















A JOURNEY INTO THE UNKNOWN

The dream of travelling off Earth is very old. In the second century AD, Lucian Samosata imagined a storm at sea powerful enough to lift a ship into the air and all the way to the Moon. Johannes Kepler's Somnium [1632] has a lunar explorer carried on the back of a flying witch; William Godwin's The Man in the Moone [1638] imagines a man carried to the Moon by a flock of geese; the protagonist of Edgar Allan Poe's Hans Plaall [1835] flies to the Moon in a hot-air balloon. These tales are jolly but, obviously, impracticable.

An influential and prolific author, Jules Verne was a rationalist, a practical man whose science fictional extrapolations stuck, as far as possible, to scientific plausibility... at least up to a point. H G Wells wrote a novel (The First Men in the Moon, 1901) in which explorers fly to the Moon in a ship powered by anti-gravity. But, Verne pointed out, there's no such thing as anti-gravity, which he thought rendered the book invalid mere fantasy. When Verne wrote his story about lunar explorers, he grounded it in the real science of his day. In the 1860s, there was only one way Verne could imagine a spacecraft being launched so as to escape the Earth's gravitational pull: it must be fired out of a giant cannon.



A cannonball fired upwards needs to travel at a speed of 40,287 kilometres per hour (25,020 miles per hour) to achieve escape velocity. If it's travelling any slower than this, it will fall back to the ground. Scientists before Verne had worked this out, so Verne applied it to his story. A gun large enough to fire a cannonshell at such prodigious speeds would be very large indeed, and Verne's tale explains how it came to be made, and what happened when it was fired. This attention to scientific accuracy was brought into science fiction by Verne. Yet it only goes so far. In fact, a projectile fired from a cannon at such a speed would burn up at once, because of the intense friction it would experience passing through the lower atmosphere. Plus, think of the human crew inside the projectile. Accelerating from zero to over 40,000 kilometres per hour in an instant would turn them into a smear of strawberry jam on the rear wall of the compartment. Verne tries to address this by suggesting that his craft is fitted with hydraulic pistons and levers to deaden the brute force of the acceleration - but this still wouldn't come anywhere near working. Today, we use rockets to lift our astronauts into space because they accelerate slowly though the lower air and only reach escape velocity much higher up. But rockets were not a viable part of Verne's world. He does the best he can with the science and technology available to him at the time. And though the words 'in fact' have been used in this paragraph, a story is not a fact: it's a story. And this story works very well.









The soldiers scurried and ran, struggling to right their cannons, all aimed into the pit, to bear on this new target. But they were too slow! The giant tripod stepped easily amongst them, shooting its heat ray at this gun and that, and in moments the artillery was all destroyed. Only one gun got off a shot, and it whistled past the tripod's legs and fell away into the far reaches of the common.

Now everything was chaos. Soldiers took up position, aiming their rifles and firing. The civilians were swarming away, screaming and shouting, running for their lives. I heard the snap of rifle fire and the ping as bullets bounced off the metal hood of the Martian machine, but I too was running, lumbering up a slope and away.

It was going uphill that saved my life, for the Martian tripod now deployed a second weapon: a noxious black smoke pouring out of the rear of its cockpit, sinking through the air and asphyxiating all upon whom it fell. By the time I had reached the top of the hill I looked down upon a terrible scene: the black smoke was everywhere in the hollow, roiling like a foul mist, and all human resistance had been extinguished.

From the Martian tripod came an awful, howling cry, loud enough to bowl me over. I pressed my hands to my ears but the sound penetrated: ullaaaaah!

I stumbled away from the common, the horrible shrieks of the Martian splitting the air behind me.

My bicycle was lost. My clothes were covered in dirt. I hid behind a wall for a while to catch my breath and listened: screams, crashes, the cackling sound of burning buildings, the thud of tripods – for there were several now – stomping about the countryside, and again and again the cries of ullaaaaah!





Men set up rocket-rifles on tripods and made good use of them, sending small projectiles arching into the air to fall precisely five miles ahead and explode with the force of eight-inch shells, such as we used in the First World War.

The Pan soldiers were easy to defeat. Harder were the Bad Blood gang members, who knew they were fighting for their very lives. The Pan seemed too shocked by the mere fact of our attack to be able to fight back.

Some Pan airships moved through the sky overhead, but they could not use their destructor rays for fear of hitting their own, and when I launched a rocket-bullet that exploded one of them, they flew off, over the Atlantic and away.

In less than an hour the battle was over, and New York was ours.

The effectiveness of our barrage tactics established a confidence in our ability to overcome the Pans. As I pointed out to Wilma, "It has been my belief all along that the American explosive rocket is a far more efficient weapon than the disintegrator ray of the Pans, once we can train all our gangs to use it systematically and in a coordinated fashion. The dis ray inevitably reveals its source of emanation. The rocket gun does not. The dis ray can reach its target only in a straight line. The rocket may be made to travel in an arc, over intervening obstacles, to an unseen target."

I embraced Wilma. "The Finger of Doom points squarely at the Pans today," I said.
"And unless you and I are killed in the struggle, we shall live to see America drive them entirely from this land."

