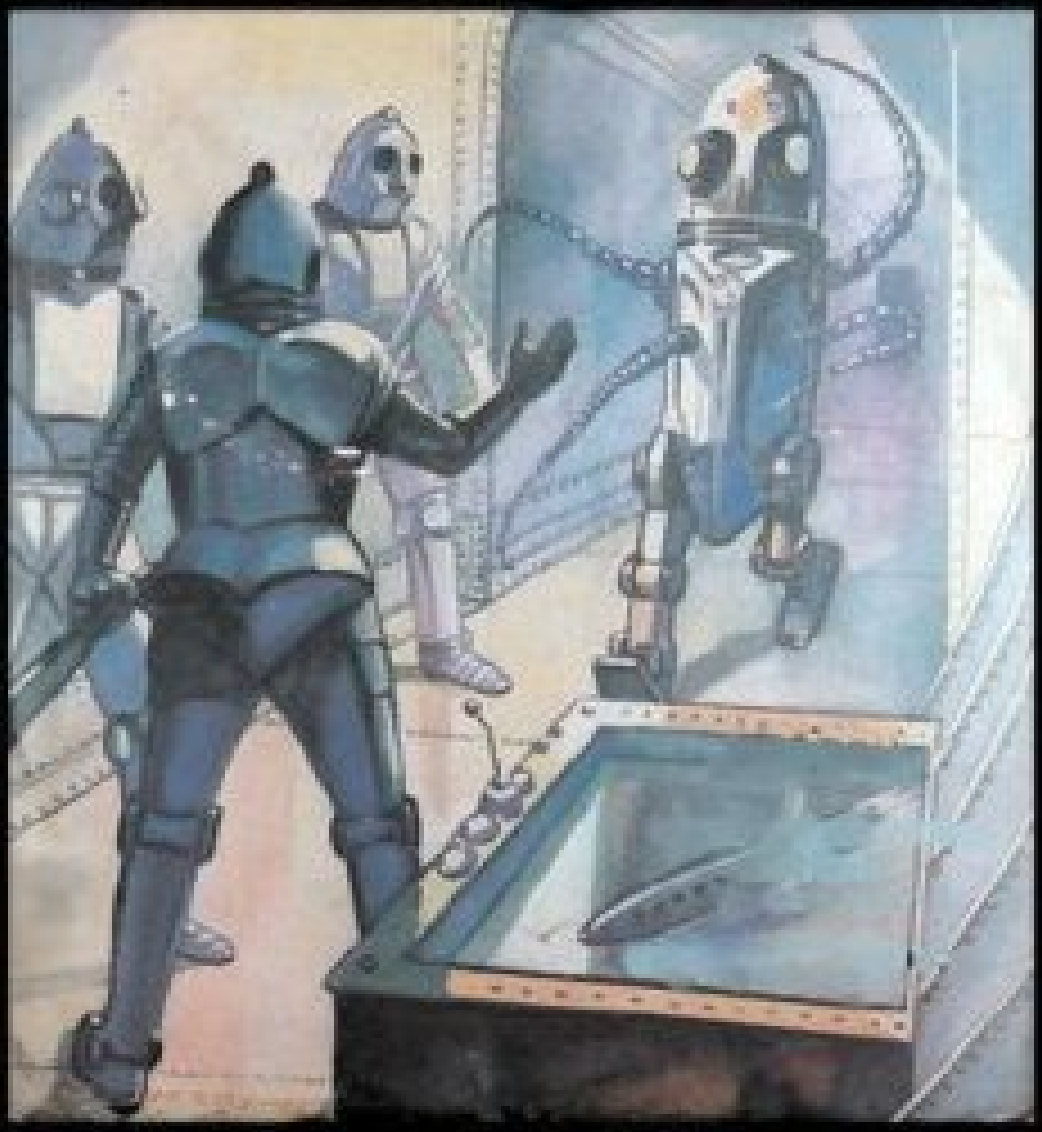
The War of the Planets



Harl Vincent

The War of the Planets

by Harl Vincent

As promised, the Johnny Pez blog now presents "The War of the Planets", Harl Vincent's sequel to his first published story, "The Golden Girl of Munan". "The War of the Planets" first and only appearance in print was in the January 1929 issue of Amazing Stories magazine, seven months after the publication of the original story. It is now twenty years since the events in "The Golden Girl of Munan" took place, and Thelda Serano Hamilton is dozing in the New York apartment she shares with her husband...

The War of the Planets

part 1

I.

In a large airy room, handsomely furnished and decorated in the prevailing style of the better class of apartments of the twenty-fifth century, sat a beautiful woman. The chair in which she reposed was deep-cushioned, and the luxuriousness of its upholstery had lured her to doze in its seductive embrace. Her eyes were closed, the long lashes sweeping cheeks of ivory. The rosy lips curved in a smile that bespoke contented dreams. A mass of red-gold hair tumbled about her head and shoulders in enchanting disarray, presenting an altogether beautiful picture.

Her dreams were happy indeed, dating back two decades to the year 2406 when she was but a young girl. The most frequently occurring theme was a panorama of the trip to New York in Professor Nilsson's aero, the Pioneer, leaving the watery grave of the island of Munan with Roy Hamilton at her side--dear Roy, who soon became her beloved husband and the father of their son Walter, now a fine upstanding young man of nineteen. Visions of their welcome in the metropolis of the world; of the happiness of her dearest friend Zora in the love of that other new-found companion, the professor--of the wonderment of the rest of their group at the new environment--all found a place in the fantasy.

This was Thelda, the "golden girl" of Munan, whose voice had called Roy and the professor to her far-off home and whose action in so doing had resulted in the annihilation of that terrible island and the consequent salvation of the outside world from the horrible destruction which had been planned by the Munanese.

The years had dealt kindly with Thelda. Her life had been so

supremely happy since her escape from the island of hate, that not one wrinkle of care marred that beautiful face. Her contentment in the love of her husband and of their splendid son had served to enhance the loveliness which had first enthralled Roy. Indeed, to see her with her son, one would be constrained to think of them as sister and brother, rather than as mother and son.

The smile on her face became even more happy as her dreams carried her along later years of the twenty that followed her marriage.

"Mother!" excitedly called out the voice of a clear-eyed, strapping youth who rushed pell-mell into the room. "Oh, I'm so sorry," he continued, observing her quick start, "I didn't know you were napping."

"Walter, dear," she replied, as she sat erect and smoothed back her tumbled golden locks, "it is a happy awakening from happy dreams of the past to find you at my side.

"But what brings you in so obviously wrought up, Walter?"

"Oh, mother, there is the most interesting news," said the boy, as he stooped for a hasty kiss and immediately rushed to a nearby table where reposed the videophone.

He turned a small lever labeled "General News," and immediately the voice of a news announcer filled the room while the disc of the instrument lighted brilliantly.

The scene in the disc was that of the dome room of a large observatory, where the astronomer could be seen at the eyepiece of his telescope.

