ROUND THE MOON.

INTRODUCTION.

PRELIMINARY CHAPTER.

CONTAINING A SHORT ACCOUNT OF THE FIRST PART OF THIS WORK TO SERVE AS PREFACE TO THE SECOND.

During the course of the year 186---- the entire world was singularly excited by a scientific experiment without precedent in the annals of science. The members of the Gun Club, a circle of artillerymen established at Baltimore after the American war, had the idea of putting themselves in communication with the moon--yes, with the moon--by sending a bullet to her. Their president, Barbicane, the promoter of the enterprise, having consulted the astronomers of the Cambridge Observatory on this subject, took all the precautions necessary for the success of the extraordinary enterprise, declared practicable by the majority of competent people. After having solicited a public subscription which produced nearly 30,000,000 of francs, it began its gigantic labours.

According to the plan drawn up by the members of the observatory, the cannon destined to hurl the projectile was to be set up in some country

situated between the 0° and 28° of north or south latitude in order to aim at the moon at the zenith. The bullet was to be endowed with an initial velocity of 12,000 yards a second. Hurled on the 1st of December at thirteen minutes and twenty seconds to eleven in the evening, it was to get to the moon four days after its departure on the 5th of December at midnight precisely, at the very instant she would be at her perigee--that is to say, nearest to the earth, or at exactly 86,410 leagues' distance.

The principal members of the Gun Club, the president, Barbicane, Major Elphinstone, the secretary, J.T. Maston, and other savants, held several meetings, in which the form and composition of the bullet were discussed, as well as the disposition and nature of the cannon, and the quality and quantity of the powder to be employed. It was decided--1, that the projectile should be an obus of aluminium, with a diameter of 800 inches; its sides were to be 12 inches thick, and it was to weigh 19,250 lbs.; 2, that the cannon should be a cast-iron Columbiad 900 feet long, and should be cast at once in the ground; 3, that the charge should consist of 400,000 lbs. of gun-cotton, which, by developing 6,000,000,000 litres of gas under the projectile, would carry it easily towards the Queen of Night.

These questions settled, President Barbicane, aided by the engineer, Murchison, chose a site in Florida in 27° 7' north lat. and 5° 7' west long. It was there that after marvels of labour the Columbiad was cast quite successfully.

Things were at that pass when an incident occurred which Increased the interest attached to this great enterprise.

A Frenchman, a regular Parisian, an artist as witty as audacious, asked leave to shut himself up in the bullet in order to reach the moon and make a survey of the terrestrial satellite. This intrepid adventurer's name was Michel Ardan. He arrived in America, was received with enthusiasm, held meetings, was carried in triumph, reconciled President Barbicane to his mortal enemy, Captain Nicholl, and in pledge of the reconciliation he persuaded them to embark with him in the projectile.

The proposition was accepted. The form of the bullet was changed. It became cylindro-conical. They furnished this species of aërial compartment with powerful springs and breakable partitions to break the departing shock. It was filled with provisions for one year, water for some months, and gas for some days. An automatic apparatus made and gave out the air necessary for the respiration of the three travellers. At the same time the Gun Club had a gigantic telescope set up on one of the highest summits of the Rocky Mountains, through which the projectile could be followed during its journey through space. Everything was then ready.

On the 30th of November, at the time fixed, amidst an extraordinary concourse of spectators, the departure took place, and for the first time three human beings left the terrestrial globe for the

interplanetary regions with almost the certainty of reaching their goal.

These audacious travellers, Michel Ardan, President Barbicane, and Captain Nicholl were to accomplish their journey in ninety-seven hours thirteen minutes and twenty seconds; consequently they could not reach the lunar disc until the 5th of December, at midnight, at the precise moment that the moon would be full, and not on the 4th, as some wrongly-informed newspapers had given out.

But an unexpected circumstance occurred; the detonation produced by the Columbiad had the immediate effect of disturbing the terrestrial atmosphere, where an enormous quantity of vapour accumulated. This phenomenon excited general indignation, for the moon was hidden during several nights from the eyes of her contemplators.

