Edison's Conquest of Mars

By

Garrett Putnam Serviss

DEDICATED

to

GARRETT PUTMAN SERVISS

A COSMOPOLITE IN TIME

1851-1929

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INTRODUCTION

If you picked up a magazine and read in it a story mentioning a passenger-carrying rocket driven by atomic power furnished by a substance prepared from uranium, you probably would not be greatly surprised. After all, such an invention is today but a step or two ahead of cold fact. But you might be surprised to learn that if this story was A Columbus of Space, the one I happen to have in mind, your grand-parents may well have read it before you were born--for A Columbus of Space was published in All-Story magazine in 1909, thirty years before the potentialities of U235 were realized, and nearly forty before the atomic bomb became a problem for people to think about.

Did the author of this story simply make a lucky shot in the dark? Perhaps; but let me tell those who are inclined to think so that he was a Carnegie lecturer, a member of half-a-dozen learned societies, one of the first to write a book on Einstein's theory of relativity, and an internationally known figure in his specialty, astronomy. His name is Garrett Putman Serviss.

He was born on March 24, 1851, at Sharon Springs, New York, of native New England stock. His interest in astronomy began as a boy, and was greatly stimulated when he began to examine the beauties of the heavens through a small telescope, the gift of his older brother. This encouraged his enrolling in the course of science at Cornell University

in 1868 (its opening year) from which he was graduated in 1872. There followed two years at the Columbia College Law School, which he left as an LL. B.; and in June, 1874 he was admitted to the bar. He did not practice law, however, but turned instead to newspaper reporting.

Whence came this interest in law and journalism? We can only guess, tracing its onset to the man's college days. As a Cornell sophomore, he was the class poet; as a senior, its historian; and on commencement day delivered an oration on "The Perpetuity of the Heroic Element." But whatever the origin of the interest, unquestioned ability supported it. From the position of reporter and correspondent with the New York Tribune he rose to the post of copy editor on the staff of the Sun. Finally he became night editor, a position which he held for a full decade.

During this period we can see the old interest in science gradually assert itself. At first it took the form of anonymous articles, mainly on matters astronomical. These usually appeared on the editorial page and, partly because they were then a novelty, partly because of a quirk of fate--editor-in-chief Charles Dana frequently had them set up in bold type, believing their logic was a fine counter-irritant for heated political campaigns of the day--the attention of subscribers was focused on them more sharply than usual. In fact, readers over the entire country were soon conjecturing about the identity of "the Sun's astronomer." Very few knew that it was Garrett Serviss, who successfully cloaked his identity for years.

Success in written popularizing of science led him to attempt its duplication on the lecture platform. There his triumphs were such as to lead him to resign as night editor of the Sun in 1892 and make astronomy his life work. Until 1894 he was occupied with "The Urania Lectures." These were sponsored by Andrew Carnegie, and dealt with geology, astronomy, archeology and similar scientific topics. With them Serviss successfully toured the country, and it was only because of the great difficulty in transporting the elaborate staging equipment they required that they were eventually discontinued. He continued to give popular lectures, however, and one of his few biographers has credited his greatness on the rostrum to "a pleasant voice, a charming personality, and a genuine enthusiasm for his subject."

One cannot doubt this enthusiasm; it shines forth unmistakably from all his writings. Probably, too, it played the major part in enabling him to reach a wider reading public than any other astronomer before or after him. For he never abandoned the pen. Up until his death, which occurred on May 25, 1929, he wrote continually, syndicated newspaper columns, magazine articles, books on astronomy, fiction.

His first book, Astronomy with an Opera Glass, appeared in 1888. He was responsible for several other scientific titles (the reader is referred to the bibliography at the end of this volume for a detailed listing); they include Einstein's Theory of Relativity, which is a companion work to the motion picture of the same name. He was also

editor-in-chief of Collier's sixteen-volume Popular Science Library. It might be added that much of the editing and captioning of the Einstein film was his work, and that he collaborated with Leon Barritt in the invention of the Barritt-Serviss Star and Planet Finder, a device still in use.