"Now," spoke the voice of the announcer, "we have transferred ourselves to Castle Mountain Observatory, near Banff. It was from

here that the first news of the strange manifestations in the heavens was given out, and the astronomer is now training his telescope on the locus of the phenomenon, so that adjustments can be made to permit the world to see for itself through the medium of the videophone disc.

"Please stand by until the necessary connections are made."

"What is it all about, son?" asked Thelda in surprise.

"No one seems to know, mother. But, as near as I can make out from the public news video on the square, a large group of spherical objects has been sighted in the heavens about a hundred thousand miles from the earth. These are progressing in our direction at great speed and none of our astronomers are agreed as to their nature. The public ways are packed with people and everyone is greatly concerned."

"That is strange, isn't it?" responded his mother. "But if these bodies are already close to our earth, why is it that they were not seen before?"

"I don't know, mother, unless it is because they came from an infinite distance and could not be seen by our most powerful telescopes while much farther away. And, though the first reports are most contradictory, everyone fears the worst. The people on the northbound moving ways are pushing and jostling and fighting to be first to get out of the city. As if it would do them any good to be in the open country if any calamity threatens our world from the heavens!" The boy's voice was scornful.

* * *

At that moment the news announcer's voice burst forth from the

videophone:

"Connections have now been established with the great reflector at Castle Mountain. If you darken your rooms, you will find that the newly discovered phenomenon is dimly visible in the disc of your instrument."

Walter switched off the lights and drew two chairs close to the videophone.

Thelda joined him there and the two gazed intently at the disc.

The view was very indistinct at first, but, as their eyes became accustomed to the darkness, a small group of weird objects became visible in the center of the disc. These appeared to be a mass of closely associated spherical organisms, more like fish eggs than anything else to which they could be compared. However, they were not as closely packed. A noticeable space separated each globule from its fellows and, after watching for some little time, they observed that the positions of each were constantly shifting with relation to the others. They seemed to be floating in a mass, but aimlessly as regards formation--drifting hither and yon as if blown about by errant winds. The size of a single globe as seen in the disk of the video was less than a quarter inch in diameter.

The voice of the announcer droned endlessly as the two watched and listened in amazement:

"Measurements taken at this observatory show that each of these objects is four to five hundred feet in diameter. Were it not for the extreme power of this, the world's greatest reflector, the objects would scarcely have been located for another twenty-four hours. Their speed has been estimated as one thousand miles an hour and the present distance from the earth one hundred and eight thousand

miles. If nothing occurs to alter their velocity or to deflect them from their present course, they will reach our earth in four and one half days. Speculation is rife as to what will happen if this transpires, but no satisfactory conclusion can be reached until it has been determined what the objects are. It is not considered probably that they are fragments of larger celestial bodies on account of their uniformity in size and their true spherical shape. Nothing definite can be said about it yet."

At this juncture their individual call sounded from the videophone and Walter flipped back the news lever to permit the incoming personal call to be made. The disc flashed brightly and the face of his father appeared.

"Hello, folks," spoke the cheery voice of the man they both loved. "Why in the world are you sitting in the darkness? Oh, I know--you have been listening to the absurd reports of some menace from the skies. Don't pay any attention to them. There is nothing to be alarmed about. But, what I called for was to tell you that I am leaving for home right away and that good old Prof. Nilsson is coming for dinner and is bringing Zora and Dorothy with him. That will please you I know, Walter," he concluded with a wink at Thelda.

"Why, that is lovely, Daddy," spoke Thelda, "I shall make arrangements at once."

"All right, dear. I'll be home in ten minutes, but I'm afraid we're going to have to keep an eye on that son of ours this evening," grinned Roy. "So long."

The disc went dark and the voice was gone.

Thelda snapped on the lights and when she turned to look at Walter she saw that he was blushing like a girl. She smiled inwardly,

knowing that Walter's fondness for Dorothy, the daughter of Zora and the professor, had ripened into real love. Well, they would be a fine couple, a good match when the time came, she thought; this fine, black-haired, firm-jawed son of hers and the petite, vivacious, blonde Dorothy would be very happy together.

part 2

II.

When Roy Hamilton left his studio that night he started for home with grave misgivings. He too had seen and heard of the strange happening that had suddenly been forced upon the attention of a peaceful and happy world. He had none of the confidence he had displayed when conversing with his family. But he resolved that he would do all in how power to keep Thelda from worrying. His son, he knew, would be intensely interested and no power on earth could keep him from learning all about whatever was going on. But Thelda, his "golden girl" these twenty years, he would keep happy and contented--would shelter her from all harm with his own life, if need be.

During the swift trip uptown on the moving way, he considered some of the possibilities of the situation. What if these strange manifestations betokened the destruction of his world? If that was the case--well, they would all go together and probably nothing could be done about it. But, suppose the approaching objects were some sort of engines of warfare from another planet? This possibility had been suggested by the professor during their conversation a few minutes before, but Roy had scorned the idea. Why, scientists and astronomers were almost universally agreed that life on any planet in the solar system, other than the earth, was impossible. But, if they were wrong--then what? If it were conceivable that some such beings did exist and that they could make war on the world, what a defenseless planet they would find! Since 1950 all efforts of his world had been expended in peaceful pursuits. All weapons of warfare had been scrapped, all organized armies disbanded. It had been a happy period of four and a half centuries and more.

He could not convince himself that such a thing was possible or even probable, but he had a vague uneasy feeling that could not be shaken off. And, for some unaccountable reason, he kept associating with the present happenings the event of twenty years before--the destruction of Munan and his own part in its accomplishment. But that was absurd! What possible connection could there be in the two circumstances, so widely separated? Resolutely he threw off this mood as he left the moving way and proceeded to the entrance of his own apartments.

"Hello, dear," he cheerily greeted his wife, as she welcomed him with a warm embrace at the door. "Have the Nilssons arrived yet? They should be here by now."

"No, they haven't. But Zora just spoke with me and she said they would be over in a very short time. I am awfully glad they are coming."

"So am I. Nils and I have not had a talk for a long time now and I am anxious to discuss Walter's future with him. By the way--where is Walter?"

Thelda smiled and pointed to the boy's own room. "He's in there, fixing himself up," she whispered. "And, do you know, Daddy, I shouldn't be greatly surprised if he proposes to Dorothy tonight. I have been watching them for some time and the signs are unmistakeable."

"Well, nothing would please me more, dear. Of course they are quite young, but that is no objection in this day and age. They are undoubtedly in love with one another--have been since childhood--and their Board of Eugenics records are perfect. Between Nils and myself we could fix them fairly well to start their home and Walter could carry on with his studies as at present."

"Yes, Roy, I agree with you. In perhaps a year they should marry. But I must hurry and make my arrangements with the community commissariat so we can have our dinner in time."

She patted him on the arm and went into the next room to place her order over the videophone.

* * *

Roy looked grave for a moment, then stepped to the door of Walter's room and tapped on it softly.

