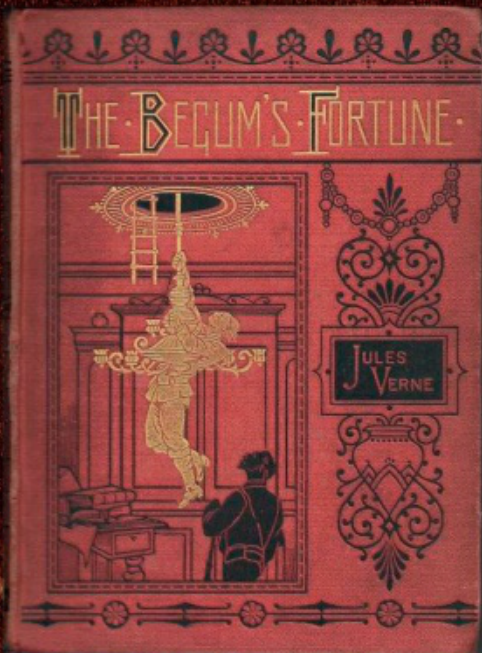
ILLUSTRATION FROM THE COVER OF DICK SAND: A CAPTAIN AT FIFTEEN, WITH DICK, THE TITULAR YOUNG CAPTAIN, IN THE CENTER
LEEMAGE/PRISMA ARCHIVE

MAP: EOSGIS.COM/ING.MAPS. BACKGROUND: ALAMY/ACI

The Darker Side

VERNE'S NOVELS OFTEN portray science as a straightforward benefit to mankind, a wondrous tool in the hands of his characters. But across his astonishingly prolific output, Verne sometimes sounds a more nuanced, skeptical note.

A good example of when the idea of progress brings out his pessimistic streak is *The Begum's Fortune* (1879), in which two scientists, one French and the other German, each found a city in the United States. The Teutonic city is a sinister, militaristic place, dedicated to the production of the materials of war. Thirty-five years before the outbreak of World War I, Verne wrote about the use of poison gas and bombardment from the air. The reason why this dark vision of technology—so different from the optimistic tone of much of his other work—did not play a larger part in his books is usually attributed to the caution of his publisher Hetzel, who was careful not to alienate Verne's mass audience.



FIRST BRITISH EDITION (1880) OF
THE BEGUM'S FORTUNE

SAMPSON LOW

THE TERROR

Verne sounded an ominous note for the future of technology with the flying machine *Terror*, brainchild of the evil inventor Robur in the 1904 *Master of the World* (below).

LEEMAGE/PRISMA ARCHIVE



Submarines and Steamboats

The masterpieces followed fast and furious. Verne would write a total of 54 novels under the Extraordinary Journeys brand, and while many are little known today, some became all-time classics. An early hit was *Journey to the Center of the Earth* (1864). A German uncle and nephew team decipher an old runic map that shows a passage to the Earth's core via an Icelandic volcano. In the depths of the planet, they discover many marvels, including live dinosaurs and a forest of giant mushrooms.

The narrative is highly fanciful, yet at the same time it reflects actual discoveries in paleontology, and the emerging geological consensus that the Earth is much older than had previously been thought.

Work on *Twenty Thousand Leagues Under the Sea* began in 1867. The book

would introduce readers to Verne's most accomplished creation, the enigmatic and austere Captain Nemo. Fiercely intelligent and technologically adept (his name is Latin for "nobody"), Nemo has rejected human society and company and decided to live out his life in the ocean in his submarine, the *Nautilus*.

This astonishing vessel was far beyond the capacity of contemporary science, and the way it produced electricity—distilling it from seawater—is never explained in the novel. Yet, at its publication in 1870, when the first submersible boats had already appeared, it was not beyond all possibility that such a process could one day be developed.

Unlike many writers that came after him, Verne's creations never contradicted the laws of nature. They were tantalizingly out of reach, but a denizen of the late 19th century could not say for certain that their lifetime would not witness such a marvel.

Around the World in 80 Days followed in serialized form in 1872. The story of a Londoner, Phileas Fogg, who makes a wager he can circumnavigate the globe in 80 days, the plot is less speculative than other Verne titles, concentrating on the possibilities (and flaws) of emerging means of transport, such as railroads and trains. As Fogg and his obliging factotum, Passepartout, make their dash across the globe, Verne masterfully ratcheted up the tension by introducing plot twists in each installment to stall or delay their progress.

Throughout their partnership, Hetzel exercised a high degree of editorial control over Verne's works, and it is an interesting question as to how different his novels would have been (and how successful) if the author had been left more to his own devices.

