



Jules Verne, who dressed the future in Victorian clothes. *Copyright Jody Steel*



“Fulminations and Fulgurators”: Jules Verne, Karel Zeman, and Steampunk Cinema

John C. Tibbetts

However, one thing is certain, and that is that I have embarked upon an extraordinary adventure.

—Simon Hart in Jules Verne’s *Facing the Flag* (1896)

If men go on inventing machinery they’ll end by being swallowed up by their own inventions.

—Kennedy in Jules Verne’s *Five Weeks in a Balloon* (1862)

Many of us who saw *The Fabulous World of Jules Verne* during its first release in 1961 never forgot it. As a Victorian-era retrovision, it pinned upon the map of the nineteenth century a series of wildly anachronistic technologies derived from Verne’s fertile genius. People sailed the seas in submarines, flew the skies in bizarre machines, and waged war with rocket missiles. Live-action images mingled with animated steel engravings. It was like a quaint storybook for young and old whose “once-upon-a-time” quality was a blend of *never-was* and *might-have-been*. Now, after almost half a century’s absence, *The Fabulous World of Jules Verne* (1958) is back in video and YouTube formats and delighting a new generation, while the older generation greets it with an old affection and a new respect. Moreover, we can recognize it now as a proto-steampunk movie—although the term would not be invented by K. W. Jeter for another thirty years after its release—since it matches the definition recently advanced by Jeff VanderMeer: “STEAMPUNK = Mad Scientist Inventor [invention (steam × airship or metal man/ baroque stylings) × (pseudo) Victorian setting] + adventure plot.”¹

Writer Howard Waldrop greeted the film's rerelease in 2004 with boyish enthusiasm:

It is the ultimate Steampunk movie; the inventions here seem like 1890s projections of what planes, machine-pistols, and giant cannon might look like in an alternate history. . . . *The Fabulous World of Jules Verne* is of its time, about another time—you watch it now with a double-focus that wasn't there when 1958 was *The Present*.²

This whimsical mixture of satire and silliness, of science and speculation, of animation and live action, is as much a creation of the renowned Czech animator, Karel Zeman (1919–1989), as it is of Verne (1828–1905) himself. Working in the tradition of Georges Méliès, Zeman created in this and in his other Vernian films a unique vision of motion-picture technology wholly appropriate to Verne's time, even though, paradoxically, the novelist himself seems to have paid little attention to it. I will argue here that Zeman envisioned *the film apparatus* itself as a kind of steampunk machine, whose mechanism of intermittent movements, interlocking cogs, gears, and escape-ments, transforms through the agency of light and chemistry Verne's printed page into celluloid fantasies that *move* and *dream*.

Verne's Imagination, on Screen

Before Joseph E. Levine brought Zeman's film to America in 1960 in a dubbed version retitled *The Fabulous World of Jules Verne*, the Czech-produced film was known abroad as *Vynález Akazy* (*The Deadly Invention*).³ It is based on one of Verne's later novels, *Face au drapeau* (*Facing the Flag*), part of Verne's *Voyages Extraordinaires* series.⁴ After its premiere in Czechoslovakia on 22 August 1958, it appeared at Expo '58 in Brussels, where it won the Grand Prix at the International Film Festival. More awards in the following months included a Silver Sombrero at the First International Film Festival in Guadalajara, a Czechoslovak Film Critics Award, and a Crystal Star from the French Academy of Film. Critic Pauline Kael hailed it at the time as a "wonderful giddy science fantasy" that "creates the atmosphere of the Jules Verne books."⁵

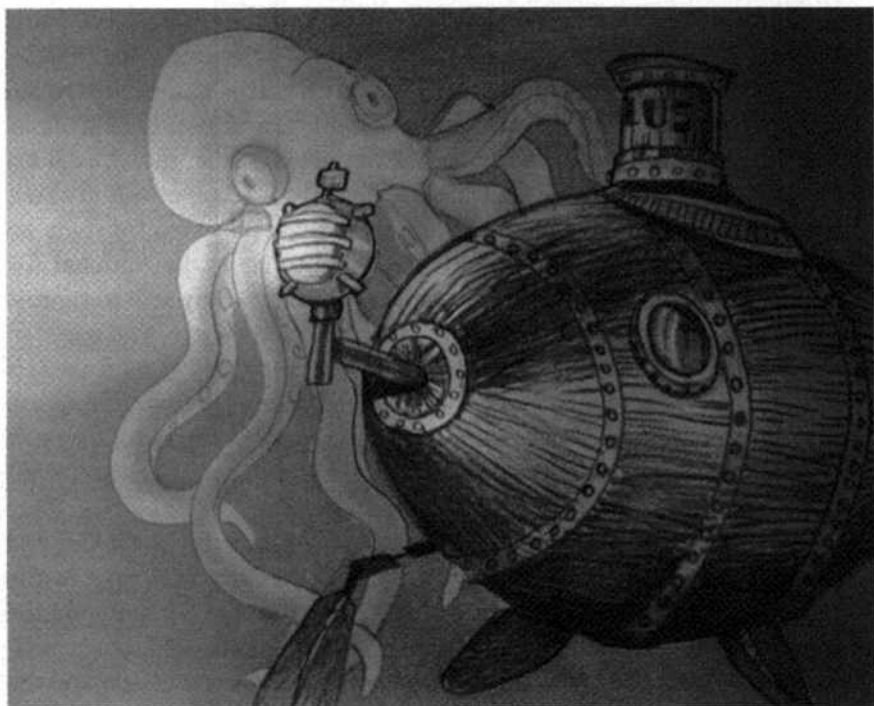
Described as "the Czech Méliès," in recognition of the whimsies and innovative daring of his animation, Zeman was, with his countrymen Jiri Trynka and Bretislav Pojar, a leader in *cinéma d'animation*, a French term designating techniques in hand-drawn, puppet, object, and photographic frame-by-frame exposure. Trained in France and his native Czechoslovakia, Zeman got his start in the 1940s with puppet films. Working at the Gottwaldov studios in the 1950s, his *A Journey to Prehistoric Times* began the series of fantastic, live-action/animated films for which he is best known, and which included his celebrated Vernian adaptations *Cesta do Praveka* (*Journey to the Center*