"May I come in, son?" he asked.

"Sure thing, Dad," sang out the voice of the boy.

He entered, closing the door softly behind him. Walter was before the mirror, putting the finishing touches on his sleek black hair. Roy grinned understandingly as he crossed the room and put his hand on the boy's shoulder.

"Gee! I'm glad to see you tonight, Dad," said Walter, taking his father's hand in his own equally capable ones, "I'm much worried about this thing that's being reported by the General News Bureau."

"So am I, son. That is what has been bothering me too, and is the very thing I came to talk with you about. We mustn't speak too loudly, as I do not wish to alarm your mother."

"Neither do I, Dad. I hate to think of her worrying over so intangible a thing as this. And you know she will worry, not about herself but about you and me."

"That's just it, Walter, my boy. And, for no good reason at all, I have a

strange feeling about the whole business. I fear it bodes no good."

"Me, too," said the son. "But how are we going to keep mother from getting the news as it comes out?"

"I have thought of that and have already spoken with George Cox, who is president of the New York Theatres Company. He tells me that all news will be barred from the places of amusement in the entire city. So we are going to send your mother to the theatre tonight with Zora and Dorothy. You and I and the professor shall have the place to ourselves to talk things over."

Walter's face fell in disappointment but brightened at once as he realized the necessity of this move.

"That's a good idea, Dad," he said, "and while they are out we can listen to the reports and discuss it with Professor Nilsson. He may have some theories himself."

"Yes, I believe he has," replied his father soberly. "But, let us join your mother now."

The two men--the son as tall and straight and handsome as the father--left the room and engaged Thelda in light conversation. She was in excellent spirits and evidently had forgotten all about the discomforting news of the early evening.

Dinner had been prepared by the servants from the commissariat, and soon their guests arrived.

Zora and Thelda embraced as only two such dear friends could greet each other. Roy took his old friend's hand in his and gazed deep into his solemn gray eyes. They gripped hard; harder than they had since the days of Munan. Dorothy and Walter were shy with the shyness that comes up suddenly between childhood sweethearts when they

learn that love has come to them--real, grown-up love. Immediately the rooms echoed with the pleasantries and laughter of the six.

During dinner, at the first convenient lull in the conversation, Roy spoke up. "Well, girls, I have a pleasant surprise for you. My friend, George Cox, presented me with three passes for "Thunder," the best show in town. Nils and Walter and I wish to have a little talk tonight about Walter's work in the laboratory, so you three are to take the tickets and enjoy yourselves in the theatre while we three discuss details that would be very dry and uninteresting to you."

The announcement met with instant approval by Thelda and Zora, though Dorothy blushed and stole a sly glance at Walter, who was staring fixedly at his plate. The two mothers observed this and exchanged meaning smiles.

part 3

III.

When the ladies were safely on their way to the theatre, the three men sat for a time before the videophone and listened to the latest reports. The view from Castle Mountain was very little different from that which had been observed two hours previously. Of course the strange objects were about two thousand miles closer to the earth, but this was so small a proportion of the total distance that no appreciable increase in the size of the little globes was seen. However, they seemed to have taken on a sort of sheen in the deeper darkness. This was not like the reflected light from planets and planetoids in the field of vision, but was rather an iridescence, a gleam of shifting colors foreign to anything else observable in the sky.

The announcer now dwelt mainly on the disorders which had broken out in many cities all over the world. He spoke of rioting in Denver, Buffalo, Copenhagen, and Alexandria, cautioning the people of the world to calm themselves and to remain in their homes for news, rather than crowding the public squares to listen to the reports over the public videos.

By this time the rotation of the earth had carried the position of the traveling mass so close to the horizon that soon the Castle Mountain reflector would no longer be able to follow it. But the announcer reported that, as soon as connections could be made at another observatory where a view could be obtained, it would again be transmitted over the terrestrial videophone system.

Soon it was necessary to discontinue the view, but the voice of the announcer continued, tonelessly and tiresomely.

The professor gave a grunt of disgust and savagely bit the end from a fresh cigar. He sat up suddenly in his chair and exploded.

"Fools! They will have the whole world in an uproar. Why don't some of our efficient news censors put a stop to this travesty? Roy, if it isn't too much to ask, will you turn the darn thing off?"

Roy laughed, "My sentiments exactly, Nils. I was just going to propose that very thing. Let's do some talking instead. I'd like to hear your theories."

He touched the news lever and the video was silent. After turning on the lights, he returned to his chair and looked inquiringly at the professor.

"Well, how about it, Nils?" he asked.

Walter hung breathlessly on the professor's words as the reply came in measured voice:

"I am very much disturbed, Roy. And you, Walter, I wish you would listen very closely to what I have to say. Your work in my laboratory has prepared you to a great extent to appreciate and understand science and scientific reasoning, and I have a feeling that you are going to learn many things, during the next few days or weeks or months, which I could not possibly teach you myself. Of course, I am merely going to theorize, but it seems to me that if our great astronomers would do a little more theorizing and a little less looking through their telescopes at this stage of the game when the objects can scarcely be seen, they would arrive at the same conclusion as I have.

"Don't laugh when I tell you I honestly believe that these seemingly small spheres now seen approaching our earth are space-traversing

machines of some sort and that they are coming to us from another planet, quite probably with no good intentions."

"But, Professor," objected Walter, "the theory that life exists on other planets in our solar system has been opposed by our most eminent scientists for many centuries."

"I know it has, Walter. Nevertheless, that does not make the thing impossible. From your reading you must know that as far back as the nineteenth century, some of the savants, notably Lowell, really believed that Mars was inhabited. Others said that this was extremely unlikely, but that there was a possibility of the existence of life on Venus. Later, as more and more power in optical instruments was attained, our astronomers began to think they were observing such detailed formations and making such careful and accurate determinations of atmospheric densities and constituents that they had definitely proved the non-existence of life on any of the other planets. Still I claim they can be wrong. What does the Castle Mountain reflector, the largest in existence, tell us of the possibility of life on a planet many millions of miles from us when it appears as a speck not over a quarter inch across, like an object that is four or five hundred feet in diameter and a mere hundred thousand miles away?"

"Come now, Nils," interjected Roy, "surely you don't believe that creatures similar to ourselves can exist, say in the atmosphere of Mars? If I remember rightly, the gravity at the surface of Mars is only about one-third that of the earth, and the atmosphere extremely rare. Surely any beings existing there would be misshapen and entirely unlike ourselves or any earthly life."

"Another fallacy," said the professor, settling back for a long talk. "That has been the reasoning of students for ages, but again I say they are quite possibly wrong in their conclusions. Not that it would

make any difference in the present instance what the creatures look like, provided they possess a high order of intelligence. In fact, being warred upon by ugly, unspeakable monsters from another world, would be even more horrible to contemplate than if they resembled human beings."