After abandoning his 1863 dystopian novel about Paris, Verne had largely followed Hetzel's strictures, cranking up the adventure while toning down the political and social commentary.

Different Directions

Hetzel died in 1886, and his son took over the business, which included the task of managing their top money-spinning author. Yet even before the death of his publisher, it is possible to distinguish Verne loosening the constraints on his writing by the early 1880s. A more wistful, romantic tone began to appear in *The Green Ray*

AMERICANS IN PARADISE?

American artist N. C. Wyeth illustrated a 1918 edition of Verne's *The Mysterious Island*. In this novel, set during the American Civil War, five Union soldiers use a hot-air balloon to escape from a camp. Stranded on a strange island, they use an albatross to take a message to the outside world.

LEBRECHT AUTHORS/BRIDGEMAN IMAGES







Under the Sea

CAPTAIN NEMO, portrayed by actor James Mason, looks in horror at the giant squid in the 1954 film *20,000 Leagues Under the Sea*. Nemo's adventures aboard the *Nautilus* inspired not only dramatic adaptations but also real-life deep-sea explorers, like Robert Ballard, discoverer of the *Titanic*. In an interview with National Geographic, Ballard described himself as "this kid from Kansas who reads *20,000 Leagues Under the Sea* and wants to be Captain Nemo." It's no coincidence that his state-of-the-art research vessel is also named the *Nautilus*.

LU WORTIG/AGE FOTOSTOCK

Towering Achievement

FOR THE LAST two decades of his life, Jules Verne lived and worked in the impressive Tower House in Amiens, which today serves as the city's Jules Verne Museum. Although his publisher Hetzel's contracts were never overly generous, they did allow Verne to live in some style at this stage in his life. True to the writer's fascination with all things technological, the glass and iron of the tower represented, at the time, the height



of architectural sophistication. From this vantage point, Verne could brood on both the wonders and the dangers of his century's scientific progress. *Propeller Island* (1895), written during this late period, examined the destruction of native cultures in the South Pacific—passages which would later be cut from the English edition for fear of offending either American or British readers.

JULES VERNE'S TOWER HOUSE IN AMIENS, WHERE HE WROTE MANY OF HIS GREATEST NOVELS

ALAMY/ACI

(1882), in which the protagonists go to Scotland in search of the green flash atmospheric phenomenon, but find love instead. *The Carpathian Castle* (1892), set in Transylvania, starts out looking like a novel about the supernatural. In the prologue Verne notes, ruefully, that at the end of the “pragmatic nineteenth century” there is no one to invent legends, even in the most magical countries.

Verne's *Propeller Island* (1895) took his fiction belatedly into the realm of direct social critique. It imagined a vast floating island-city on the Pacific, entirely peopled by millionaires whose power struggles threaten to destroy their float-

VERNE IN A CARICATURE FROM THE MAGAZINE *L'ECLIPSE* (1874), PUBLISHED TO COINCIDE WITH THE PREMIERE OF A STAGE VERSION OF *AROUND THE WORLD IN 80 DAYS*

BRIDGEMAN/ACI

ing habitat. Around this stage in his life, Verne regretted that he had not made more overt reference to the political situation of his time. Tumultuous events such as the Franco-Prussian war of 1870, or the Paris Commune of the following year, make no impression at all on work that so prided itself on detail that he sometimes included the longitude and latitude measurements of his characters' locations.

As the 19th century, and Verne's life and career, drew to an end, there was little letup in his productivity. He served four terms as a conservative councillor in Amiens between 1888 and 1902 and contributed to the town's cultural scene. He messed about on boats, either on the Somme River or at Le Crotoy, a port on the Channel coast. The great writer of globe-trotting adventures would finally die in Amiens in 1905, and is buried in the city where he spent much of his life.

Long Legacy

From a commercial perspective, and taking the long view, Hetzel's intuitions seem to have paid off. Verne's legacy has endured remarkably: UNESCO's index of most translated authors currently places him at number two, where he is bested only by Agatha Christie. He ranks above William Shakespeare, who is just below him at number three.

The list of authors he has influenced is long. Science fiction novelists such as H. G. Wells and Arthur C. Clarke owe Verne a direct debt of gratitude. In the 20th century, surrealist painters such as Max Ernst explicitly referenced him in their work.

