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CLASSICS SERIES CL182

JULES VERNE

ROUND THE MOON



Introduction by Robert A. W. Lowndes

COMPLETE AND UNABRIDGED

ROUND THE MOON

JULES VERNE



AIRMONT

AIRMONT PUBLISHING COMPANY, INC.

22 EAST 60TH STREET • NEW YORK 10022

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ISBN: 0-8049-0182-1 **ROUND THE MOON**

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JULES VERNE

Introduction

Many people believe that a special Providence guides the person with outstanding talent and capabilities into the particular areas where these talents will be expressed to their highest possible effect; and this Providence often operates by closing all other avenues of expression, sometimes abruptly slamming doors in the subject's face. The career of Jules Verne, born at Nantes on February 8, 1828, certainly substantiates such belief.

Verne's first great desire was to travel; he and his younger brother, Paul, haunted the docks by day and read travel books by candlelight when they should have been sleeping. And when they were unable to read, they would invent stories of travels to tell each other.

Paul became a traveler at the age of eighteen, when he joined the Navy, but there was no such fulfillment in sight for Jules. He had tried to stow away on a schooner bound for the West Indies, but thanks to scientific invention, to which he would become so devoted later on, he was discovered and brought back. Young Jules returned unwillingly to school, not yet dreaming that the talent he had shown in telling travel tales to Paul meant anything beyond momentary amusement and escape from frustration.

The first sign of a vocation came to Jules when he discovered the romantic poets who wrote for the theater. Now he decided he wanted to live in Paris and write plays for the theater; he started at once to work on plays and poems in his spare time.

Needless to say, this was not the career that M. Pierre Verne envisioned for his elder son. It was assumed that the first son of a successful lawyer would follow in his father's footsteps, so when Paul went off to the Navy, Jules was sent to the Sorbonne in Paris to study law.

Once in Paris, Jules lost no time in taking advantage of the great opportunities open to him, as he saw them. He submitted a verse drama he had written in Nantes to one of the theaters, hobnobbed with acquaintances from the studios in the Latin Quarter, and learned painfully that one had to have connections in order to make an entrance into this world. In the months that passed, he learned how easy it is for a young man living on an allowance from home to go into debt. One can picture the feelings of Pierre Verne when he paid an unexpected visit to his son after a number of months and found that Jules had not attended a single class at the Sorbonne. The boy asserted his independence and his plea was granted: he could pursue his chimerical career as he chose—and since he was independent, there would be no further subsidy from home!

There were some very minor successes, by way of collaborations on operetta librettos, and the day came when Verne laid down his pen in momentary despair at the realization that he really wasn't interested in writing the sort of material that would sell to the theaters. It was during this period of discouragement that the next door was shown to him—a seemingly strange door, the door of the public libraries.

Here he found the awakening of his earlier dreams of travel as he pored over books, finding in the course of inveterate reading that he had a marvelously retentive memory. And here he found an even greater source of wonder and inspiration than travelogues in the natural sciences. The public libraries became Jules Verne's alma mater, and he would graduate from this school *summa cum laude*.

Eventually, he had to admit what seemed at the time as defeat to his writing ambitions. Dreamer though he was, there was a hard core of practicality in Verne; he would pursue a vision just so far; he could not continue to live in vague hopes and poverty.

The solution would seem to us in the present world a wildly romantic one—he would marry a rich woman. But in Paris at the time, this was far from an impractical goal. Yet, the romantic element had its inning; Verne actually fell in love with a twenty-six-year-old widow whom he met at a friend's marriage feast, wooed her in a whirlwind campaign which resulted in an engagement within a week—and then learned that his

Honorine had 50,000 francs to bring to the oncoming marriage! Pierre Verne added a substantial sum of money to his heartfelt blessings, but that good lawyer knew better than to withhold a string. Jules would now become respectable; he would take a position in a stockbroker's office, in which his father would buy him an interest.

Jules Verne now had a loving wife, a respectable position, and financial security. No more hobnobbing with Bohemians, no more days in the public library, no more connections with the theater—now he had become a man and must put away childish things.