* * *

"Be that as it may, I still maintain that life is possible on any of the planets--any of them. The two most likely are Mars and Venus, and I see no reason that has been or can be advanced which makes it impossible for beings, similar to us in all outward appearances, to live on either. Take Mars, for instance. Science has proved that its atmosphere is extremely rare, that its gravity constant is, as you say, about one-third that of the earth. Centuries ago this led to the conclusion that, if any higher form of life existed, the creature must necessarily be of a large size, with atrophied leg muscles; that they must be provided with huge barrels of chests to permit breathing the attenuated atmosphere; that their ears must be enormously large to permit of hearing sounds which are not readily conducted by an atmosphere of extremely low density. They tended to show that, with the scarcity of water on the planet, plant life was practically impossible and that living beings could not possibly contrive to get along in any great numbers, due to this scarcity.

"Again I say, they may be wrong. We all believe in God. Science has never disproved the essentials of His Word. We have all read that He created man in His own image. Many believe that the word 'image' here does not mean a physical likeness. Possibly it doesn't. But suppose it does? Is there any reason He could not create, by a process of evolution, if you choose, a physical likeness under any possible conditions? The likeness might only be external, it is true. But why the oversize lungs and chest? Why the spindly legs, the huge ears? A body cast in the same mold as yours or mine could easily

have entirely different density, different specific gravity as a whole. Why could not the bones be larger in proportion, mere shells, so as to weigh much less with relation to the entire body? The very cells comprising flesh, muscle, skin, might well be larger--contain more air, less water. The density of the body might easily be a third of ours, did environment make it necessary. Lungs identical in size with our own could readily extract sufficient oxygen from any reasonable rarity of atmosphere were the rate of respiration increased proportionately. Or, even with the same rate of respiration, sufficient could be provided for a blood of different characteristics from our own--blood that would not require as much oxygen to perform its functions in a body with suitably altered chemical changes. Auditory nerves of vastly greater sensitivity than ours would eliminate the necessity for the grotesque ears. No, I claim that beings exactly similar to humans in appearance, with as great or greater brain power, can and probably do inhabit the planet Mars. In fact, their mental development is likely to exceed our own greatly, since Mars is a far more ancient planet and has had much more time for the evolution and education of its peoples, if such exist."

Walter listened attentively. Roy laughed, "Why Nils, I haven't heard you hold forth like this in years. I am almost tempted to start calling you Prof again. But go on. It is extremely interesting."

Unheeding, the professor continued. "As regards Venus, there are no such objections. Its size is almost exactly the same as that of our earth. Its atmosphere is similar in composition and density and is known to contain water vapor. Its gravity constant is about seven-eighths of ours. Centuries ago there was some doubt as to its period of rotation about its axis. Now we know for a certainty that it rotates once in about twenty-four hours--that its day is almost exactly the same length as our own. The plane of the equator inclines to that of its orbit. Thus its seasons are similar to those on earth, though of shorter duration, since its year is but 224 days in length. The surface

temperature averages about ten degrees higher than that of our earth, but that is not serious. All in all, it seems very simple to conclude that life does indeed exist on Venus and that it is inhabited by an intelligent race of beings very similar to ourselves.

"Now, if we accept the hypothesis that life exists in intelligent form on one or both of these planets and that beings from one or the other are on their way to visit our earth, what may we expect? If these spheres approaching us are space fliers, peopled by such beings, they will be here in a very few days. If their mission is a peaceful one all will be well and we may benefit by it greatly. But if it is a warlike invasion--I shudder to think of the result. Still, 'Necessity is the mother of invention' and we might not fare so badly after all. However, they would surely cause great damage and loss of life before means could be found to conquer them."

The professor became silent. Thoughtfully he tapped the arm of his chair with his finger-tips.

"Do you really think there is a possibility of an actual 'War of the Worlds'?" eagerly asked Walter.

"Yes I do, Walter," answered the professor. "I cannot fully explain why I feel this way, but I have the most uncanny premonition of disaster from such a source that I simply cannot rid my mind of it."

Roy bent forward, startled. "Why Nils, I had the same sort of feeling this afternoon when I first heard the news," he said. "It is a strange coincidence."

The professor seemed much interested. "And did you think of Munan at the same time?" he asked.

"I did, and I thought it very peculiar."

The two gazed at each other in wonderment. They were remembering the telepathic faculties of certain of the Munanese. But Walter could not understand.

For two hours they discussed the problem--considered it from every angle--and when they had exhausted their ideas they were no nearer a definite conclusion than they were at the beginning. Walter could see only adventure in any of the possibilities that were suggested, but the older men viewed it with deep concern.

Shortly before midnight the ladies returned and the subject was dropped. The news lever of the videophone was not touched again that night.

Walter managed to get Dorothy aside and engage her in an earnest conversation. What was said at this time will never be known to any but themselves, but when they returned to the rest of the group, they were strangely silent.

The party broke up within an hour and cheerful and affectionate adieux were made. No further mention was made of the strange news of the day and, when they retired, Walter and his father congratulated themselves that they had kept from Thelda any hint of impending trouble.

part 4

IV.

Two nights later the same group was again gathered together, this time in the Nilsson apartments. And now there was no effort at concealment. There could be none, since the whole world was now apprised of the fact that some unknown danger threatened and that whatever happened would occur within the next sixty hours.

Thelda had laughed gleefully when she found that Roy and Walter had conspired to keep the thing from her.

"Why, Daddy dear," she had said, rumpling Roy's hair with both hands. "You forget my highly developed faculty of thought-reading. It is true that I have held it in abeyance since coming from Munan, but when you are troubled by anything, it always comes back to me. You were a dear for sending us out the other night, but I knew just how it was and how concerned you were. You should be punished, though, for thinking so poorly of my courage. Do you not remember the days in the cavern under Leyris, when all was in doubt, when we never knew from one day to the next whether we should leave Munan alive, whether we could save the world or not? Did I lack courage then?"

"Indeed you did not," replied Roy, contritely. "You were marvelous then, and still are. I was a fool to think that you would not take this heroically also."

"But I must confess that I am somewhat worried at that. If this thing does develop, as you and the professor seem to fear, it will mean a bloody war, will it not?"

"I'm afraid it will, sweetheart. And probably a more terrible war than

has ever been fought on this earth--as horrible as would have been the vengeance of the Munanese. Having absolutely no weapons of defense, we should be at their mercy and if they wished to utterly destroy us they could undoubtedly do so."

Thelda sighed. "Then you, my dear, and our Walter also, would be compelled to engage in combat," she said with fear clutching at her heart.

"No doubt we would. But do not fret yourself about it--yet. We have no certain knowledge that our fears are to be realized."

The videophone spoke: "NY-14-328, NY-14-328."

The professor hurried in from the next room as a stern but kindly face appeared on the disc.

"Professor Nilsson?" queried this gentleman, when he observed the professor approaching the instrument.

"Yes, Mr. Secretary. Can I be of service to you?"

"I believe you can. We have received a radio message at Washington from the invaders, and you are already involved. Can you leave for Washington at once and bring Roy Hamilton with you?"