Jules Verne's works seem tailored for films. The cinematic era dawned in the last years of Verne's own lifetime with Georges Méliès's 1902 *A Trip to the Moon*, based in part on Verne's 1865 novel, *From the Earth to the Moon*. Film versions of his books are still being made, inspired by his now fashionable steampunk aesthetic. An action movie with the impeccably Vernian title *The Aeronauts*, about Victorian-era explorers in a gas balloon, opened in 2019. Strangely, now that humans really have been to the moon, and taking 80 days to travel around the world is no longer anything to boast about, Verne's focus on how humanity uses its technological marvels seems to fascinate more than ever. ■

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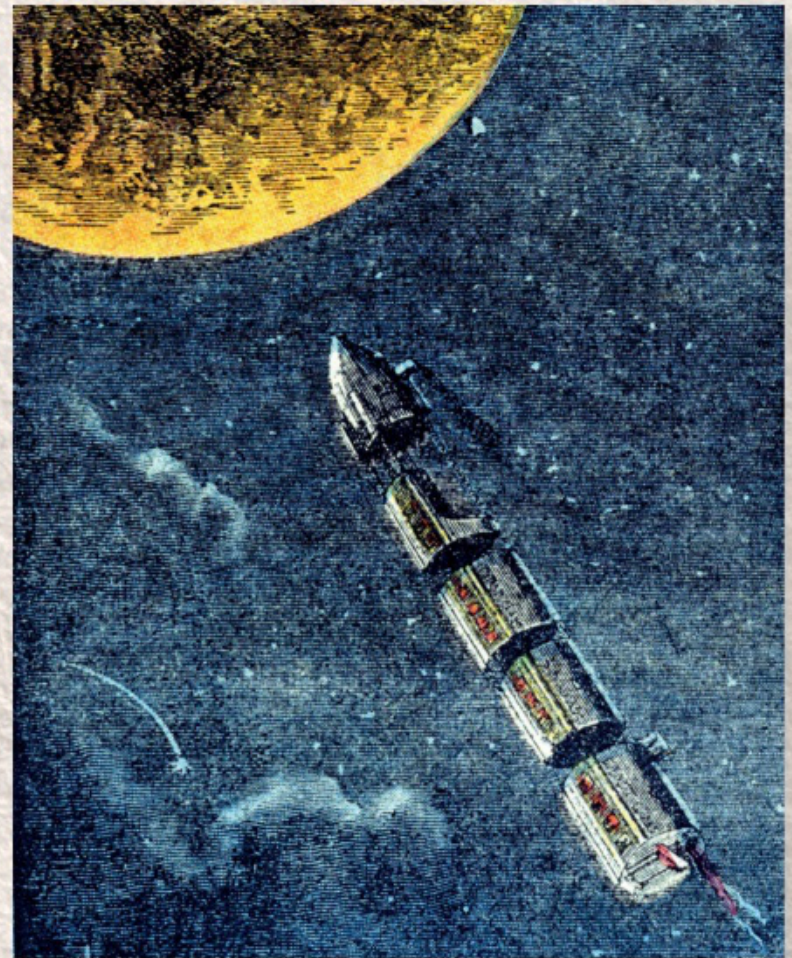
NIGHTS AT THE CIRCUS

The Jules Verne Circus in Amiens was inaugurated by the city's famous writer in 1889, in his capacity as a municipal councillor.