of the Earth) in 1962, *Ukradena vzducholod* (*The Stolen Airship*) in 1967, and *Na kometě* (*Off on a Comet*) in 1970.⁶ Even more ambitious than Vynález Akazy, in terms of budget, the use of color, and orchestral scores, they retain nonetheless Zeman's characteristic storybook charm and arsenal of artificial effects. *Na kometě* takes things further with animated sea monsters, land lizards, and dinosaurs. Although outside the immediate scope of this chapter, they are all marvelous adaptations of Verne and deserve extended study on their own.⁷ According to Michaela Mertova, a historian at the National Archive in Prague, "[Zeman] was one filmmaker who was really able to capture the imagination of works by Jules Verne. In visual terms, there is no question the films continue to resonate with audiences even today." Even if viewers were aware they were seeing an artificial world, continues Mertova, "it was so alive, so natural, that audiences were never distracted by the tricks."⁸ As part of a "rediscovery" of Zeman's works, a centenary program of Zeman's films was presented in 2010 at the Czech Centre in London.⁹

Verne's ambivalence regarding the benefits of science in *For the Flag* and other novels is typical of his times. He grew up precisely at a time in the nineteenth century when the cities of New York, Paris, and London were the epicenters of a vast technological upheaval. "There is no doubt," writes Mike Ashley, "that it was the opening up of the world through steam trains and the opportunities that steam power introduced that ushered in the Industrial Revolution and began the true scientific revolution that allowed science fiction to prosper."¹⁰ New technologies were escaping the solitary inventor's laboratory and were becoming mass-produced commodities. Machines were replacing muscle, and the airwaves supplanted keen eyes and ears. As biographer Herbert R. Lottman says, "That so many things suddenly became possible suggested to the prescient that more and better inventions lay just around the corner."¹¹

Based on the many explorers of the times penetrating jungles, traversing deserts, and mapping the skies, Verne's inventors deployed and expanded available technologies to build improbable propeller-driven, heavier-than-air flying machines to cruise the skies, electrically powered submarines to explore the ocean depths, and experimental weapons of war to threaten the security of the world. They imparted a romantic *frisson* to available science and technology. "[By giving] the ordinary a mysterious appearance," wrote the poet Novalis in his seminal romantic novel, *Henry von Ofterdingen* (published posthumously in 1802), "—the known the dignity of the unknown, the finite an infinite aura, I thus romanticize them."¹² Indeed, Verne's machines, notes cultural historian Cynthia Miller, seem like quasi-magical objects, the latest in a seemingly endless string of fresh technological wonders:

We never see them being built or bought; they simply *are*. These fantastic machines highlight, by their very existence, the character archetypes, narrative tropes, and often, layers of meaning inherent in the storyline of steampunk



Verne's fantastic possibilities. Copyright Jody Steel

texts. Readers and viewers are instantly alert to the machines' potential to remake the social order, and to the damage those devices can do in the hands of the reckless or the ruthless."¹³

Speculations about these fantastic technologies place them squarely in the foreground as a commentary on technology and progress.

Many oft-cited examples attest to the remarkable degree to which some of Verne's "voyages" predicted the future. For example, *From the Earth to the Moon* (1865) and its sequel, *Around the Moon* (1870), predicted many details of the Apollo moon shots.¹⁴ Less well known is the amazing accuracy of his vision of life closer to home in an early novel, *Paris in the Twentieth Century*, written in 1860 but unpublished in his lifetime. He looked ahead to urban life in 1960, where he forecast electrical street lighting, rapid transportation by elevated and underground urban-transit trains driven by compressed air, and gasoline-powered horseless carriages. In the home were mechanical elevators. In the office, a telegraph sent stock quotations around the world, and facsimile documents were transmitted by *telematiques photographique* devices.¹⁵ The book was finally published in 1994, when it created a sensation and moved to the top of the best-seller lists. "I have always made a point in my romances," wrote Verne,

"of basing my so-called inventions upon a groundwork of actual fact, and of using in their construction methods and materials which are not entirely without the pale of contemporary engineering skill and knowledge."¹⁶

Extraordinary Voyages

Verne himself was neither a scientist nor the first person to write science fiction—the term was not in use until the 1920s. But Isaac Asimov insists he was the *first science fiction writer*, the first to *specialize* in the form and the first to make a living at it. Beginning at midcentury, the success of his many novels, his "extraordinary voyages," as he called them, proved "that the public was hungry for adventures told from the new viewpoints that were made possible by science in an age when optimism concerning the coming scientific advances was at its height."¹⁷ In his classic study of science fiction, *New Maps of Hell*, Kingsley Amis pronounced Verne "the first great progenitor of modern science fiction. . . . While usually wrong or implausible or simply boring in detail, his **themes** foreshadow a great deal of contemporary thinking, both inside and outside science fiction."¹⁸ And Arthur C. Clarke wrote, "He was the first writer to welcome change and to proclaim that scientific discovery could be the most wonderful of all adventures. For this reason, he will never grow out-of-date."¹⁹

While researching *For the Flag*, the sixty-eight-year-old Verne, who was living in Amiens at the time, acknowledged to his brother Paul that his character of the inventor Thomas Roch—whose invention of a new explosive, a kind of "doomsday device," is rejected by the international market—was to be based on the real-life French scientist Eugène Turpin. Turpin, like his fictional counterpart, had invented an explosive substance that had been spurned by his country's military. Unlike Turpin, Roch was to be portrayed as a mentally unstable and ruthlessly opportunistic visionary, venting his anger upon a world that turned its back on him. (After the publication of *For the Flag*, Turpin launched a suit against Verne for libel. Contrary to his earlier statements, Verne now denied any such association. The court determined that Turpin had served as inspiration but that Verne had not intended any harm. There could be no libel without intention to harm.²⁰) Perhaps Verne himself was laboring under the increasing realization that his newest books were being overlooked by the public and critics.²¹ He may have seen in Roch's mental instabilities, writes biographer Peter Costello, signs of his own "neurotic symptoms" of "eccentricities of character, melancholy, apathy," abetted by worries over the insanity of his nephew; the death of his beloved publisher, Jules Hetzel; and his own increasing lameness and weakening sight: "Perhaps the only thing that stopped Verne going mad was his very 'serious occupation,' his incessant work."²² Moreover, notes Brian Aldiss, the novel is among several at this time indicating Verne's