"Yes sir," he responded, as he noted Roy's vigorous nod of acquiescence. "We will leave in the Pioneer within ten minutes and can be in Washington in about one hour."

"Excellent," approved the voice from Washington. "We shall await you in the Research building. Thank you for your prompt compliance."

The voice broke off and the face disappeared from the disc. This

was the Secretary of Terrestrial Scientific Research, whose features were at once recognized by all present.

"Oh Dad, may I go?" asked Walter at once.

The faces of the two women, Thelda and Zora, paled. They gazed at each other with stricken countenances. Dorothy rushed to Walter and buried her head on his shoulder.

Roy turned slowly toward Thelda and she answered his questioning look with a barely perceptible nod.

"Very well, son," he replied. "Make ready at once."

Tearfully hurried leave was taken and the three men rushed for the professor's laboratory, where the aero reposed in its cradle on the top floor. The Pioneer had been used very little since the trip to and from Munan in 2406, but the professor had worked on it from time to time, making alterations and improvements. Walter had never seen it and was highly elated at the prospect of traveling in the craft which had carried his father and the professor on their perilous mission so many years before.

The laboratory was reached in a few minutes and the men clambered through the entrance manhole into the ship and on to the control room. Everything was exactly as Roy had seen it for the first time twenty years before and he thrilled to the same old excitement when the professor clambered into the pilot's seat and turned the switch that started the sphere revolving. Walter watched in amazement as he followed the professor's movements at the controls and saw the electron-collecting cone swing around to a point under the rapidly revolving sphere to direct upon its surface the stream of waste energy which was to raise them from their position and carry them on their journey.

* * *

The roof of the room in which the vessel rested had been slid back and, as the rotating sphere gathered speed, the Pioneer rose vertically, majestically soaring into the night above the great city of New York. Walter did not even go to the floor port-hole to watch the city slide away beneath them as they headed southward. He had seen this wonder too many times from the regular beam-lane liners and from his own small flyabout. Now he was far more interested in the mechanism of the Pioneer, which had always been such a mystery to him. For three years he had worked in this same laboratory with the professor but never until this night had he set eyes on the craft in which he was now being carried. Vaguely he understood that this ship did not depend on the energy carried by the regular beams which radiated to all points of the globe from his city, but obtained its power from stray electrons liberated by the losses of the regular energy systems. He had never understood the need for this but now he saw more clearly its advantages. They were absolutely free lances! Nobody could control their comings and goings and they would still have their source of power if something happened to cut off the regular energy.

While his father and the professor speculated on the contents of the radiogram and the reason for their call to Washington, Walter spent his time examining the mechanisms of the ship and investigating her appointments from stem to stern. Although the professor had always maintained great secrecy regarding the Pioneer and had never explained its workings to Walter, he did not now deter him from pursuing his investigatory ramblings.

Traveling at a speed of five hundred miles an hour, it did not take them long to reach Washington, and the three stepped into the anteroom of the Secretary's office at the exact time promised by the

professor.

They were admitted almost immediately to a large room where sat eight men before the screen of a standard news video. These were the secretary and his advisory council of seven. Here the approaching objects in the heavens appeared much larger and more distinct than when they had last seen them. There seemed to be fully as many as the one hundred and nine which had been counted by the astronomers. Now they looked like nothing so much as soap bubbles, truly spherical, and glistening with myriad shifting and shimmering hues. Beautiful they were, but in some unaccountable way awe-inspiring too. One could almost feel, in the air of the room, the menace of the weird objects.

Following mutual introductions, the Secretary handed to the professor a sheet of paper bearing the well known insignia of the Terrestrial Videophone Company. The three visitors read the message in silence. It was addressed to the President of the Terrestrial Government and read as follows:

"This is a formal declaration of war against the peoples of the world by the peoples of Venus. Munan shall be avenged." The signature was a single word, "Mador."

Roy and the professor gasped when they read this.

"Now you see why I sent for you two gentlemen," spoke the Secretary. "The reference to Munan decided me."

"And a very good reason it was," replied the professor, "but let us think this over. What can be the meaning of that last sentence? And the signature seems to have a familiar sound, too."

"Why, Nils," Roy burst out, "Mador was the name often mentioned by

the Munanese. He was one of their most noted scientists and was very close to the Zar. He was known to be working on some highly secret problem while we were there. But it could not possibly be the same, because none escaped when the island was destroyed."

The professor paled, his fine features taking on an expression of comprehension and consternation.

"It must be the same fellow, my boy," he said haltingly. "I see it all now. Quite probably this scientist was working on the construction of a space flier while we were engaged in our plans to destroy the island and rid the world of its menace. It must be that he had started on this trial trip of the contrivance and was away at the time the island was annihilated. If that is the case he undoubtedly had a number of Munanese with him and when they returned to find their island gone they would quite naturally set out for one of the other planets. Reaching Venus, they set about to make allies of its inhabitants and to plan a war of conquest against us. Hundreds of duplicate fliers could well have been constructed during the intervening twenty years and this is the result. You see I was right in my discussion the other evening. Life does exist on Venus and we are to learn more about it, to our sorrow."

* * *

Walter was bright-eyed with excitement, but his father shook his head gravely.

The Secretary spoke, "From your words I infer that this means a great deal to you; that you are greatly concerned. That is why I called you. Of course the entire world knows the story of the heroic efforts put forth by you and Mr. Hamilton in the Munan affair, but details are more or less forgotten in as long a time as has elapsed since that historic event. Now, with the knowledge possessed by you two

regarding the activities of the Munanese, what can you offer in the way of suggestions as to a means of defense?"

"Mr. Secretary," the professor answered slowly, "that is a question that requires serious thought. Will you grant me until tomorrow morning to consider it?"

"Yes indeed, Professor. But do not forget that our enemies will be upon us at noon of the third day from this. You will have but little more than forty-eight hours in which to work. Possibly the world will again be compelled to rely upon you two to save it from disaster."

"We shall not forget the short time, Mr. Secretary. Roy Hamilton and I will do all within our power. On the face of it, it looks pretty hopeless, but we shall see. I do not have a single idea as yet but it is certain that, whatever may be done, it will have to be worked out in the laboratory. In order to be prepared, I should like to request that you place one of the official laboratories at my disposal with a corps of experts to assist me. Is this possible?"

"Most assuredly," agreed the Secretary. "The entire resources of my department and staff are yours. But there is one other question. Should I not order the videophone system discontinued on account of the possibility of the enemy overhearing conversations relative to the expected attack and to any defense plans which may be made?"

"Not at all," replied the professor. "Although we did receive a radiogram from Mador, you must remember that it was by the old code method and that he has no means of intercepting the standard videophone waves."

"But, Professor," queried the Secretary, "if the enemy can transmit radio messages, even though they be of the code variety, why can they not intercept our video, which, after all, is a means of radio

communication, however advanced it may be over the ancient systems?"