ALAMY/ACI

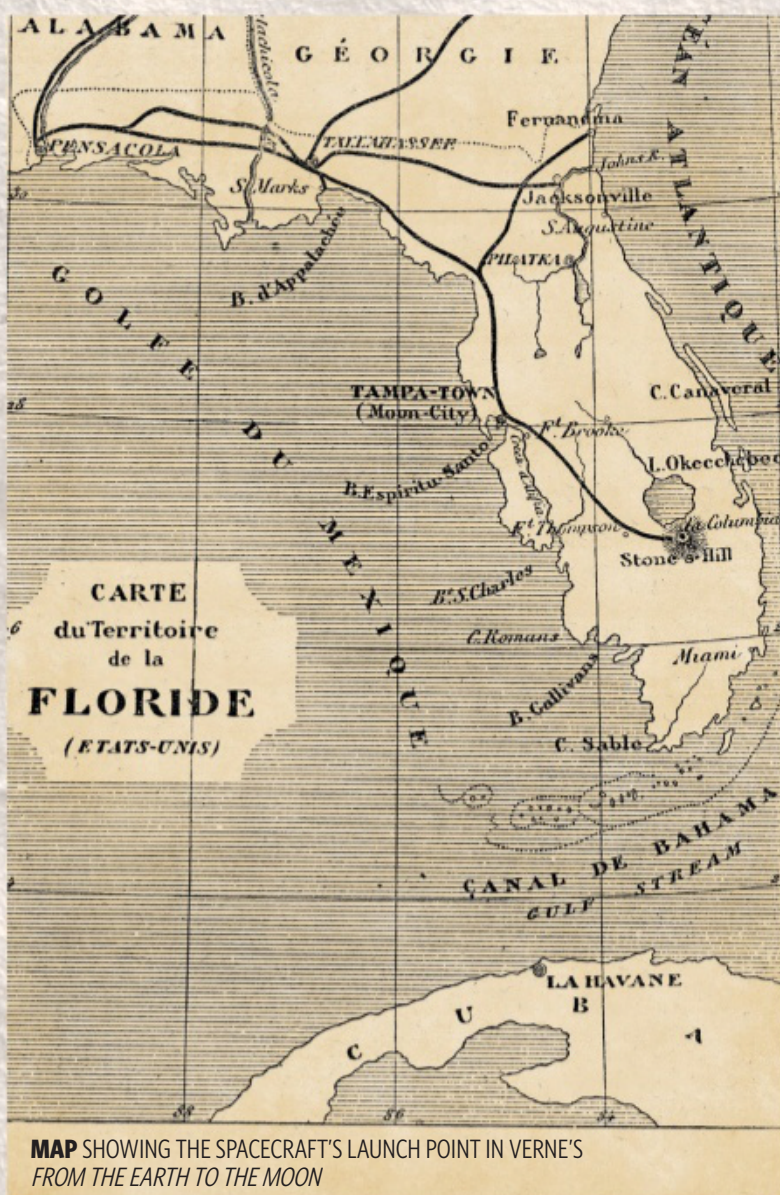
LUNAR LANDINGS

JULES VERNE'S NOVEL FROM THE EARTH TO THE MOON (1865) and its sequel, *Around the Moon* (1870), describe the launch of a spaceship and its orbit around Earth's only satellite. There are curious similarities to the Apollo 8 mission, which nearly a century later, became the first crewed craft to orbit the moon in 1968. Both expeditions had a three-man crew; the rockets were of a similar size and weight; and both followed a similar trajectory before splashing down in the Pacific Ocean. Verne made detailed calculations of the time needed to reach the moon and the effect of orbit on the spacecraft. He worked out that the optimal starting point would be close to the 28th parallel as this would give the most direct trajectory, which informs his choice of Tampa as a launch scene, 125 miles from Cape Canaveral, where the NASA launch base for the Apollo missions would be built.