Then came the meeting with Felix Tourachon (Nadar), and his scheme for making an airborne voyage over Europe in a greatly improved balloon. Life suddenly became interesting and wonderful again for Jules as he entered wholeheartedly into Nadar's scheme, drew upon his imagination and scientific background to help design the improvements needed, and secretly made plans to accompany Nadar in the flight.

But when the time came for the flight, a crisis at the Stock Exchange demanded that Verne stick to his post. There was only one escape from this intolerable disappointment; he sat down and began to write about an imaginary journey in a balloon, inventing on paper innumerable improvements that had not appeared in the actual *Gigant*. (Nadar's balloon voyage was a failure, after all.) This imaginary journey did not take place over Europe, but over Africa. Verne's retentive memory gave him the ability to describe such a voyage as well, perhaps better, than any explorer who had been to Africa. He called the novel *Five Weeks in a Balloon*, and he sent it to the publisher, Jules Hetzel.

The first edition of the book went on sale January 1, 1863; by the end of the week, it was sold out. Now, said Hetzel, what will you write for me next?

The answer astounded him. His new author had already decided that the next story would be about a journey to the moon!

This was 1863; the Civil War was still raging in the United States and it was as yet by no means certain that the Confederate States could not gain their independence from the Federal Union. Verne places his story in a United States where the war is over and the Union has been preserved.

During the war, a unique society is formed in Baltimore—the Gun Club—the sole requirement for membership being that the applicant must have invented a cannon, or at least improved upon a cannon, or invented or improved upon some other fire-arm. The membership spreads all over the country, and as the war continues, enthusiasm grows.

Then the war comes to an end—a black day for the members of the Gun Club. What future is there for its unique services to the military arts? The club's President, Impey Barbicane, calls a special meeting, assuring members that there will be an announcement of the greatest importance. He lays before them a proposal which takes their collective breath away: the Gun Club will sponsor a monster cannon which will fire a projectile to the moon!

The whole world watches, and the nations contribute to the funds, while Barbicane, J. T. Maston, and others proceed with their tremendous project. But even Barbicane and Maston find themselves breathless when they receive a telegram from the great French explorer, Michel Ardan: "Substitute for your spherical shell a cylindro-projectile. I shall go inside it. . . ."

From the Earth to the Moon was the first story of a moon-flight using the rocket principle. It was a tremendous success, and the public waited breathlessly for the sequel, *Round the Moon*, wherein the space journey is described in detail.

We know today, of course, that a projectile fired from a cannon is not a feasible spaceship, but were there grounds for considering the story impossible in 1863? * Actually, there were, and Verne was aware of them. He presents the facts in such a manner as to tip off the reader who might otherwise have been misled, but not in such a way as to spoil the illusion. Captain Nicholl presents the scientific objections correctly in the story; but for the sake of the story, these are argued down, and things come out as the members of the Gun Club believe they will.

These first two novels were immediate successes, and now the path was clear; it was as if the many diverse threads in Verne's career had been gathered together—the desire to travel, the ambition to write, the fascination in reading of strange lands and natural science, the attraction of the theater—into a single pattern. Jules Verne had been guided to the right places and to the right people at the right times. His willingness to work hard, his excellent memory, and his never-still imagination were his own contribution.

Like his younger contemporary, H. G. Wells, Jules Verne wrote with the nineteenth century's faith in science as a liberator

* Heretofore, I have seen the date for *From the Earth to the Moon* listed as 1865, following rather than preceding *A Journey to the Center of the Earth*. Franz Born contends that the moon story was written in 1863 in his *Jules Verne: The Man Who Invented the Future*, and the internal evidence cited above makes this believable.
RAWL

and the key to a sane and happy world where ignorance, vice, poverty, disease, and the stupendous folly of war would become things of a forgotten past. And like Wells, Jules Verne came to realize that this faith was a chimera; although he died nearly a decade before the Great War shattered Wells's visions, Verne had realized that science alone is no answer to the human condition.