In comparison with his other writings his output of fiction is small: five novels and a single short story. It is, however, characterized by the same logic and interest, this time tossed aloft to soar on the wings of romantic imagination. Two of these works deal in some detail with the world of the future as he thought it might be--prophetic fiction, if you will; another two give us a picture of life on neighboring planets; and the final couple, although they maintain a terrestrial locale, show as wide a scope of creative invention.

In only one of these does astronomy fail to play at least a supporting role. That is The Sky Pirate (1909), which is an adventure story laid in the year 1936. Its plot revolves around an abduction for ransom in a period which is visualized as rampant with piracy because of the general adoption of air transportation. As usual, fact has outmoded prophecy, for long before 1936 airplane speeds exceeded the 140 miles per hour Serviss predicted. We still need, though, his invention which enables badly damaged aircraft to drift slowly down to a safe landing.

The Moon Metal (1900) deals with the problem of a strange, lunar metal used as a monetary standard to replace gold when, in 1949, huge new

deposits of that metal rendered it common as iron. This is of short story length, and amply demonstrates the author's mastery of that medium.

From the prophetic as well as the entertainment standpoint, one of Garrett Serviss' most interesting novels is A Columbus of Space. Here he visualizes atomic energy liberated and harnessed to drive a rocket to the planet Venus. His conception is uncannily close to truth; he names uranium as the raw material from which is extracted the vital substance, a "crystallized powder" which releases its energy on proper treatment. No less intriguing is the description of the intelligent civilizations on Venus which explorers from this world find.

Two later novels came from his pen: The Moon Maiden (1915) and The Second Deluge (1911). The former is a scientific mystery, and probably the least distinguished of his works. The latter, conversely, is probably his best. It tells of a watery nebula which collides with the earth, flooding it with a second deluge; and of how the human race is saved through the wisdom of one man who foresaw the coming disaster in time to build a second ark. A new civilization which has mastered the secret of atomic energy springs up on the planet as the waters recede. The canvas is a broad one, and the author does it full justice.

Serviss' outstanding stories have been published abroad and re-printed in this country several times, a deserved tribute to their quality and popularity. His very first work of fiction, however, has been shrouded

in obscurity for nearly half a century. Indeed, among collectors and aficionados of the fantastic there was for a time debate as to its actual existence. This is hardly surprising, for until its reprinting in this book Edison's Conquest of Mars lay buried in the Congressional Library's file of the ephemeral New York Evening Journal, where it ran serially in early 1898.

This is a remarkable work. First of all, as many readers will quickly discern, it is in a sense a sequel to H. G. Wells' well known War of the Worlds. The latter novel was serialized by Cosmopolitan magazine in 1897; it caught the public's fickle fancy, and was widely commented upon. All evidence indicates that Serviss also read it: he was a regular contributor to Cosmopolitan. Yet I am inclined to doubt that mere reading of The War of the Worlds in itself prompted him to produce a work in the same vein. Wells' effort was not concluded until the December, 1897 number of the magazine, and Edison's Conquest of Mars began on the following January 12th--a scant six weeks later. For Serviss it was the initial excursion into the realm of fiction, and it is hard to conceive his so hastily adopting a new metier on personal impulse alone. These circumstances, in conjunction with the context of the novel itself, clearly stamp the entire business as clever capitalization on already existent publicity. Again, I doubt if he thought of it at first in that light; his name was well enough known so that he could live by his knowledge, not his wits. But to a newspaper editor the prospect of combining the authority of a nationally known and reputable astronomer with a work designed to satisfy a reading public's

waiting appetite for the unusual--in short, presenting legitimatized sensationalism at the psychological moment--this must have had irresistible appeal. That Edison's Conquest of Mars was written on editorial commission, perhaps as fast as it appeared, seems, then, the most probable interpretation.