The worthy J.T. Maston, the greatest friend of the three travellers, set out for the Rocky Mountains in the company of the Honourable J. Belfast, director of the Cambridge Observatory, and reached the station of Long's Peak, where the telescope was set up which brought the moon, apparently, to within two leagues. The honourable secretary of the Gun Club wished to observe for himself the vehicle that contained his audacious friends.

The accumulation of clouds in the atmosphere prevented all observation during the 5th, 6th, 7th, 8th, 9th, and 10th of December. It was even thought that no observation could take place before the 3rd of January in the following year, for the moon, entering her last quarter on the

11th, would after that not show enough of her surface to allow the trace of the projectile to be followed.

But at last, to the general satisfaction, a strong tempest during the night between the 11th and 12th of December cleared the atmosphere, and the half-moon was distinctly visible on the dark background of the sky.

That same night a telegram was sent from Long's Peak Station by J.T. Maston and Belfast to the staff of the Cambridge Observatory.

This telegram announced that on the 11th of December, at 8.47 p.m., the projectile hurled by the Columbiad of Stony Hill had been perceived by Messrs. Belfast and J.T. Maston, that the bullet had deviated from its course through some unknown cause, and had not reached its goal, but had gone near enough to be retained by lunar attraction; that its rectilinear movement had been changed to a circular one, and that it was describing an elliptical orbit round the moon, and had become her satellite.

The telegram added that the elements of this new star had not yet been calculated--in fact, three observations, taking a star in three different positions, are necessary to determine them. Then it stated that the distance separating the projectile from the lunar surface "might be" estimated at about 2,833 leagues, or 4,500 miles.

It ended with the following double hypothesis:--Either the attraction of

the moon would end by carrying the day, and the travellers would reach their goal; or the projectile, fixed in an immutable orbit, would gravitate around the lunar disc to the end of time.

In either of these alternatives what would be the travellers' fate? It is true they had provisions enough for some time. But even supposing that their bold enterprise were crowned with success, how would they return? Could they ever return? Would news of them ever reach the earth? These questions, debated upon by the most learned writers of the time, intensely interested the public.

A remark may here be made which ought to be meditated upon by too impatient observers. When a savant announces a purely speculative discovery to the public he cannot act with too much prudence. No one is obliged to discover either a comet or a satellite, and those who make a mistake in such a case expose themselves justly to public ridicule. Therefore it is better to wait; and that is what impatient J.T. Maston ought to have done before sending to the world the telegram which, according to him, contained the last communication about this enterprise.

In fact, the telegram contained errors of two sorts, verified later:--1. Errors of observation concerning the distance of the projectile from the surface of the moon, for upon the date of the 11th of December it was impossible to perceive it, and that which J.T. Maston had seen, or thought he saw, could not be the bullet from the Columbiad. 2. A

theoretic error as to the fate of the said projectile, for making it a satellite of the moon was an absolute contradiction of the laws of rational mechanics.

One hypothesis only made by the astronomers of Long's Peak might be realised, the one that foresaw the case when the travellers--if any yet existed--should unite their efforts with the lunar attraction so as to reach the surface of the disc.

Now these men, as intelligent as they were bold, had survived the terrible shock at departure, and their journey in their bullet-carriage will be related in its most dramatic as well as in its most singular details. This account will put an end to many illusions and previsions, but it will give a just idea of the various circumstances incidental to such an enterprise, and will set in relief Barbicane's scientific instincts, Nicholl's industrial resources, and the humorous audacity of Michel Ardan.

Besides, it will prove that their worthy friend J.T. Maston was losing his time when, bending over the gigantic telescope, he watched the course of the moon across the planetary regions.

CHAPTER I.

FROM 10.20 P.M. TO 10.47 P.M.

When ten o'clock struck, Michel Ardan, Barbicane, and Nicholl said good-bye to the numerous friends they left upon the earth. The two dogs, destined to acclimatise the canine race upon the lunar continents, were already imprisoned in the projectile. The three travellers approached the orifice of the enormous iron tube, and a crane lowered them to the conical covering of the bullet.