His later novels show his increasing bitterness; and one of the best examples of this is the contrast between the character of Robur, who, in *Robur the Conqueror*, is eager to offer his discoveries to the world for mankind's benefit, but who, in *The Master of the World* (Airmont 1965), is no longer willing to share his secrets. He will rule by means of his discoveries, and force peace and decency upon a world all too eager to follow destructive leaders. But where H. G. Wells, turning to the same solution of benevolent tyranny on the part of scientists with tremendously advanced technologies, has such self-appointed saviors succeed, Verne has Robur suffer defeat. Verne had learned the bitter lesson thoroughly, where Wells had not.

Verne died on March 24, 1905, loved and honored the world over.

ROBERT A. W. LOWNDES

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PRELIMINARY CHAPTER

*resuming the first part of the work and serving as an
introduction to the second*

A few years ago the world was suddenly astounded by hearing of an experiment of a most novel and daring nature, altogether unprecedented in the annals of science. The BALTIMORE GUN CLUB, a society of artillerymen started in America during the great Civil War, had conceived the idea of nothing less than establishing direct communication with the Moon by means of a projectile! President Barbican, the originator of the enterprise, was strongly encouraged in its feasibility by the astronomers of Cambridge Observatory, and took upon himself to provide all the means necessary to secure its success. Having realized by means of a public subscription the sum of nearly five and a half millions of dollars, he immediately set himself to work at the necessary gigantic labors.

In accordance with the Cambridge men's note, the cannon intended to discharge the projectile was to be planted in some country not further than 28° north or south from the equator, so that it might be aimed vertically at the Moon in the zenith. The bullet was to be animated with an initial velocity of 12,000 yards to the second. It was to be fired off on the night of December 1st, at thirteen minutes and twenty seconds before eleven o'clock, precisely. Four days afterwards it was to hit the Moon, at the very moment that she reached her *perigee*, that is to say, her nearest point to the Earth, about 228,000 miles distant.

The leading members of the Club, namely President Barbican, Secretary Marston, Major Elphinstone and General Morgan, forming the executive committee, held several meetings to discuss the shape and material of the bullet, the nature and position of the cannon, and the quantity and quality of the powder. The decision soon arrived at was as follows: 1st—The bullet was to be a hollow aluminum shell, its diameter nine feet, its walls a foot in thickness, and its weight 19,250 pounds; 2d—The cannon was to be a columbiad 900 feet in length, a well of that depth forming the vertical mould in which it was to be cast; and 3d—The powder was to be 400 thousand pounds of gun cotton, which, by developing more than 200

thousand millions of cubic feet of gas under the projectile, would easily send it as far as our satellite.

These questions settled, Barbican, aided by Murphy, the Chief Engineer of the Cold Spring Iron Works, selected a spot in Florida, near the 27th degree north latitude, called Stony Hill, where, after the performance of many wonderful feats in mining engineering, the Columbiad was successfully cast.

Things had reached this state when an incident occurred which excited the general interest a hundred fold.

A Frenchman from Paris, Michael Ardan by name, eccentric, but keen and shrewd as well as daring, demanded, by the Atlantic telegraph, permission to be enclosed in the bullet so that he might be carried to the Moon, where he was curious to make certain investigations. Received in America with great enthusiasm, Ardan held a great meeting, triumphantly carried his point, reconciled Barbican to his mortal foe, a certain Captain McNicholl, and even, by way of clinching the reconciliation, induced both the newly made friends to join him in his contemplated trip to the Moon.

The bullet, so modified as to become a hollow conical cylinder with plenty of room inside, was further provided with powerful water-springs and readily-ruptured partitions below the floor, intended to deaden the dreadful concussion sure to accompany the start. It was supplied with provisions for a year, water for a few months, and gas for nearly two weeks. A self-acting apparatus, of ingenious construction, kept the confined atmosphere sweet and healthy by manufacturing pure oxygen and absorbing carbonic acid. Finally, the Gun Club had constructed, at enormous expense, a gigantic telescope, which, from the summit of Long's Peak, could pursue the Projectile as it winged its way through the regions of space. Everything at last was ready.