Historically, the work is one of the earliest to employ the interplanetary theme. It is the first to portray a battle fought by space craft in the airless void; and possibly the first also to propose the use of sealed suits that enable men to traverse a vacuum. Of the more minor twists of plot initially found here that have since become parts of the "pulp" science-fiction writers' standard stock-in-trade, there are literally too many to mention.

The novel opens with a description of the ruins of eastern America. Although the Martians who survived terrestrial bacteria have left the planet, astronomical observations show a recurrence on the red planet of the same lights that were a prelude to the first onslaught. The conclusion is inevitable: a second invasion is on the way. Serviss pictures the gathering together of the most famous scientists of the day--Edison, Roentgen, Lord Kelvin and others. The Martian machines and weapons left behind are dismantled; their principles of operation are discovered and duplicated; and a defense against their forces is perfected. Armed with this knowledge and with the "disintegrator," a device invented by Edison which is capable of reducing to atoms any substance at which it is aimed, the nations of the world pool their

resources and launch an invasion of Mars across interplanetary space.

More by way of explanation than justification, it should be stated that science today is diminishing the number of critics who are wont to label plots of this nature "too fantastic." For them to say that the colossal has become more important than the rational is, I feel, misleading. For this is a branch of literature that is in many respects the most rational of all: it is a symptom of progress. These same critics also complain that a fantastic plot is frequently developed at the expense of characterization. To this, one may answer that at times what happens can be more important than the people to whom it happens. In essence, both charges derive from laying undue stress upon psychology as the only legitimate fibre from which a fictional cloth may be woven. Undoubtedly psychology is necessary--but it can be a warp alone if a strong woof is supplied. Let me cite two imaginary examples. If a single scientist had released atomic energy and was in doubt as to whether he should destroy his secret or reveal it, the psychological processes that determine his decision become more relevant to consideration than the decision itself. But if that same scientist managed by the aid of atomic energy to transport himself to Mars, I would unquestionably be more interested in what he found on that planet than in why an Oedipus complex drove him there in the first place.

In the fiction of Garrett Serviss the sweeping magnitude of events described gives them the leading role. Yet within the limits he has set for himself he has used human psychology to good advantage. His stories

do not lack empathy, and they are rich in pictorial detail. Inevitably they reflect the mores of the time, but do not emphasize them unduly. As a consequence they remain readable and entertaining even to this day.

They show, too, that he was familiar with the works of the few authors in the genre who preceeded him. A Columbus of Space was dedicated "to the readers of Jules Verne's romances,"

> Not because the author flatters himself that he can walk in the Footsteps of that Immortal Dreamer, but because, like Jules Verne, he believes that the World of Imagination is as legitimate a Domain of the Human Mind as the World of Fact.

Garrett Serviss modestly underestimated his abilities. With the perspective we possess today it can be seen that he is easily the equal of Verne, standing with him and H. G. Wells as one of the foremost science-fiction writers of his day.

A. Langley Searles
New York, N. Y.
May 1947

EDISON'S CONQUEST OF MARS

CHAPTER ONE

"LET US GO TO MARS"

It is impossible that the stupendous events which followed the disastrous invasion of the earth by the Martians should go without record, and circumstances having placed the facts at my disposal, I deem it a duty, both to posterity and to those who were witnesses of and participants in the avenging counterstroke that the earth dealt back at its ruthless enemy in the heavens, to write down the story in a connected form.

The Martians had nearly all perished, not through our puny efforts, but in consequence of disease, and the few survivors fled in one of their projectile cars, inflicting their crudest blow in the act of departure.

They possessed a mysterious explosive, of unimaginable puissance, with whose aid they set their car in motion for Mars from a point in Bergen County, N. J., just back of the Palisades.

The force of the explosion may be imagined when it is recollected that they had to give the car a velocity of more than seven miles per second in order to overcome the attraction of the earth and the resistance of the atmosphere.