Professor Roch (Arnost Navartil): Genius or madman?

disillusionment at the promise of science and frustration at the triumph of what seemed to be a "machine mentality": "Even the brave scientists show signs of deterioration, eccentricity, blindness. The heroic age of the engine is done. Things fall apart, the centre will not hold."²³

Thus, Roch emerges an ambivalent figure and joins the long list of Verne's troubled inventors and eccentrics, including most famously Captain Nemo and Robur and the lesser-known Professor Schultz (modeled after the German industrialist Alfred Krupp).²⁴ However, we can locate this skepticism about the energies of science and technology as early as 1854, in Verne's cautionary tale of scientific hubris and Gothic horror, "Master Zacharias."²⁵ The titular character is a master clockmaker who believes he has animated his clocks into living beings. Life, to him, is merely an "ingenious mechanism," and, as the narrator explains, "As [Zacharias] constructed his clocks, he fancied that he had discovered the secrets of the union of the soul with the body."²⁶ He demonstrates "that vanity of science which connects everything with itself, without rising to the infinite source whence first principles flow."²⁷

Zacharias's legacy is passed on to his most famous counterpart, Robur. First seen as a benevolent hero in *Clipper of the Clouds* in 1886, Robur reappears as a destroyer in the 1904 sequel, *Master of the World*. Robur is not Satan; but in his pride he is satanic. Like a Miltonic Satan, he is cast down from heaven by bolts of lightning and falls to his death in the Gulf of Mexico. Robur could conquer the human race with his inventions; but when he arrogantly attempts to ignore the natural order itself, he is spectacularly defeated. Providence wins.

Since *For the Flag* is one of Verne's least-known novels, a brief synopsis is in order. Inventor Roch is experimenting with the "Roch Fulgurator," a "sort of auto-propulsive engine, of peculiar construction, charged with an explosive composed of new substances."²⁸ Maddened by the rejections of his work, Roch denounces the world, lapses into a state of mental confusion, and is hospitalized in a North Carolina institution, Healthful House. (We are reminded that Verne set twenty-three of his novels in America.²⁹) "It was only too evident that he had lost all notion of things as far as the ordinary acts of life were concerned; but in regard to subjects demanding the exercise of his genius, his sanity was unimpaired and unassailable—a fact which demonstrates how true is the dictum that genius and madness are often allied."³⁰ When a French engineer, Simon Hart, arrives to guard and protect Roch, both men are kidnapped by one Count d'Artigas, who spirits them away in his schooner, *Ebba*. What follows is a series of adventures narrated in Hart's journal. The schooner is "incontestably propelled by some powerful machine . . . perhaps one of those turbines that have been spoken of lately."³¹ Under the command of d'Artigas—actually the fierce pirate Karraje—the *Ebba* and a submarine operate in tandem to attack and destroy shipping. Inside Karraje's hideout,

Hart is kept prisoner while the vengeful Roch is put to work, happy to comply with Karraje's plans to use his explosives against the world.

Hart sends out a warning message. It is answered when an English naval officer, Lieutenant Davon, arrives in his small submarine, "Sword," to rescue Hart and Roch. But Karraje's submarine sinks it, and Hart and Roch are returned to the cavern. Now alerted that an invasion might be imminent, Karraje sets up a number of launching "trestles" about the island to hurl the explosives at approaching warships. "If warships approach within five or six miles," declares Karraje, "they will be sunk before they have had time to fire a single shot."³² However, when Roch hears bugle calls from an approaching French ship and sees the French flag, his patriotism and his sanity are restored. Roch detonates explosives and destroys the entire mountain stronghold, perishing in the process and with him the secret of his inventions. Only Hart survives.

The Fabulous World of Jules Verne begins with an extended opening sequence depicting a fantastic succession of modern technologies in a graphic and whimsical manner that qualifies it as a classic example of what we now call steampunk cinema. "My adventures began when I booked passage on the *Savannah*," narrates Simon Hart (Lubor Tokos), gazing raptly at the skies above him and the seas below—at the propeller-driven flying boats, steam-powered ocean liners, and electrically driven submarines. His rhapsodic celebration of Victorian invention is intoxicating:

It was the first steamship to cross the Atlantic. The sky was clear as we sailed proudly to her destination. And high in the clouds a prodigious sight. Man, who mastered the sea had tamed the land, was now set to challenge the very kingdom of the clouds. All the elements of earth were conquered and forced to yield their most precious secrets. Ah, what an age to live in when each new day brought science ever more glorious triumphs.

Hart continues overland by locomotive, and we see "the steel juggernaut which devoured every obstacle in its path, a machine of steam and steel so cunningly fashioned that it required only the most perfunctory attention from its driver." Then, most miraculous of all, a gigantic sky-boat sails above, a flying platform drawn by propeller engines and maintained aloft by smaller helicopter blades. "Look up there!" shouts Hart. "The *Albatross* [a reference to Robur's great airship]! A fantasy brought to life—the wildest dream of the centuries translated into a way of life by the indomitable genius of man, flying at heights that no human has before attained." It is indeed an age of wonders, he proclaims—"our century, the century of steam power, the age of that mysterious force, electricity, has overthrown tradition and tossed by the wayside old-fashioned ideas and outmoded ways of life."

After a series of adventures by boat and submarine, and kidnapped by Artigas's (Miroslav Holub) goons, Hart and scientist Roch (Arnost Navartil),

find themselves in the castle-like battlements of Artigas's "retreat," an extinct volcano. The befuddled Roch seems unaware of Artigas's dastardly plans to use the Fulgurator to destroy the world. Nothing can stop him, privately declares Artigas: "Although they can bring to bear against us the guns of all the navies in the world, it is yet within our power to reduce them to rusting, burnt out hulks."