On December 1st, at the appointed moment, in the midst of an immense concourse of spectators, the departure took place, and, for the first time in the world's history, three human beings quitted our terrestrial globe with some possibility in their favor of finally reaching a point of destination in the inter-planetary spaces. They expected to accomplish their journey in 97 hours, 13 minutes and 20 seconds, consequently reaching the Lunar surface precisely at midnight on December 5-6, the exact moment when the Moon would be full.

Unfortunately, the instantaneous explosion of such a vast quantity of gun cotton, by giving rise to a violent commotion in the atmosphere, generated so much vapor and mist as to

render the Moon invisible for several nights to the innumerable watchers in the Western Hemisphere, who vainly tried to catch sight of her.

In the meantime, J. T. Marston, the Secretary of the Gun Club, and a most devoted friend of Barbican's, had started for Long's Peak, Colorado, on the summit of which the immense telescope, already alluded to, had been erected; it was of the reflecting kind, and possessed power sufficient to bring the Moon within a distance of five miles. While Marston was prosecuting his long journey with all possible speed, Professor Belfast, who had charge of the telescope, was endeavoring to catch a glimpse of the Projectile, but for a long time with no success. The hazy, cloudy weather lasted for more than a week, to the great disgust of the public at large. People even began to fear that further observation would have to be deferred to the 3d of the following month, January, as during the latter half of December the waning Moon could not possibly give light enough to render the Projectile visible.

At last, however, to the unbounded satisfaction of all, a violent tempest suddenly cleared the sky, and on the 13th of December, shortly after midnight, the Moon, verging towards her last quarter, revealed herself sharp and bright on the dark background of the starry firmament.

That same morning, a few hours before Marston's arrival at the summit of Long's Peak, a very remarkable telegram had been dispatched by Professor Belfast to the Smithsonian Institute, Washington. It announced:

That on December 13th, at 3 o'clock in the morning, the Projectile shot from Stony Hill had been perceived by Professor Belfast and his assistants; that, deflected a little from its course by some unknown cause, it had not reached its mark, though it had approached near enough to be affected by the Lunar attraction; and that, its rectilinear motion having become circular, it should henceforth continue to describe a regular orbit around the Moon, of which in fact it had become the Satellite. The dispatch went on further to state:

That the *elements* of the new heavenly body had not yet been calculated, as at least three different observations, taken at different times, were necessary to determine them. The distance of the Projectile from the Lunar surface, however, might be set down roughly at 2,333 miles.

The dispatch concluded with the following hypotheses, positively pronounced to be the only two possible: Either, 1. The Lunar attraction would finally prevail, in which case the

travellers would reach their destination; or, 2. The Projectile, kept whirling forever in an immutable orbit, would go on revolving around the Moon till time should be no more.

In either alternative, what should be the lot of the daring adventurers? They had, it is true, abundant provisions to last them for some time, but even supposing that they did reach the Moon and thereby completely establish the practicability of their daring enterprise, how were they ever to get back? *Could* they ever get back? or ever even be heard from? Questions of this nature, freely discussed by the ablest pens of the day, kept the public mind in a very restless and excited condition.

We must be pardoned here for making a little remark which, however, astronomers and other scientific men of sanguine temperament would do well to ponder over. An observer cannot be too cautious in announcing to the public his discovery when it is of a nature purely speculative. Nobody is obliged to discover a planet, or a comet, or even a satellite, but, before announcing to the world that you have made such a discovery, first make sure that such is really the fact. Because, you know, should it afterwards come out that you have done nothing of the kind, you make yourself a butt for the stupid jokes of the lowest newspaper scribblers. Belfast had never thought of this. Impelled by his irrepressible rage for discovery—the *furor inveniendi* ascribed to all astronomers by Aurelius Priscus—he had therefore been guilty of an indiscretion highly unscientific when his famous telegram, launched to the world at large from the summit of the Rocky Mountains, pronounced so dogmatically on the only possible issues of the great enterprise.