There an opening made on purpose let them down into the aluminium vehicle. The crane's tackling was drawn up outside, and the mouth of the Columbiad instantly cleared of its last scaffolding.

As soon as Nicholl and his companions were in the projectile he closed the opening by means of a strong plate screwed down inside. Other closely-fitting plates covered the lenticular glasses of the skylights. The travellers, hermetically inclosed in their metal prison, were in profound darkness.

"And now, my dear companions," said Michel Ardan, "let us make ourselves at home. I am a domestic man myself, and know how to make the best of any lodgings. First let us have a light; gas was not invented for moles!"

Saying which the light-hearted fellow struck a match on the sole of his boot and then applied it to the burner of the receptacle, in which there was enough carbonised hydrogen, stored under strong pressure, for lighting and heating the bullet for 144 hours, or six days and six nights.

Once the gas lighted, the projectile presented the aspect of a comfortable room with padded walls, furnished with circular divans, the roof of which was in the shape of a dome.

The objects in it, weapons, instruments, and utensils, were solidly fastened to the sides in order to bear the parting shock with impunity. Every possible precaution had been taken to insure the success of so bold an experiment.

Michel Ardan examined everything, and declared himself quite satisfied with his quarters.

"It is a prison," said he, "but a travelling prison, and if I had the right to put my nose to the window I would take it on a hundred years' lease! You are smiling, Barbicane. You are thinking of something you do not communicate. Do you say to yourself that this prison may be our coffin? Our coffin let it be; I would not change it for Mahomet's, which only hangs in space, and does not move!"

Whilst Michel Ardan was talking thus, Barbicane and Nicholl were making their last preparations.

It was 10.20 p.m. by Nicholl's chronometer when the three travellers were definitely walled up in their bullet. This chronometer was regulated to the tenth of a second by that of the engineer, Murchison. Barbicane looked at it.

"My friends," said he, "it is twenty minutes past ten; at thirteen minutes to eleven Murchison will set fire to the Columbiad; at that minute precisely we shall leave our spheroid. We have, therefore, still seven-and-twenty minutes to remain upon earth."

"Twenty-six minutes and thirteen seconds," answered the methodical Nicholl.

"Very well!" cried Michel Ardan good-humouredly; "in twenty-six minutes lots of things can be done. We can discuss grave moral or political questions, and even solve them. Twenty-six minutes well employed are worth more than twenty-six years of doing nothing. A few seconds of a Pascal or a Newton are more precious than the whole existence of a crowd of imbeciles."

"And what do you conclude from that, talker eternal?" asked President Barbicane.

"I conclude that we have twenty-six minutes," answered Ardan.

"Twenty-four only," said Nicholl.

"Twenty-four, then, if you like, brave captain," answered Ardan; "twenty-four minutes, during which we might investigate--"

"Michel," said Barbicane, "during our journey we shall have plenty of time to investigate the deepest questions. Now we must think of starting."

"Are we not ready?"

"Certainly. But there are still some precautions to be taken to deaden the first shock as much as possible!"

"Have we not water-cushions placed between movable partitions elastic enough to protect us sufficiently?"

"I hope so, Michel," answered Barbicane gently; "but I am not quite sure!"

"Ah, the joker!" exclaimed Michel Ardan. "He hopes! He is not quite sure! And he waits till we are encased to make this deplorable acknowledgment! I ask to get out."

"By what means?" asked Barbicane.

"Well!" said Michel Ardan, "it would be difficult. We are in the train, and the guard's whistle will be heard in twenty-four minutes."

"Twenty!" ejaculated Nicholl.

The three travellers looked at one another for a few seconds. Then they examined all the objects imprisoned with them.

"Everything is in its place," said Barbicane. "The question now is where we can place ourselves so as best to support the departing shock. The position we assume must be important too--we must prevent the blood rushing too violently to our heads."

"That is true," said Nicholl.

"Then," answered Michel Ardan, always ready to suit the action to the word, "we will stand on our heads like the clowns at the circus."