Hart sends out his warning message in a small balloon. It is answered by Lieutenant Davon, who arrives in a small submersible equipped with four oars that propel the machine. But Artigas's submarine destroys Davon's vehicle. Hart escapes back to the surface and immediately goes to warn the professor. Meanwhile, a great cannon is built that will launch the professor's explosive shells against a line of approaching warships. An observation balloon will send reports from men with "magnetic telephones" and breathing gear for the high altitude. The professor finally realizes the extent of Artigas's plans. Unobserved, he climbs aboard the cannon and looses a shell from its moorings. It tumbles down the mountain and blows the whole island to smithereens. Artigas's top hat flies up into the air and out the volcano's mouth, a whimsical footnote to the disaster.

Apart from *For the Flag*, *The Fabulous World of Jules Verne* is packed with references to the submarines, grotesque deep-sea creatures, giant cannons, and flying boats of other Vernian adventures. The gigantic cannon replacing Roch's "launching trestles" derives from *The Begum's Fortune*, whose villain, Professor Schultz, intends to use it to destroy entire cities. Other departures include the addition of a romantic interest for Hart (since Verne rarely allowed such trifles to interrupt his narratives). The most significant change involves the character of the inventor Roch. The greedy, opportunistic scientist on a vendetta against an uncaring world in the novel is here simply a scientist so immersed in his experiments he fails to divine the criminal agenda of Artigas. And while in Verne's novel Roch's patriotic instincts are awakened at the last minute, here Roch simply sabotages the cannon out of pique at the misuse of his experiments.

The Magic of Technology

More relevant to the purposes of this chapter, however, are Zeman's visual effects. Utilizing the motion picture animation techniques being developed in Verne's day, most of which were also available to Méliès—magic-lantern dissolves, stop-motion, pixilation, etc.—he translates the technological dreams of Verne's prose into their visual correlatives. He transcends as much as he embodies historical contingency. Oddly, Verne himself, in this and his other novels, displays little, if any, awareness of motion picture technology and its visual effects. As we will see, it is up to Méliès and Zeman not just to *adapt* Verne's story, but to *create* a proto-steampunk vision of their own.

Verne's seeming lack of interest in the developing motion picture technology transpiring all around him at this time is astonishing, particularly inasmuch as his rival, H. G. Wells, exploits its filmic effects vividly in his first novel, *The Time Machine*, published in 1895. The novel appeared precisely at the same time that Verne was working on *For the Flag*, and that news of exciting developments in motion picture technology was already attracting the public and scientists alike. Between 1895 and 1905 numerous inventors and filmmakers all across Europe and America were building and displaying their machines and their moving images. In America there was the Edison/W. K. L. Dickson Kinetoscope and Vitascope; in France, the Lumiere Brothers' *Cinématographe*; in Germany, Maximilian Skladanowsky's Bioscope; and in England, Robert Paul's Theatograph. Wells took notice, even if Verne did not. Wells's "time machine" is obviously a metaphor for the action and effects of the film camera and projector.

Wells was only twenty when he wrote "The Chronic Argonauts" in 1888, the first of several drafts that resulted in the finished novel, *The Time Machine*. It postulated that a machine could be built that mastered time. At the flick of a switch the machine could move forward and backward in time, slowing and accelerating its perceived passage, by turns. Although the first draft contained no description of the actual workings and effects of time travel, it is significant that by 1895, with his growing awareness of filmic technology, Wells describes time travel in a manner, as historian Thomas C. Renzi notes, "that often imitates filmmaking techniques. Some famous examples occur in *The Time Machine*, where the inventor's journey describes the fast-forward and reverse-action modes of film." There are even "additional suggestions of sound dubbing and fade-in and fade-out effects with accelerated movement, reverse-action, stop-motion, and slow-motion."³³

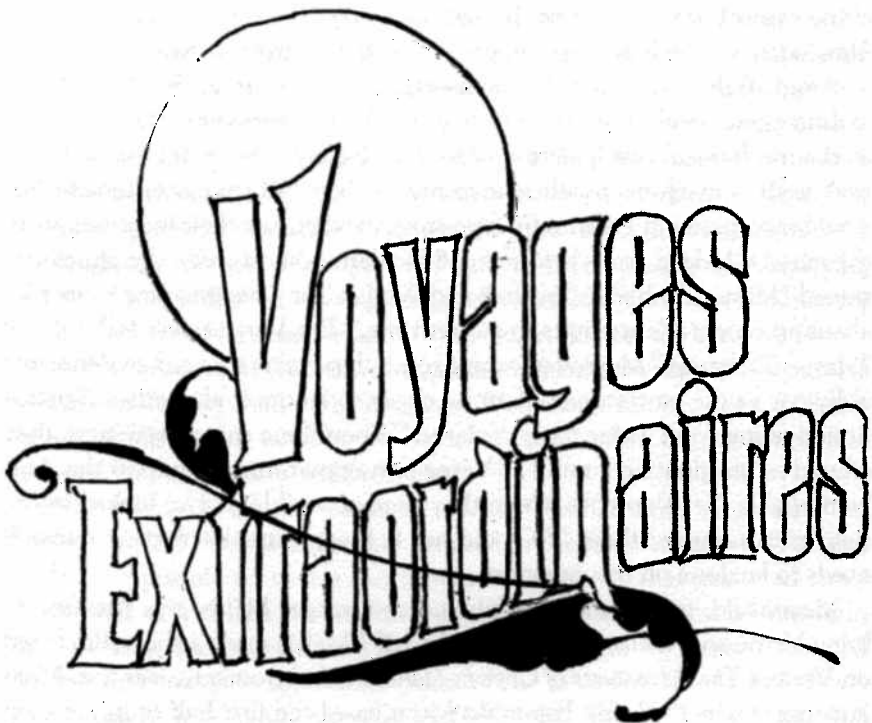
Indeed, the novel not only alludes to those effects, but it may have anticipated the commercial exploitation of the medium itself. Certainly British inventor and film pioneer Robert Paul thought so. "In this story," explained historian Terry Ramsaye, "Paul saw an opportunity to use the special properties of the motion picture in a new and perhaps especially effective method of narration. . . . the evidence is such that if [Wells's] story was not evolved directly from the experience of seeing the Kinetoscope, it was indeed an amazing coincidence."³⁴ At any rate, on 24 October 1895, shortly after the publication of his book, Wells and Paul obtained a provisional patent for a viewing apparatus—a kind of movie theater—wherein viewers would be seated in a compartment, rather like a train car, whose seats would vibrate slightly to impart the illusion of motion. Writing in *The Era* magazine, Paul noted that the spectator would have the sensation of "voyaging upon a ma-