The truth was that his telegram contained *two* very important errors: 1. Error of *observation*, as facts afterward proved; the Projectile *was* not seen on the 13th and *could* not have been on that day, so that the little black spot which Belfast professed to have seen was most certainly not the Projectile; 2. Error of *theory* regarding the final fate of the Projectile, since to make it become the Moon's satellite was flying in the face of one of the great fundamental laws of Theoretical Mechanics.

Only one, therefore, the first, of the hypotheses so positively announced, was capable of realization. The travellers—that is to say if they still lived—might so combine and unite their own efforts with those of the Lunar attraction as actually to succeed at last in reaching the Moon's surface.

Now the travellers, those daring but cool-headed men who knew very well what they were about, *did* still live, they *had* survived the frightful concussion of the start, and it is to the faithful record of their wonderful trip in the bullet-car, with all its singular and dramatic details, that the present volume is devoted. The story may destroy many illusions, prejudices and conjectures; but it will at least give correct ideas of the strange incidents to which such an enterprise is exposed, and it will certainly bring out in strong colors the effects of Barbican's scientific conceptions, McNicholl's mechanical resources, and Ardan's daring, eccentric, but brilliant and effective combinations.

Besides, it will show that J. T. Marston, their faithful friend and a man every way worthy of the friendship of such men, was only losing his time while mirroring the Moon in the speculum of the gigantic telescope on the lofty peak of the mountains.

CHAPTER I

FROM 10 P.M. TO 10 46' 40"

The moment that the great clock belonging to the works at Stony Hill had struck ten, Barbican, Ardan and McNicholl began to take their last farewells of the numerous friends surrounding them. The two dogs intended to accompany them had been already deposited in the Projectile. The three travellers approached the mouth of the enormous cannon, seated themselves in the flying car, and once more took leave for the last time of the vast throng standing in silence around them. The windlass creaked, the car started, and the three men disappeared in the yawning gulf.

The trap-hole giving them ready access to the interior of the Projectile, the car soon came back empty; the great windlass was presently rolled away; the tackle and scaffolding were removed, and in a short space of time the great mouth of the Columbiad was completely rid of all obstructions.

McNicholl took upon himself to fasten the door of the trap on the inside by means of a powerful combination of screws and bolts of his own invention. He also covered up very care-

fully the glass lights with strong iron plates of extreme solidity and tightly fitting joints.

Ardan's first care was to turn on the gas, which he found burning rather low; but he lit no more than one burner, being desirous to economize as much as possible their store of light and heat, which, as he well knew, could not at the very utmost last them longer than a few weeks.

Under the cheerful blaze, the interior of the Projectile looked like a comfortable little chamber, with its circular sofa, nicely padded walls, and dome shaped ceiling.

All the articles that it contained, arms, instruments, utensils, etc., were solidly fastened to the projections of the wadding, so as to sustain the least injury possible from the first terrible shock. In fact, all precautions possible, humanly speaking, had been taken to counteract this, the first, and possibly one of the very greatest dangers to which the courageous adventurers would be exposed.

Ardan expressed himself to be quite pleased with the appearance of things in general.

"It's a prison, to be sure," said he, "but not one of your ordinary prisons that always keep in the one spot. For my part, as long as I can have the privilege of looking out of the window, I am willing to lease it for a hundred years. Ah! Barbican, that brings out one of your stony smiles. You think our lease may last longer than that! Our tenement may become our coffin, eh? Be it so. I prefer it anyway to Mahomet's; it may indeed float in the air, but it won't be motionless as a milestone!"

Barbican, having made sure by personal inspection that everything was in perfect order, consulted his chronometer, which he had carefully set a short time before with Chief Engineer Murphy's, who had been charged to fire off the Projectile.

"Friends," he said, "it is now twenty minutes past ten. At 10 46' 40", precisely, Murphy will send the electric current into the gun cotton. We have, therefore, twenty-six minutes more to remain on earth."

"Twenty-six minutes and twenty seconds," observed Captain McNicholl, who always aimed at mathematical precision.