The shock destroyed all of New York that had not already fallen a prey, and all the buildings yet standing in the surrounding towns and cities fell in one far-circling ruin.

The Palisades tumbled in vast sheets, starting a tidal wave in the Hudson that drowned the opposite shore.

The victims of this ferocious explosion were numbered by tens of thousands, and the shock, transmitted through the rocky frame of the globe, was recorded by seismographic pendulums in England and on the Continent of Europe.

The terrible results achieved by the invaders had produced everywhere a mingled feeling of consternation and hopelessness. The devastation was widespread. The death-dealing engines which the Martians had brought with them had proved irresistible and the inhabitants of the earth possessed nothing capable of contending against them. There had been no protection for the great cities; no protection even for the open country. Everything had gone down before the savage onslaught of those merciless invaders from space. Savage ruins covered the sites of many formerly flourishing towns and villages, and the broken walls of great

cities stared at the heavens like the exhumed skeletons of Pompeii. The awful agencies had extirpated pastures and meadows and dried up the very springs of fertility in the earth where they had touched it. In some parts of the devastated lands pestilence broke out; elsewhere there was famine. Despondency black as night brooded over some of the fairest portions of the globe.

Yet all had not been destroyed, because all had not been reached by the withering hand of the destroyer. The Martians had not had time to complete their work before they themselves fell a prey to the diseases that carried them off at the very culmination of their triumph.

From those lands which had, fortunately, escaped invasion, relief was sent to the sufferers. The outburst of pity and of charity exceeded anything that the world had known. Differences of race and religion were swallowed up in the universal sympathy which was felt for those who had suffered so terribly from an evil that was as unexpected as it was unimaginable in its enormity.

But the worst was not yet. More dreadful than the actual suffering and the scenes of death and devastation which overspread the afflicted lands was the profound mental and moral depression that followed. This was shared even by those who had not seen the Martians and had not witnessed the destructive effects of the frightful engines of war that they had imported for the conquest of the earth. All mankind was sunk deep in this universal despair, and it became tenfold blacker when the

astronomers announced from their observatories that strange lights were visible, moving and flashing upon the red surface of the Planet of War. These mysterious appearances could only be interpreted in the light of past experience to mean that the Martians were preparing for another invasion of the earth, and who could doubt that with the invincible powers of destruction at their command they would this time make their work complete and final?

This startling announcement was the more pitiable in its effects because it served to unnerve and discourage those few of stouter hearts and more hopeful temperaments who had already begun the labor of restoration and reconstruction amid the embers of their desolated homes. In New York this feeling of hope and confidence, this determination to rise against disaster and to wipe out the evidences of its dreadful presence as quickly as possible, had especially manifested itself. Already a company had been formed and a large amount of capital subscribed for the reconstruction of the destroyed bridges over the East River. Already architects were busily at work planning new twenty-story hotels and apartment houses; new churches and new cathedrals on a grander scale than before.

Amid this stir of renewed life came the fatal news that Mars was undoubtedly preparing to deal us a death blow. The sudden revulsion of feeling flitted like the shadow of an eclipse over the earth. The scenes that followed were indescribable. Men lost their reason. The faint-hearted ended the suspense with self-destruction, the

stout-hearted remained steadfast, but without hope and knowing not what to do.

But there was a gleam of hope of which the general public as yet knew nothing. It was due to a few dauntless men of science, conspicuous among whom were Lord Kelvin, the great English savant; Herr Roentgen, the discover of the famous X-ray, and especially Thomas A. Edison, the American genius of science. These men and a few others had examined with the utmost care the engines of war, the flying machines, the generators of mysterious destructive forces that the Martians had produced, with the object of discovering, if possible, the sources of their power.

Suddenly from Mr. Edison's laboratory at Orange flashed the startling intelligence that he had not only discovered the manner in which the invaders had been able to produce the mighty energies which they employed with such terrible effect, but that, going further, he had found a way to overcome them.