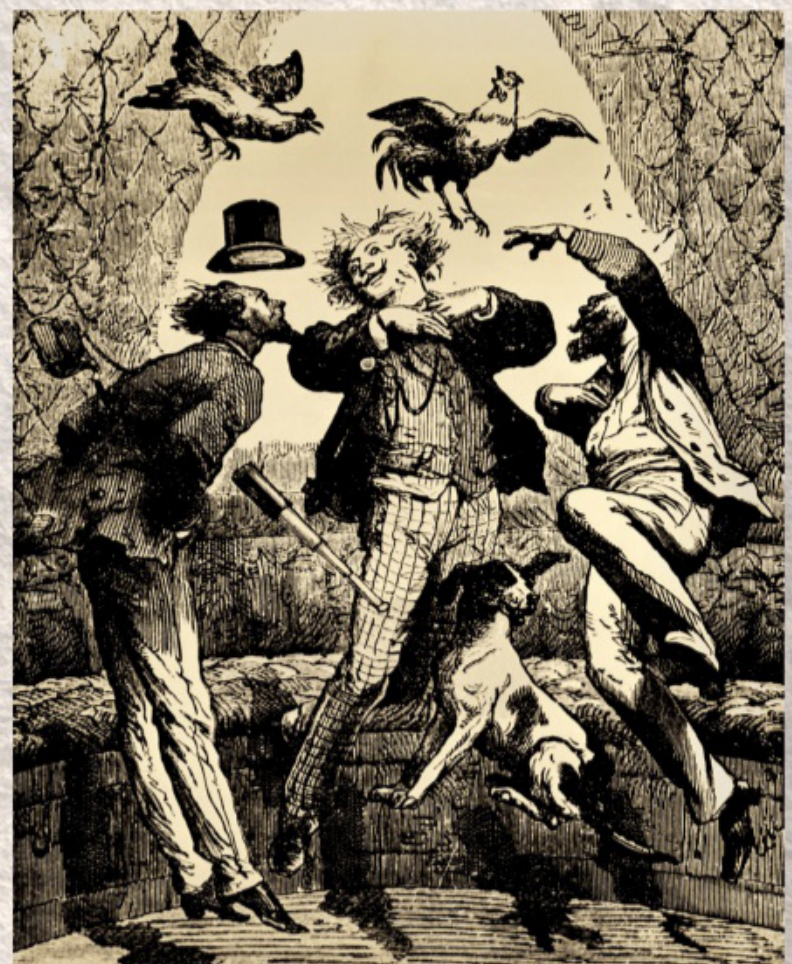


1 All aboard the space train

French rocket pioneer Michel Ardan estimates that the 80,400-league journey will take 97 hours: "Soon a service of trains will be established by projectiles, in which the lunar journey will be easily accomplished."

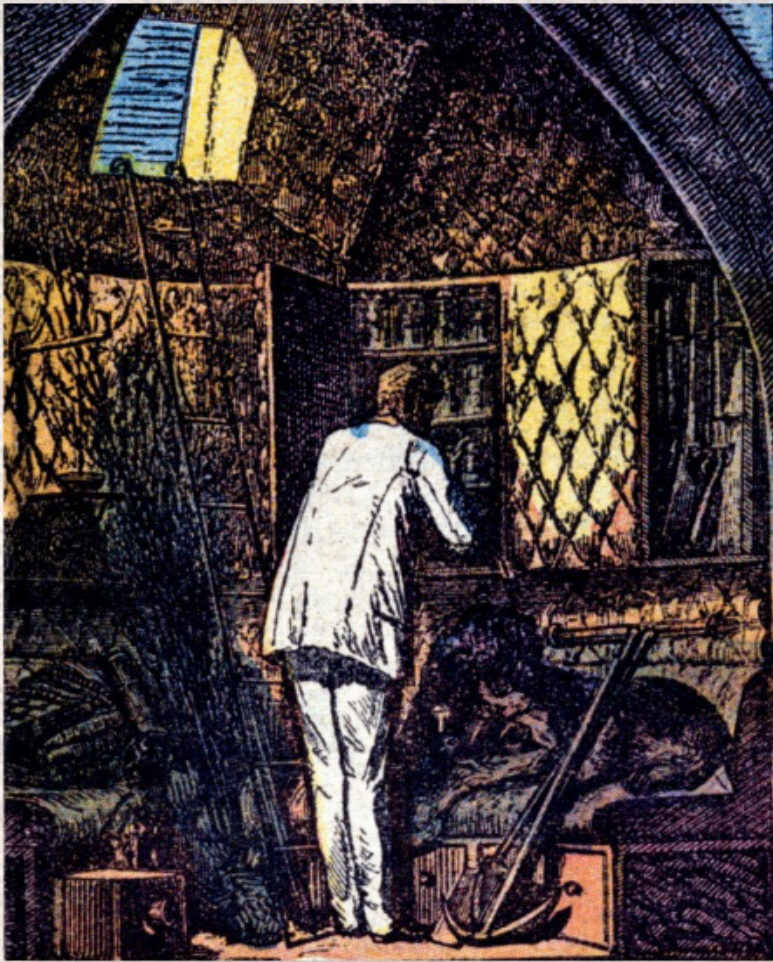


MAP SHOWING THE SPACECRAFT'S LAUNCH POINT IN VERNE'S *FROM THE EARTH TO THE MOON*



4 Gravity

Verne describes the effect of zero gravity on the crew: "Through the counteraction of attractive forces, these men could tell no difference between light substances and heavy substances, and absolutely had no weight whatever themselves!"



2 Preparations

Verne's crew carry thermometers, barometers, and telescopes, as well as weapons and "clothing adapted to every temperature, from that of polar regions to that of the torrid zone."



3 Liftoff

A large cannon was to launch the rocket at seven miles a second. But Verne's calculation does not take into account the resistance of the atmosphere, which in reality would have torn his spacecraft to pieces.



5 Observation

"Putting the glass to his eye, Barbicane examined the clefts for some time. He saw that their banks were sharp edged and steep . . . These peculiarities of the lunar surface had interested the astronomic mind to a very high degree at their first discovery."



6 Landing

Looking skyward, the crew of the frigate U.S.S. *Susquehanna* see "a ball of dazzling brightness, directly over their heads and evidently falling towards them." After the rocket splashes down in the Pacific, the frigate crew help the astronauts to safety.