chine through time," viewing through the windows a series of rear-projected films, scenes "which are supposed to occur in the future or past."³⁵

Amid all this, one naturally assumes that Verne, ever on the alert for new technologies, would not only know about these theories and developments in the mechanical manipulation of time and space—an "extraordinary voyage" with a machine rivaling anything he had hitherto envisioned—but would incorporate them into his own stories and pursue their incarnations in the movies. Indeed, years before, in 1854, Verne's short story, the aforementioned "Master Zacharias," anticipated Wells's *The Time Machine* in its plot about an inventor's attempts to master time.³⁶ But Verne never followed up "Master Zacharias." Moreover, extant research suggests that either Verne was oblivious to the motion picture or he chose to ignore it altogether. Science fiction writer John Taine flatly declares, "When these things were new, they offered as imaginative a mind as Verne's an opportunity to surpass the Arabian Nights. Yet Verne, to whom they were accessible had he looked in the right places, missed them."³⁷ Or did he? It is apparent that further research needs to be done on this question.

Meanwhile, former magician/filmmaker Georges Méliès was the first to bring Verne and Wells to the screen. In 1897 Méliès made a short film based on Verne's *The Adventures of Captain Hatteras*. Unfortunately, it is lost. More importantly, in 1902, his *Trip to the Moon* based the first half of its story on Verne's *From the Earth to the Moon* and the second half on Wells's *First Men on the Moon* (which had been initially serialized in *Cosmopolitan Magazine* in 1900–1901).³⁸ It was Méliès's most elaborate and longest film to date, with its eighteen settings amounting to a total cost of ten thousand francs. It ran for several months at the Olympia Theater and was soon seen all over Europe and America. Méliès later declared that *A Trip to the Moon* was "a film that people will talk about after thirty years. It made a deep impression, being the first of its kind."³⁹ Lunar spectacles were already a favorite fairground entertainment at the end of the century. Nicholas Camille Flammarion, who founded the French Astronomical Society in 1887 and had written a novel in the 1870s about interstellar travel, *Masters of Time and Space*, was likely the prototype for President Barbenfouillis. Verne knew Flammarion, and his *Off on a Comet* (1877) was a fictional counterpart to the more sober works of the man.⁴⁰

The iconic image in *Trip to the Moon* of the rocket shell penetrating the eye of the Man in the Moon was Méliès's own contribution. Today's moviegoers know it as the guiding image of Martin Scorsese's *Hugo* (2011). For historian Lynda Nead, that image represents "a symbolic vision of the end of an astronomical science based on the transcription of the observation of the eye and the triumph of a new astronomy based on the superior gaze and representational capacities of the camera lens." Images like this "disturbed



What did the inventor of the extraordinary think of motion pictures? Copyright John C. Tibbetts

the idea of a fixed viewing position, [creating] a dynamic, kinetic viewer whose point of view was just as likely to be that of the Lunarian or Martian as that of an inhabitant of earth." It epitomizes, continues Nead, "the fusion of scientific investigation and fantasy . . . to look at a photographic image of the moon was to detach oneself from the everyday things of the earth and to embark on the first stage of an endless celestial voyage."⁴¹ In words that could be applied to Verne himself, John Frazer notes, in his study of Méliès, "In treading the line between parody and prediction Méliès captured the ambivalence felt by people at the turn of the century as they attempted to accommodate to the forward rush of science."⁴²

Two years later Méliès produced another Vernian property, this time derived from the 1882 Verne/d'Ennery stage production of *The Impossible Voyage*, at the Théâtre de la Gaîté. While the stage adventure featured a trip to the center of the Earth, the film ventured further and explored the interior of the sun. The trip is mounted by the Institute of Incoherent Geography. An engineer unveils his remarkable vehicles, an automobile, a dirigible, a

submarine. The train travels through the heavens, past stars and comets, and flies into the yawning, open mouth of the sun. Again, turning to John Frazer: "Méliès predicted the technological wonders of our time with a sense of humor that retains the human dimension. . . . Living at a period of rapid social change, in the climate resulting from the accomplishments of the industrial revolution, Méliès employed the resources of technology to express emerging perceptions about the future."⁴³

In their retro vision of Jules Verne, Méliès and Zeman achieved a disorienting *strangeness* of effect that, to me, is an essential element of steampunk in general. They reveled in their antique artifice, they gloried in it, no matter how crude or primitive it may seem in comparison to the glossier, more sophisticated adaptations to come later from Hollywood. Beginning in the 1950s and 1960s, *20,000 Leagues Under the Sea* (1954), *Journey to the Center of the Earth* (1959), *The Mysterious Island* (1961), and *Master of the World* (1961) tended to mute the *verfremdung* effect so essential to steampunk, emphasizing instead the *realism* of the machines and the effects of the monsters. The more real, the less fantastic. Conversely, the more surreal, the more an *independent reality* is achieved. Similarly, compare the relative clunkiness of television's *Wild, Wild West* (1965–1969) with its smoother, more sophisticated recent 1999 film version. Only the first version seems to derive naturally—or, unnaturally—from the mid-nineteenth-century era from which it properly springs.