"No," said Barbicane; "but let us lie on our sides; we shall thus resist the shock better. When the bullet starts it will not much matter whether we are inside or in front."

"If it comes to 'not much matter' I am more reassured," answered Michel Ardan.

"Do you approve of my idea, Nicholl?" asked Barbicane.

"Entirely," answered the captain. "Still thirteen minutes and a-half."

"Nicholl is not a man," exclaimed Michel; "he is a chronometer marking the seconds, and with eight holes in--"

But his companions were no longer listening to him, and they were making their last preparations with all the coolness imaginable. They looked like two methodical travellers taking their places in the train and making themselves as comfortable as possible. One wonders, indeed, of what materials these American hearts are made, to which the approach of the most frightful danger does not add a single pulsation.

Three beds, thick and solidly made, had been placed in the projectile. Nicholl and Barbicane placed them in the centre of the disc that formed the movable flooring. There the three travellers were to lie down a few minutes before their departure.

In the meanwhile Ardan, who could not remain quiet, turned round his narrow prison like a wild animal in a cage, talking to his friends and his dogs, Diana and Satellite, to whom it will be noticed he had some time before given these significant names.

"Up, Diana! up, Satellite!" cried he, exciting them. "You are going to

show to the Selenite dogs how well-behaved the dogs of the earth can be! That will do honour to the canine race. If we ever come back here I will bring back a cross-breed of 'moon-dogs' that will become all the rage."

"If there are any dogs in the moon," said Barbicane.

"There are some," affirmed Michel Ardan, "the same as there are horses, cows, asses, and hens. I wager anything we shall find some hens."

"I bet a hundred dollars we find none," said Nicholl.

"Done, captain," answered Ardan, shaking hands with Nicholl. "But, by-the-bye, you have lost three bets with the president, for the funds necessary for the enterprise were provided, the casting succeeded, and lastly, the Columbiad was loaded without accident--that makes six thousand dollars."

"Yes," answered Nicholl. "Twenty-three minutes and six seconds to eleven."

"I hear, captain. Well, before another quarter of an hour is over you will have to make over another nine thousand dollars to the president, four thousand because the Columbiad will not burst, and five thousand because the bullet will rise higher than six miles into the air."

"I have the dollars," answered Nicholl, striking his coat pocket, "and I

only want to pay."

"Come, Nicholl, I see you are a man of order, what I never could be; but allow me to tell you that your series of bets cannot be very advantageous to you."

"Why?" asked Barbicane.

"Because if you win the first the Columbiad will have burst, and the bullet with it, and Barbicane will not be there to pay you your dollars."

"My wager is deposited in the Baltimore Bank," answered Barbicane simply; "and in default of Nicholl it will go to his heirs."

"What practical men you are!" cried Michel Ardan. "I admire you as much as I do not understand you."

"Eighteen minutes to eleven," said Nicholl.

"Only five minutes more," answered Barbicane.

"Yes, five short minutes!" replied Michel Ardan. "And we are shut up in a bullet at the bottom of a cannon 900 feet long! and under this bullet there are 400,000 lbs. of gun-cotton, worth more than 1,600,000 lbs. of ordinary powder! And friend Murchison, with his chronometer in hand and

his eye fixed on the hand and his finger on the electric knob, is counting the seconds to hurl us into the planetary regions."

"Enough, Michel, enough!" said Barbicane in a grave tone. "Let us prepare ourselves. A few seconds only separate us from a supreme moment. Your hands, my friends."

"Yes," cried Michel Ardan, more moved than he wished to appear.

The three bold companions shook hands.

"God help us!" said the religious president.

Michel Ardan and Nicholl lay down on their beds in the centre of the floor.

"Thirteen minutes to eleven," murmured the captain.

Twenty seconds more! Barbicane rapidly put out the gas, and lay down beside his companions.

The profound silence was only broken by the chronometer beating the seconds.

Suddenly a frightful shock was felt, and the projectile, under the impulsion of 6,000,000,000 litres of gas developed by the deflagration

of the pyroxyle, rose into space.