"Twenty-six minutes!" cried Ardan gaily. "An age, a cycle, according to the use you make of them. In twenty-six minutes how much can be undone! The weightiest questions of warfare, politics, morality, can be discussed, even decided, in twenty-six minutes. Twenty-six minutes well spent are infinitely more valuable than twenty-six lifetimes wasted! A

few seconds even, employed by a Pascal, or a Newton, or a Barbican, or any other profoundly intellectual being

Whose thoughts wander through eternity——"

"As mad as Marston! Every bit!" muttered the Captain, half audibly.

"What do you conclude from this rigmorole of yours?" interrupted Barbican.

"I conclude that we have twenty-six good minutes still left——"

"Only twenty-four minutes, ten seconds," interrupted the Captain, watch in hand.

"Well, twenty-four minutes, Captain," Ardan went on; "now even in twenty-four minutes, I maintain——"

"Ardan," interrupted Barbican, "after a very little while we shall have plenty of time for philosophical disputations. Just now let us think of something far more pressing."

"More pressing! what do you mean? are we not fully prepared?"

"Yes, fully prepared, as far at least as we have been able to foresee. But we may still, I think, possibly increase the number of precautions to be taken against the terrible shock that we are so soon to experience."

"What? Have you any doubts whatever of the effectiveness of your brilliant and extremely original idea? Don't you think of your brilliant and extremely original idea? Don't you think that the layers of water, regularly disposed in easily-ruptured partitions beneath this floor, will afford us sufficient protection by their elasticity?"

"I hope so, indeed, my dear friend, but I am by no means confident."

"He hopes! He is by no means confident! Listen to that, Mac! Pretty time to tell us so! Let me out of here!"

"Too late!" observed the Captain quietly. "The trap-hole alone would take ten or fifteen minutes to open."

"Oh then I suppose I must make the best of it," said Ardan, laughing. "All aboard, gentlemen! The train starts in twenty minutes!"

"In nineteen minutes and eighteen seconds," said the Captain, who never took his eye off the chronometer.

The three travellers looked at each other for a little while, during which even Ardan appeared to become serious. After another careful glance at the several objects lying around them, Barbican said, quietly:

"Everything is in its place, except ourselves. What we have now to do is to decide on the position we must take in order to neutralize the shock as much as possible. We must be particularly careful to guard against a rush of blood to the head."

"Correct!" said the Captain.

"Suppose we stood on our heads, like the circus tumblers!" cried Ardan, ready to suit the action to the word.

"Better than that," said Barbican; "we can lie on our side. Keep clearly in mind, dear friends, that at the instant of departure it makes very little difference to us whether we are inside the bullet or in front of it. There is, no doubt, *some* difference," he added, seeing the great eyes made by his friends, "but it is exceedingly little."

"Thank heaven for the *some*!" interrupted Ardan, fervently.

"Don't you approve of my suggestion, Captain?" asked Barbican.

"Certainly," was the hasty reply. "That is to say, absolutely. Seventeen minutes twenty-seven seconds!"

"Mac isn't a human being at all!" cried Ardan, admiringly. "He is a repeating chronometer, horizontal escapement, London-made lever, capped, jewelled——"

His companions let him run on while they busied themselves in making their last arrangements, with the greatest coolness and most systematic method. In fact, I don't think of anything just now to compare them to except a couple of old travellers who, having to pass the night in the train, are trying to make themselves as comfortable as possible for their long journey. In your profound astonishment, you may naturally ask me of what strange material can the hearts of these Americans be made, who can view without the slightest semblance of a flutter the approach of the most appalling dangers? In your curiosity I fully participate, but, I'm sorry to say, I can't gratify it. It is one of those things that I could never find out.

Three mattresses, thick and well wadded, spread on the disc forming the false bottom of the Projectile, were arranged in lines whose parallelism was simply perfect. But Ardan would never think of occupying his until the very last moment. Walking up and down, with the restless nervousness of a wild beast in a cage, he kept up a continuous fire of talk; at one moment with his friends, at another with the dogs, addressing the latter by the euphonious and suggestive names of Diana and Satellite.