Thus, when Zeman decides to add to Verne's story a cinematic device, he deliberately chooses a clumsy nineteenth-century magic lantern apparatus: Artigas returns from one of his criminal errands and brings with him "a new invention which causes pictures to move on a screen." He mounts a kind of Zoetrope device with flat, circular discs with images around the rim to a magic lantern, and he rotates them by crank in front of a magic lantern beam. The flickering, animated slide show is a kind of illustrated newspaper, featuring a story that reveals a move against Artigas's island by infantry and a submarine. The effect is engagingly clumsy, yet wholly consistent with the rest of the film's artifice.

Similarly, Zeman's quaint deployment of effects—stop-motion, paper cutouts, drawings, animation, painted backdrops and foregrounds, dissolves, miniatures and models, double exposures, still images, and traveling and stationary mattes—inflects the live action and renders it . . . *unfamiliar*. A meticulous craftsman, Zeman carefully contrives a *faux* crudity of these effects. Coming to life are the steel engravings so popular with Victorian illustrators and familiar to Verne's readers—in this case the celebrated illustrations by Verne's favorite illustrator, Leon Bennet (1873–1910), who illustrated twenty-five of the *Voyages Extraordinaires*. The striations of Bennet's images are cleverly duplicated on screen by inscribing on the characters' clothing

and the sets imitations of the engraved line patterns and double-exposing live-action footage with striped screens. Thus, moving waves of *real* water take on the appearance of *engraved lines*. All the while, as we watch, we are caught up in the wonder of the artifice, which suspends us between the reality of live action and the fantasy of an animated dream. "The variety of tricks and superimpositions seems infinite," reported Pauline Kael in her aforementioned review. "As soon as you have one effect figured out another image appears to baffle you." One of several examples she cites is a scene of Artigas's sailors in their rowboat on the stormy seas: "The sailors in their little striped outfits are foreshortened by what appears to be the hand of a primitive artist. Then the waves move, the boat rises on the water, and when it lands, the little sailors—who are live actors—walk off, *still foreshortened* [my italics]."44

Historian Harriet R. Polt, writing in 1964, provides some on-site glimpses into Zeman's working methods:

While I was at Gottwaldov last summer, Zeman was just shooting an exterior on the hill above the studio. The camera was set on a platform on which Zeman, his cameraman, and a couple of assistants, all in shirt-sleeves or shirtless, worked. . . . Erected on a rather flimsy scaffolding in front of the camera was an enlarged photograph of a drawing of a castle, with two wing-like projections (representing the sides of a road leading to the castle) coming out of its gates.⁴⁵

He then combines photographed backgrounds and live action directly by the camera. For his interior scenes, "Zeman often uses small drawn scenes which are placed near the camera so as to appear large. A small area of a corner of the scene will be cut away, and through this the actual scene and the live actors will be photographed."⁴⁶

The results of this attention to detail create the sort of delightful story-book quality that can be such an attractive aspect of steampunk. Howard Waldrop's delight is infectious, like a child savoring his first magic theater experience:

There's a scene of a train coming down a track—the *train* is drawn; the *wheels* and the *tracks* are animated; the (real) engineer stands on an open platform in the engine's cab and (real) people lean out of the (drawn) passenger car. (It's so simple and powerful it takes your breath away.)⁴⁷

Elsewhere, Waldrop notes:

Actors walk through back-projected sets; at the same time they're walking *behind* animated full-sized paper cutouts of spinning flywheels and meshing gears, all this in front of a painted set in the middle-background. For maybe five seconds of screen time.⁴⁸

A variety of other whimsical touches abound. When Count Artigas reaches for a pistol to shoot down Hart's departing balloon, it doesn't fire. He hands it to his assistant, who shrugs and, in close-up, *winds up* the pistol, which now rapidly spits out bullets. In another scene two fish, mirror images of each other, collide, melt into each other, and are transformed into a beautiful white butterfly that flutters easily away into the depths. As for the actors portraying the villains—at least the live-action ones as opposed to the paper cutouts and puppets—they behave on screen *like* puppets in a sort of Victorian slapstick manner, as if slightly pixilated (which they doubtless are, in one way or another). And yes, there's a trusty frock-coated gentleman appearing atop a steam coach and occasionally tooting his little trumpet for no apparent reason, other than it's the thing to do. All the while the music score rattles and bangs away, sometimes as a deranged harpsichord accompanying and imitating the actions of the bizarre machines, and sometimes as more velvety sounds in the strings cushioning the romantic moments.

Karel Zeman brings the imagination of Jules Verne and the vision of Georges Méliès into the world of today's steampunk culture. As first mate on the decks of Captain Nemo's *Nautilus*, he brings on board with him a most improbable machine. Cranked by hand, it is a clatter of intermittent movements and an engagement of wheels and gears. The beam of light it emits penetrates the darker reaches of our imagination. Through its agency, still images move, reality dreams, and a "never-was" converges with a "might-be." This fabulous apparatus is called the motion picture, and it magically traverses time and space, reality and fantasy. It provokes and disorients us, as all steampunk fantasies should do. Ursula Le Guin once best described the effect: "When fantasy is the real thing, nothing, after all, is realer."⁴⁹

Notes

1. Jeff VanderMeer, *The Steampunk Bible*, coauthored with S. J. Chambers (New York: Abrams, 2011), 9. Writing in *Locus*, issue 315, April 1987, Jeter stated, "Personally, I think Victorian fantasies are going to be the next big thing, as long as we can come up with a fitting collective term . . . something based on the appropriate technology of the era; like 'steampunks,' perhaps."

2. Howard Waldrop and Lawrence Person, "The Fabulous World of Jules Verne," *Locus online* (13 October 2004), n.p., <http://voyagesextraordinaires.blogspot.com/2007/12/Fabulous-world-of-julesverne1958.html> (4 February 2012).

3. See Thomas C. Renzi, *Jules Verne on Film* (Jefferson, N.C.: McFarland, 1998), 52–58.

4. Verne's fifty-four-volume series, *Voyages extraordinaires*, was inaugurated in 1866 with *The Adventures of Captain Hatteras* and over the next half century would comprise sixty-four works.