The professor smiled. "I do not believe you have given that point the consideration it deserves, Mr. Secretary," he replied. "It is true that the videophone operates through the medium of high frequency radio vibrations but, as you know, the sound waves imposed on the carrier emitted from each individual video are distorted so as to be received on an ordinary radio as a garbled sequence of sounds, which have no resemblance to the human voice. As you are also aware, each video, though transmitting distorted sounds of a nature different from those of any other video, makes its connections through a central retransmitting office, where the individual distorted wave is rectified and 'undistorted,' so as to be properly received by the video to which the call is being made. Otherwise there would be no assurance at all of secrecy in any videophone calls between individuals. The only exception is the General News video which transmits a highly complicated distorted wave having such a characteristic as to be receivable by all individual videos. This too could not be rectified by any receiver not having the proper rectifying equipment. It is extremely unlikely, in fact I might say practically impossible, that the enemy is able to rectify these distorted waves and make them understandable, as there are an unlimited number of combinations possible in the distorting mechanisms. No, I think there is no likelihood of danger from that source."

"Professor," answered the Secretary, "I am absolutely chagrined at my failure to grasp so simple a problem as this, but in this time of stress and danger, I fear my mind is not working as it should. You are absolutely right about this as you have proved to be about many other things. Now, you will need a headquarters for your consideration of the main problem, and I wish to offer my home to you and your companions. Let us adjourn and leave for my residence at once."

* * *

The Secretary conveyed the visitors to his small, speedy, private aero to his home in the outskirts of the city.

Washington was one of the few cities in the world that still retained the old arrangement of wide streets, spacious detached dwellings, and pedestrian traffic. Of course, there were landing stages on all buildings for the aeros, but there was none of the closely massed, continuous building construction with roofed-over multiple moving ways and artificial temperature control and ventilation encountered almost everywhere else in the world. Here one could look at the stars without taking a long elevator journey to the roof-tops of a completely covered city.

Roy, Walter and the professor were escorted to a spacious suite of rooms and there left to their own devices. The first thing they did was to establish a videophone connection with the professor's apartments in New York. All three spoke to their loved ones and were deeply moved by the expressions of fear in the gentle faces that appeared in the disc. The ladies begged to be allowed to join them in Washington, but Roy and the professor steadfastly refused, since they feared that the initial attack would be aimed at Washington, the seat of the Terrestrial Government.

Far into the night the three men talked, Walter being thrilled to the core at thus having a hand in world affairs of such great moment. Finally the professor requested that the other two retire and leave him to his own thoughts. This they did reluctantly, though they fully realized that the professor's analytical mind could function much better in private.

part 5

V.

Next morning Walter rose far earlier than was his wont and rushed into his father's room. There he found Roy already in the shower and in much better spirits.

"Walter, my boy," spoke Roy, after their good mornings had been exchanged, "I have already talked with the professor and he seems to be hatching a plan. He has not slept at all and has been working that wonderful mind of his to some advantage, I am sure."

"Oh, that's great, Dad," enthused the boy. "Won't it be marvelous if he can figure out some way of repulsing them?"

"It sure will," sputtered his father from the midst of the shower. "And somehow I can't help having confidence in good old Nils. Things looked just as black in Munan, but he solved the problem there. He is a wonder."

By the time Roy was dressed, they heard voices in the sitting room and they entered it to find the professor in conference with the Secretary and two of his aides. The professor had taken full control of the situation and a relieved expression on the Secretary's face had replaced his gloomy one of the night before.

The professor was speaking:

"Yes gentlemen, we are going to meet the enemy and see if we can discover the nature of their craft and the means of offense they are going to use."

"But how will you go?" asked the Secretary.

"In my aero, the Pioneer, the one from which we destroyed the island of Munan."

"But you may be shot down by the enemy before you can learn anything of value," the Secretary objected.

A mysterious smile wreathed the face of the professor. "I think not," he said. "And if you gentlemen are ready, let us go to the landing stage on the Research building and I will show you why."

They left at once in the little aero atop the roof of the Secretary's house. Soon they landed on the spacious stage on the Research building.

Walter cried out in astonishment when they landed, "Why, the Pioneer is gone!"

"Steady, boy, steady," said the professor, with a triumphant laugh. "It's not gone. Don't worry."

He walked a few paces forward and stopped, beckoning the others to follow. When they reached his side he said, "Stretch forth your hands."

All did so, and reacted with alarm as their fingers encountered a solid metal wall directly before them--a wall that could not be seen, though all objects on its other side were plainly observed, as if nothing intervened.

"This is the Pioneer," announced the professor dramatically.

"But we saw it last night," spoke Roy and Walter as one.

"Not its exterior," replied the professor. "If you remember, it was in darkness that we entered the craft. We felt our way to its manhole and it was not until we had lights inside that you saw anything. It was just as invisible last night as it is at this moment."

"Wonderful! Incredible! Astounding!" were the remarks of the Secretary and his aides.

"And now, let us enter," spoke the professor. "I will explain when we reach the control room."

He felt along the invisible hull of the ship with his fingers until he located the manhole, through which, one by one, he assisted the other members of the party. As soon as they were inside, they could see all details of the vessel as clearly as if there was nothing out of the ordinary about it at all.

"Now about our trip to meet the enemy," the professor began, when all were gathered in the control room. "As you have observed, this ship is absolutely invisible to the eye of man when viewed from the outside. Likewise, nothing that it contains can be seen unless you are within. Under such conditions I am sure we can safely go out to meet our attackers without their knowledge."

"But how on earth was this marvel accomplished?" asked the Secretary.

"You have undoubtedly read The History of Munan by Toros, one of the Munanese I brought back from the island?" queried the professor.

"Yes--years ago," was the reply.

"Well, in this book, as well as in my own writings, mention was made of the fact that the Zar's aeros could be made invisible. This was

accomplished by constructing the hulls from the metal munium, which was then coated with a secret substance applied like paint."

"Correct," the Secretary agreed in chagrin, "I had completely forgotten. That goes to show how soon one forgets the really important things in life. It is not very complimentary to your efforts, is it?"

"Merely human nature," commented the professor. "And to accomplish the same result as they did I have reconstructed the Pioneer since our return from Munan, making her hull from the same metal and coating it with the same compound. I had no particular reason for doing this, so must have been guided by good fortune. But you see I had brought samples of the metal and the coating compound with me, and I found that I was able to duplicate them in the laboratory. So here we are--fully prepared for our journey, excepting that we have no means of attacking our enemy. Unluckily, I have never been able to duplicate the liquid with which the crysinum bombs of the Munanese were filled. Some of its constituents were evidently available only on their island. Had we some of those bombs now, we could demoralize our foes in a few hours."