The glad news was quickly circulated throughout the civilized world. Luckily the Atlantic cables had not been destroyed by the Martians, so that communication between the Eastern and Western continents was uninterrupted. It was a proud day for America. Even while the Martians had been upon the earth, carrying everything before them, demonstrating to the confusion of the most optimistic that there was no possibility of standing against them, a feeling--a confidence had manifested itself in France, to a minor extent in England, and particularly in Russia, that

the Americans might discover means to meet and master the invaders.

Now, it seemed, this hope and expectation was to be realized. Too late, it is true, in a certain sense, but not too late to meet the new invasion which the astronomers had announced was impending. The effect was as wonderful and indescribable as that of the despondency which but a little while before had overspread the world. One could almost hear the universal sigh of relief which went up from humanity. To relief succeeded confidence--so quickly does the human spirit recover like an elastic spring, when pressure is released.

"Let them come," was the almost joyous cry. "We shall be ready for them now. The Americans have solved the problem. Edison has placed the means of victory within our power."

Looking back upon that time now, I recall, with a thrill, the pride that stirred me at the thought that, after all, the inhabitants of the earth were a match for those terrible men from Mars, despite all the advantage which they had gained from their millions of years of prior civilization and science.

As good fortunes, like bad, never come singly, the news of Mr. Edison's discovery was quickly followed by additional glad tidings from that laboratory of marvels in the lap of the Orange mountains. During their career of conquest the Martians had astonished the inhabitants of the earth no less with their flying machines--which navigated our atmosphere

as easily as they had that of their native planet--than with their more destructive inventions. These flying machines in themselves had given them an enormous advantage in the contest. High above the desolation that they had caused to reign on the surface of the earth, and, out of the range of our guns, they had hung safe in the upper air. From the clouds they had dropped death upon the earth.

Now, rumor declared that Mr. Edison had invented and perfected a flying machine much more complete and manageable than those of the Martians had been. Wonderful stories quickly found their way into the newspapers concerning what Mr. Edison had already accomplished with the aid of his model electrical balloon. His laboratory was carefully guarded against the invasion of the curious, because he rightly felt that a premature announcement, which should promise more than could actually be fulfilled, would, at this critical juncture, plunge mankind back again into the gulf of despair, out of which it had just begun to emerge.

Nevertheless, inklings of the truth leaked out. The flying machine had been seen by many persons hovering by night high above the Orange hills and disappearing in the faint starlight as if it had gone away into the depths of space, out of which it would re-emerge before the morning light had streaked the east, and be seen settling down again within the walls that surrounded the laboratory of the great inventor. At length the rumor, gradually deepening into a conviction, spread that Edison himself, accompanied by a few scientific friends, had made an experimental trip to the moon. At a time when the spirit of mankind was

less profoundly stirred, such a story would have been received with complete incredulity, but now, rising on the wings of the new hope that was buoying up the earth, this extraordinary rumor became a day star of truth to the nations.

And it was true. I had myself been one of the occupants of the car of the flying Ship of Space on that night when it silently left the earth, and rising out of the great shadow of the globe, sped on to the moon. We had landed upon the scarred and desolate face of the earth's satellite, and but that there are greater and more interesting events, the telling of which must not be delayed, I should undertake to describe the particulars of this first visit of men to another world.

But, as I have already intimated, this was only an experimental trip. By visiting this little nearby island in the ocean of space, Mr. Edison simply wished to demonstrate the practicability of his invention, and to convince, first of all, himself and his scientific friends that it was possible for men--mortal men--to quit and to revisit the earth at their will. That aim this experimental trip triumphantly attained.