5. Pauline Kael, "The Deadly Invention," quoted in *5001 Nights at the Movies* (New York: Henry Holt, 1982), 179.

6. For details about Czech animation in the 1940s through the early 1960s, see Harriet R. Polt, "The Czechoslovak Animated Film," *Film Quarterly* 17, no. 3 (Spring, 1964): 31–40. These quotations are from pages 32–34.

7. *Na kometě* (*Off on a Comet*) can be seen in its entirety on www.youtube.com/watch?v=LQe5_zKeNzA, and *Ukradena vzducholod* (*The Stolen Airship*) on www.youtube.com/watch?v=1dobJ1PJcDk.

8. Quoted in Jan Velinger, "Karel Zeman—Author of Czech Animated Films Including the Mixed-Animation Classic, 'Journey to the Beginning of Time,'" www.radio.cy/en/section/czechs/karel-zeman.

9. See www.london.czechcentres.cz/programme/travel-events/karel-zeman.

10. Mike Ashley, "When Steampunk Was Real," in *Steampunk Prime: A Vintage Steampunk Reader*, ed. Mike Ashley (New York: Nonstop Press, 2012), 8.

11. Herbert R. Lottman, *Jules Verne: An Exploratory Biography* (New York: St. Martin's Press, 1996), 44.

12. Novalis, *Henry von Ofterdingen*, trans. Palmer Hilty (New York: Frederick Ungar, 1982), 77.

13. Quoted in John C. Tibbetts, *The Gothic Imagination* (New York: Palgrave Macmillan, 2011), 354.

14. Lottman, *Jules Verne: An Exploratory Biography*, 335–336.

15. Lottman, *Jules Verne: An Exploratory Biography*, 101–103.

16. Peter Costello, *Jules Verne: Inventor of Science Fiction* (New York: Scribner, 1978), 186.

17. Isaac Asimov, *Asimov on Science Fiction* (New York: Doubleday, 1981), 185.

18. Kingsley Amis, *New Maps of Hell* (New York: Harcourt, Brace, 1960), 34.

19. Arthur C. Clarke, Introduction to Jules Verne, *From the Earth to the Moon* (New York: Dodd, Mead, 1962), viii.

20. Lottman, *Jules Verne: An Exploratory Biography*, 303.

21. Lottman, *Jules Verne: An Exploratory Biography*, 295.

22. Costello, *Jules Verne: Inventor of Science Fiction*, 165.

23. Brian Aldiss, *Billion Year Spree* (New York: Doubleday, 1973), 96.

24. In *The Begum's Fortune*, the evil Professor Schultz builds a secret arms factory intended to produce weapons of mass destruction against its targets. "It will be a whole battery hurled through space," explains Schultz, describing the operation of the cannon and its shells, "to carry flame and death into a town by covering it with a shower of inextinguishable fire!" "The Begum's Fortune," in *Strange Signposts: An Anthology of the Fantastic*, ed. Sam Moskowitz (New York: Holt, Rinehart and Winston, 1966), 109.

25. This remarkable but little-known story, which contains a clockwork man of demonic aspect, reveals the influence of the German master of the Gothic tale, E. T. A. Hoffmann, particularly in tales like "The Sandman," which features clockwork automatons. See "Master Zacharias," in *Science Fiction: Stories and Contexts*, ed. Heather Masri (New York: Bedford/St. Martin's, 2008), 478–503. All quotations are taken from this edition.

26. Masri, *Science Fiction: Stories and Contexts*, 486.

27. Masri, *Science Fiction: Stories and Contexts*, 494.

28. In its description and operation, it prefigures modern rocketry, particularly the Nazi V-2 rockets and the ICBMs of today. All quotations from *For the Flag* are taken from an anonymous translation first published in America in 1897 and later republished by Hurst and F. M. Lupton in 1903.

29. Verne's trip to America in 1867 on *The Great Eastern* steamship had a profound impact on his books. Upon returning to France after six days of tours of New York, Brooklyn, Albany, and Niagara Falls, he set portions of 20,000 *Leagues Under the Sea* and twenty-nine other novels in the areas he had observed. "It is hard to think of any other major nineteenth-century writer," claims biographer William Butcher, "who rejected his roots to the extent of attempting to think in another culture." See William Butcher, *Jules Verne* (New York: Thunder's Mouth Press, 2006). See 209, 75–182. Even before this, Verne's reading of two American writers, James Fenimore Cooper and Edgar Allan Poe, had had a decisive impact on his own work.

30. Jules Verne, *For the Flag*, 4.

31. Jules Verne, *For the Flag*, 38.

32. Jules Verne, *For the Flag*, 115.

33. In Wells's later story, also published in Verne's lifetime, "The New Accelerator" (1903), two men take a drug that speeds up their bodies' systems and observe the retarded movements of people, animals, and vehicles, a mimicking of film's slow-motion effect. And foreshadowing the camera's high-angle shot, the narrator of *The War of the Worlds* describes the evacuation of London as if "seen from a balloonist's perspective." See Thomas C. Renzi, *H. G. Wells: Six Scientific Romances Adapted for Film* (Metuchen, N.J.: Scarecrow Press, 1992), 6.

34. Terry Ramsaye, "Robert Paul and *The Time Machine*," in Harry M. Geduld, *The Definitive Time Machine* (Bloomington: Indiana University Press, 1987), 196.

35. Quoted in Ramsaye, "Robert Paul and *The Time Machine*," 196.

36. In "Master Zacharias" the mad clockmaker, Zacharias, declares, "I cannot die, I, the first watchmaker in the world; I, who, by means of these pieces and diverse wheels, have been able to regulate the movement with absolute precision! Have I not subjected time to exact laws, and can I not dispose of it like a despot? Before a sublime genius had arranged these wandering hours regularly, in what vast uncertainty was human destiny plunged? . . . I have regulated time, time would end with me! It would return to the infinite, whence my genius has rescued it." See Masri, *Science Fiction: Stories and Contexts*, 491.