* * *

The mechanism of the vessel was explained in detail and Walter drank in this information with as avid an interest as did the Secretary's party. The fact of the stray electrons filling all space for thousands of miles around the surface of the earth impressed them all greatly--stray electrons lost from the energy systems of the world for centuries and available for use only by the professor's vessel. His invention of the peculiar metal alloy that made it possible to collect this lost energy and put it to work, gave them such a high opinion of his ability that their confidence in him increased each minute. As the crowning proof, came the clever adaptation of the principle of

Flettner of the twentieth century--the collecting of streams of electrons and directing them on the surface of a rotating sphere, instead of using the winds on rotating cylinders as had Flettner.

"There is one feature of this attack which puzzles me," the professor continued, "and that is the comparatively slow rate of speed at which the enemy is approaching. I have not checked the position of Venus with the astronomers but I do know that it is about 26 millions of miles from us at inferior conjunction and 160 millions of miles at superior conjunction. If we assume that it is now, say 80 millions of miles away, the speed of 1000 miles an hour would make the journey one of nearly ten years in length. This is obviously out of the question, so I assume that these space fliers are capable of much greater speed, probably as great as one hundred thousand miles an hour, or even more. Why then they are approaching at the slower speed is beyond me, unless it may be that they have figured on terrorizing our world pretty thoroughly before actually attacking. The radiogram seems to bear out this theory. What they probably did was this: they made the major portion of their journey in fifteen or twenty days; then, when within sight of our largest telescopes, they slowed down to their present speed with the idea of giving us four or five days in which to become utterly demoralized. And that is just about what we have become, judging from the reports of the General News Bureau--thoroughly demoralized."

"I believe your reasoning is sound, Professor," said the Secretary. "But now, if I may interrupt, what are your immediate plans?"

"Well, Mr. Secretary, I should like to leave at once with my two companions and some of your men and make a quick trip to look over this fleet. Possibly we can learn something of value. At least we shall know something of the nature of the approaching craft. We have provisions aboard, a videophone with the call 'Special 28-A' and a beam transmitter--the one with which Munan was destroyed. The last

will probably be of no value against this foe since it was designed to emit the proper frequency for setting off the crysinum bombs. However, we may just be fortunate enough to make a landing on one of the enemy craft, when our ancient hand weapons might be of some use. The main purpose of the trip though, is to reconnoiter."

"But can you make the trip quickly enough, and do your stray energies extend far enough into space?" the Secretary interrogated.

"Yes, indeed. Our maximum speed, after leaving the earth's atmosphere, is terrific. We should be able to meet them in about three hours and will then be something like fifty thousand miles from the earth. As far as the storage of stray electronic energy is concerned, I have calculated that this has now extended to a distance of no less than 300 thousand miles from the earth. In other words, it has filled space to a point some fifty thousand miles beyond our moon."

"Very well then," the Secretary decided. "Go ahead, Professor. And you may take my two aides with you. Will that be enough, or shall I send more of my men?"

"They will be quite enough," said the professor. "And I thank you, Mr. Secretary. We will keep in touch with you by videophone and report whatever of interest occurs. In the meanwhile, it is my suggestion that the general news reports be censored in order that the confusion and disorder now spreading over the earth be kept down to a minimum. You might even order the news people to use my name and that of Roy Hamilton. Spread a little propaganda. Recall the story of Munan and tell them that we are on our way to meet the enemy. I am not so egotistic as to feel that we are bound to be successful, but the effect of such propaganda will be beneficial, anyway."

"Your suggestion is very good," agreed the Secretary. "I will have it

put into effect at once. Well, I can see you are anxious to be off. Here's my hand, and good luck to you. The whole world and its resources are behind you."

They gripped hands and the Secretary hastened to the manhole. When the final farewell was said and the manhole bolted shut, the professor returned to the control room where the rest of the group was gathered. Walter was impatiently awaiting the start. The two aides, Fred and George Bacon, brothers, were examining the machinery of the Pioneer with great interest. Both were scientists of world repute.

The professor's first action was to call the Castle Mountain observatory and obtain the exact position of the approaching fleet. He then pulled the starting switch, adjusted the controls, and headed the Pioneer skyward.

Again they were off!

part 6

VI.

When the novelty of rising from the earth's surface at tremendous speed and of watching it change gradually to a huge bowl with the horizon as a rim, had somewhat worn off, Walter made for the videophone. "NY-14-328," he called.

Soon the voice of Zora answered and Walter spent several minutes apprising her of their plans. She took it all stoically and was particularly pleased that they would be able to keep in touch with the voyagers by videophone. After a few minutes conversation with the mother, Walter shyly requested that Dorothy be called to the instrument. When he viewed her sweet face in the disc, he experienced a sinking sensation and had his first doubts as to whether he quite liked this trip after all. His conversation with Dorothy will not be recorded, but be it said that he was a more solemn youth when he returned, albeit his eyes shone with an excitement other than that of adventurer.

When he rejoined the rest of the Pioneer's crew they were more than three hundred miles from the surface of the earth and the speed had accelerated to nearly two thousand miles an hour. The upper limits of the atmosphere had long since been passed. No one spoke--all eyes were glued to the screen of the periscope. The only sounds were the slight hissing of the oxygen apparatus and the ever increasing whine of the revolving sphere. The needle of the speed indicator moved steadily to the right. Within ten more minutes it pointed to the figure 8--eight thousand miles an hour was their speed. And, less than an hour out, they had traveled 3,500 miles of their journey. The earth beneath them now showed as a true globe, a tremendous sphere showing the vast expanses of continents and

oceans in splendid relief. When one and a half hours had passed, the speed of the Pioneer had increased to the incredible rate of eighty thousand miles an hour--more than twenty-two miles a second! Their journey was half over and the change in the whine of the sphere told the watchers that the professor had started the deceleration of velocity. The interior of the craft was uncomfortably warm, though the refrigeration apparatus was working to full capacity.

At this point the professor requested that Roy make a report to the Secretary and to their families. Walter followed his father in to the saloon, where the videophone was installed. It required but a few seconds to obtain the connection with the Department and when the Secretary's face appeared in the disc they saw he was smiling broadly.

"Well, I certainly am relieved to hear from you," he said. "We have been somewhat anxious, as we are all aware that the Pioneer has never actually traveled at the speeds necessary in this case. How are things going?"

"Fine, Mr. Secretary," was Roy's enthusiastic reply. "Professor Nilsson asked me to report that we are now 28,000 miles from the earth and that all is well."

"Excellent, Mr. Hamilton. And you may report to the professor that he video is spreading the news to the four quarters of the globe. The effect on the population has been electric. Rioting, which had reached serious proportions in some localities, has now entirely ceased. The people are clamoring for news from the Pioneer and I wish you would speak to them through the News Bureau. I will transfer the connection from here."