It would carry me into technical details that would hardly interest the reader to describe the mechanism of Mr. Edison's flying machine. Let it suffice to say that it depended upon the principal of electrical attraction and repulsion. By means of a most ingenious and complicated construction he had mastered the problem of how to produce, in a limited space, electricity of any desired potential and of any polarity, and

that without danger to the experimenter or to the material experimented upon. It is gravitation, as everybody knows, that makes man a prisoner on the earth. If he could overcome, or neutralize, gravitation he could float away, a free creature of interstellar space. Mr. Edison in his invention had pitted electricity against gravitation. Nature, in fact, had done the same thing long before. Every astronomer knew it, but none had been able to imitate or to reproduce this miracle of nature. When a comet approaches the sun, the orbit in which it travels indicates that it is moving under the impulse of the sun's gravitation. It is in reality falling in a great parabolic or elliptical curve through space. But, while a comet approaches the sun it begins to display--stretching out for millions, and sometimes hundreds of millions of miles on the side away from the sun--an immense luminous train called its tail. This train extends back into that part of space from which the comet is moving. Thus the sun at one and the same time is drawing the comet toward itself and driving off from the comet in an opposite direction minute particles or atoms which, instead of obeying the gravitational force, are plainly compelled to disobey it. That this energy, which the sun exercises against its own gravitation, is electrical in its nature, hardly anybody will doubt. The head of the comet being comparatively heavy and massive, falls on toward the sun, despite the electrical repulsion. But the atoms which form the tail, being almost without weight, yield to the electrical rather than to the gravitational influence, and so fly away from the sun.

Now, what Mr. Edison had done was, in effect, to create an electrified

particle which might be compared to one of the atoms composing the tail of a comet, although in reality it was a kind of car, of metal, weighing some hundreds of pounds and capable of bearing some thousands of pounds with it in its flight. By producing, with the aid of the electrical generator contained in this car, an enormous charge of electricity, Mr. Edison was able to counterbalance, and a trifle more than counterbalance, the attraction of the earth, and thus cause the car to fly off from the earth as an electrified pithball flies from the prime conductor.

As we sat in the brilliantly lighted chamber that formed the interior of the car, and where stores of compressed air had been provided together with chemical apparatus, by means of which fresh supplies of oxygen and nitrogen might be obtained for our consumption during the flight through space, Mr. Edison touched a polished button, thus causing the generation of the required electrical charge on the exterior of the car, and immediately we began to rise.

The moment and direction of our flight had been so timed and prearranged, that the original impulse would carry us straight toward the moon.

When we fell within the sphere of attraction of that orb it only became necessary to so manipulate the electrical charge upon our car as nearly, but not quite, to counterbalance the effect of the moon's attraction in order that we might gradually approach it and with an easy motion,

settle, without shock, upon its surface.

We did not remain to examine the wonders of the moon, although we could not fail to observe many curious things therein. Having demonstrated the fact that we could not only leave the earth, but could journey through space and safely land upon the surface of another planet, Mr. Edison's immediate purpose was fulfilled, and we hastened back to the earth, employing in leaving the moon and landing again upon our own planet the same means of control over the electrical attraction and repulsion between the respective planets and our car which I have already described.

When actual experiment had thus demonstrated the practicability of the invention, Mr. Edison no longer withheld the news of what he had been doing from the world. The telegraph lines and the ocean cables labored with the messages that in endless succession, and burdened with an infinity of detail, were sent all over the earth. Everywhere the utmost enthusiasm was aroused.

"Let the Martians come," was the cry. "If necessary, we can quit the earth as the Athenians fled from Athens before the advancing host of Xerxes, and like them, take refuge upon our ships--these new ships of space, with which American inventiveness has furnished us."

And then, like a flash, some genius struck out an idea that fired the world.

"Why should we wait? Why should we run the risk of having our cities destroyed and our lands desolated a second time? Let us go to Mars. We have the means. Let us beard the lion in his den. Let us ourselves turn conquerors and take possession of that detestable planet, and if necessary, destroy it in order to relieve the earth of this perpetual threat which now hangs over us like the sword of Damocles."