37. Quoted in Costello, *Jules Verne: Inventor of Science Fiction*, 188. In *The Carpathian Castle* (1889) Verne imagines an apparatus that only tangentially could be considered a progenitor to the talking picture. He made use of Edison's improved phonograph with its wax cylinders, used in conjunction with mirrored reflections, to convince a superstitious crowd of people that the ghost of a dead opera singer can be seen and heard. But even here, avers biographer Peter Costello, "no hint of the possibilities of the film camera seems to have reached him. [*The Carpathian Castle*] in no way presages film or television," 181.

38. Perhaps more than just a footnote is the fact that when Wells's *First Men on the Moon* was published in 1901, a year before the appearance of Méliès's *Trip to the*

Moon, the narrator refers to a story by Jules Verne called *Trip to the Moon*. Why did he not cite Verne's original title *From the Earth to the Moon*? Did this perhaps influence Méliès's subsequent choice of title?

39. Quoted in John Frazer, *Artificially Arranged Scenes: The Films of Georges Méliès* (Boston: Hall, 1979), 99.

40. Costello, *Jules Verne: Inventor of Science Fiction*, 147.

41. Lynda Nead, *The Haunted Gallery: Painting, Photography, Film*, c. 1900 (New Haven and London: Yale University Press, 2007), 222–230.

42. Frazer, *Artificially Arranged Scenes: The Films of Georges Méliès*, 99.

43. Frazer, *Artificially Arranged Scenes: The Films of Georges Méliès*, 149.

44. Pauline Kael, "The Deadly Invention," in *5001 Nights at the Movies*, 179.

45. Harriet R. Polt, "The Czechoslovak Animated Film," *Film Quarterly*, Vol. 17 (Spring 1964), 37–38.

46. Polt, "The Czechoslovak Animated Film," 37–38.

47. Waldrop and Person, "The Fabulous World of Jules Verne," *Locus* online, n.p.

48. Waldrop and Person, "The Fabulous World of Jules Verne," *Locus* online, n.p.

49. Ursula Le Guin, "From Elfland to Poughkeepsie," in *The Language of the Night: Essays on Fantasy and Science Fiction*, Ursula K. Le Guin, ed. Susan Wood (New York: Perigree Books, 1979), 95.

Bibliography

Aldiss, Brian. *Billion Year Spree*. New York: Doubleday, 1973.

Amis, Kingsley. *New Maps of Hell*. New York: Harcourt, Brace, 1960.

Ashley, Mike. "When Steampunk Was Real." 8–10 in *Steampunk Prime: A Vintage Steampunk Reader*, ed. Mike Ashley. New York: Nonstop Press, 2012.

Asimov, Isaac. *Asimov on Science Fiction*. New York: Doubleday, 1981.

Butcher, William. *Jules Verne*. New York: Thunder's Mouth Press, 2006.

Clarke, Arthur C. Introduction to Jules Verne, *From the Earth to the Moon*. New York: Dodd, Mead, 1962.

Costello, Peter. *Jules Verne: Inventor of Science Fiction*. New York: Scribner, 1978.

Frazer, John. *Artificially Arranged Scenes: The Films of Georges Méliès*. Boston: Hall, 1979.

Jeter, K. W. "Steampunks." *Locus* 315 (April 1987), quoted in Rick Klaw, "The Steam-Driven Time Machine." 349–356 in *Steampunk*, ed. Ann and Jeff VanderMeer. San Francisco: Tachyon Publications, 2008.

Kael, Pauline. "The Deadly Invention." 179 in *5001 Nights at the Movies*. New York: Holt, 1982.

Le Guin, Ursula, "From Elfland to Poughkeepsie." 83–95 in *The Language of the Night: Essays on Fantasy and Science Fiction*, Ursula K. Le Guin, ed. Susan Wood. New York: Perigree Books, 1979.

Lottman, Herbert R. *Jules Verne: An Exploratory Biography*. New York: St. Martin's Press, 1996.

- Miller, Cynthia. "Steampunk." 351–356 in John C. Tibbetts, *The Gothic Imagination*. New York: Palgrave Macmillan, 2011.
- Nead, Lynda. *The Haunted Gallery: Painting, Photography, Film, c. 1900*. New Haven and London: Yale University Press, 2007.
- Novalis. *Henry von Ofterdingen*. Trans. Palmer Hilty. New York: Frederick Ungar, 1982.
- Polt, Harriet R. "The Czechoslovak Animated Film." *Film Quarterly* 17, no. 3 (Spring 1964): 31–40.
- Ramsaye, Terry. "Robert Paul and *The Time Machine*." 196–203 in *The Definitive Time Machine*, ed. Harry M. Geduld. Bloomington: Indiana University Press, 1987.
- Renzi, Thomas C. H. G. *Wells: Six Scientific Romances Adapted for Film*. Metuchen, N.J.: Scarecrow Press, 1992.
- . *Jules Verne on Film*. Jefferson, N.C.: McFarland, 1998.
- VanderMeer, Jeff, and S. J. Chambers. *The Steampunk Bible: An Illustrated Guide to the World of Imaginary Airships, Corsets and Goggles, Mad Scientists, and Strange Literature*. New York: Abrams Image, 2011.
- Velinger, Jan. "Karel Zeman—Author of Czech Animated Films Including the Mixed-Animation Classic, 'Journey to the Beginning of Time.'" www.radio.cy/en/section/Czechs/karel-zeman (10 February 2012).
- Verne, Jules. *For the Flag*, anonymous translation. London: Hurst and F. M. Lupton, 1903.
- . "Master Zacharias." 478–503 in *Science Fiction: Stories and Contexts*, ed. Heather Masri. New York: Bedford/St. Martin's, 2008.
- . "The Begum's Fortune." 105–117 in *Strange Signposts: An Anthology of the Fantastic*, ed. Sam Moskowitz. New York: Holt, Rinehart and Winston, 1966.
- Waldrop, Howard, and Lawrence Person. "The Fabulous World of Jules Verne," *Locus online*, 13 October 2004. <http://voyagesextraordinaires.blogspot.com/2007/12/fabulous-world-of-jules-verne-1958.html> (February 2012).