Almost at once the view in the disc changed, the face of Secretary

Miller giving place to the view of a large room where sat several operators at control boards and where multitudes of microphones were grouped about a receiving videophone instrument. This was the first time Roy has spoken to the entire world and he was considerably embarrassed. Mastering his feelings, he was able to speak a few words:

"People of the world," he began, "I am speaking from the Pioneer, about thirty thousand miles from you. We are speeding towards the enemy at the rate of nearly twelve hundred miles a minute. Professor Nilsson is at the controls and if you could all know him as I have known him for twenty-five or more years, you would have the same confidence in him that I have. Remember, he saved the world once before. I was with him in Munan and have seen him at work on as bad a problem. I know he has the determination to win this time too and wish to assure you that if there is a man in the world who can ward off the impending calamity, he is the man. Keep up your courage as we are keeping up ours. We shall advise you of developments. Thank you."

The operators applauded in that control room thousands of miles away and immediately the scene shifted to again picture the smiling countenance of Secretary Miller.

"Fine, Mr. Hamilton," he said. "You could not have said anything more appropriate. Why, you have even instilled confidence in me. Good work."

"Thank you," answered Roy. "And now I should like to get in touch with my family."

"That's the thing to do," agreed the Secretary. "Don't let your wife worry. Good-bye."

* * *

The next connection established was with Roy's own apartment and they found that Zora and Dorothy had joined Thelda there to keep her company during these trying hours.

"Hello, Roy," spoke Thelda's golden voice as the connection was completed and her loved face appeared on the disc. "Is everything all right with you and Walter?"

"Everything is fine," answered Roy, drawing Walter over so that he could also be viewed by his mother. "So far the trip has been a great experience, more particularly for Walter. He is enjoying every minute of it. And you know there is absolutely no danger in this expedition, since we can not possibly be seen by our foes."

"How long will it be until you reach them?"

"About an hour and a half, according to the professor's statement. The sensations when traveling at our terrific pace are very novel and almost breath-taking. The effect of gravity has decreased so that we are moving about the ship like feathers in a breeze."

"It must be very interesting. But when you near the enemy fleet, be sure and keep close watch over our Walter, won't you?"

"You know I will, dear. And you folks take good care of yourselves while we are gone, too."

Walter then spoke to his mother and to Dorothy, after which the two returned to the control room and reported to the professor. There were no further calls and finally they sighted the enemy fleet far ahead. The Pioneer was slowed down and the professor made a wide detour to allow the mass of rapidly traveling enemy machines to pass on their earthward journey. They passed so quickly that none of

the voyagers had a chance to get a good look at then and it was not until they had completely circled about and headed earthward in the rear of the fleet that they were able to examine the attacking craft closely.

The speed of the Pioneer was reduced to but slightly more than the of the huge spherical ships and they approached the rearmost of these very slowly. Each globe reflected lights of ever shifting hue and the similarity to immense soap bubbles became more apparent. The motion was absolutely steady and, for all its rapidity, seemed almost deliberate in comparison with the speed at which they had been traveling. No sign of life was visible at the distance of something less than a mile but, as they drew closer, the observers were able to make out a flat, railed-off sort of platform atop each of the globes. Aside from these the surfaces were absolutely smooth, showing no demarcations which would indicate that they were built up from separate sections. They appeared to be cast solid from some iridescent, highly polished material of unknown nature.

When they were within five hundred feet of one of the huge spheres which lagged somewhat behind the rest of the fleet, the professor carefully adjusted the speed of the Pioneer so that they seemed to be hovering directly over the observation platform below. All members of the party now clustered about the glass covered porthole in the floor of the control room, examining the curious craft closely. While they watched, a black spot appeared in the center of the platform. This immediately resolved itself into a circular opening and from it emerged a strange looking creature. At first they took it for some monster of inhuman mold, but it was soon apparent that this was a man, or a living being greatly resembling one, clad in a heavy suit of armor like a deep sea diver's equipment, even to the huge helmet surmounting the ensemble and the knapsack to furnish oxygen to the helmet.

Upon observing this, the professor grunted an exclamation.

"Roy," he said, "take the controls, will you? I have an idea."

"Sure thing, Nils," agreed Roy, nothing loath. He took the seat just quitted by the professor.

Without further explanation, the professor disappeared into the rear compartment of the vessel and the group looked at one another inquiringly.

"Whatever he has up his sleeve," remarked Roy, "you can be sure it is going to be good. I have seen him work before, you know."

Walter's excitement was contagious. Fred and George Bacon could scarcely contain themselves either.

* * *

Soon the professor returned and the group let out a chorus of astonished exclamations when they saw him. He was accoutered almost exactly like the creature on the platform beneath them, excepting that he had not yet screwed the helmet to the top ring of his air-tight suit.

"Roy," he said to the amazed pilot, "I am going to board that machine and see what I can learn."

"But Nils," objected Roy, "you will be killed and then what shall we do? Don't risk your life. It is the most important life in our world right now. Let me go."

"Nonsense," said the professor, somewhat testily, "I can take care of myself. And besides, I have this."

He displayed a small pistol-like contrivance which Roy at once recognized as one of the little disintegration-ray projectors which had proved so effective at Munan.

"Well, that makes some difference," Roy admitted, grudgingly, "but you must be very careful. Remember, the safety of the world is in your hands. Why, I am not even sure that I could pilot the Pioneer safely back to earth if anything happened to you."

"Oh yes you could, my boy. And now, will you please maneuver the ship to a point about twenty-five feet above that deck?"

As Roy complied, the professor gave his final instructions and soon revealed that the Pioneer was equipped with a number of features of which Roy had not previously known.

A light line was dropped to the craft beneath them and a hook at the end gripped the railing behind the sole occupant of the platform. After adjusting his helmet, the professor entered an air lock and the watchers again returned to the porthole. They did not know what to expect next.

For a minute or more they watched the movements of the figure beneath them in anxiety, momentarily expecting him to wheel about and discover the hook and line which to him would appear to extend from the nothingness of space above his head. But the man, for he was undoubtedly that, was busy taking observations with a sextant and suspected nothing.

Suddenly a thin pencil of purplish light shot out from the direction of the air lock and this struck the observer squarely between the shoulders. The travelers on the Pioneer, excepting Roy who knew what to expect, gasped in surprise when they saw the figure in the air-tight uniform wilt and crumple before their eyes. In less time than it

takes to tell, the figure was entirely gone--disappeared into thin air, or rather into the vacuum of space, leaving nothing on the platform excepting the metal helmet, the sextant, and the heavy metal shoe soles. Bones, flesh, clothing--all but the metal parts--had been entirely disintegrated by the wonderful weapon aimed by the professor.

In a moment they saw a rope ladder slowly unfurl and leisurely descend to the deck of the great sphere. Fortunate it was for them that the enemy machine was of such huge size, for it had sufficient attraction for smaller objects in the vicinity to give them enough weight to be drawn to its surface. The professor then descended the ladder slowly and carefully, the watchers keeping anxious eyes on the opening into the strange flier in fearful expectation of another figure emerging from its depths.

Soon the professor reached the platform and his first act was to kick the helmet and the metal soles over the edge. These slithered slowly over the smooth spherical surface of the vessel and floated off into space. The professor then picked up the sextant and waved it as a cheerful signal to those above, though he could not see them.

He then peered into the dark circle which opened into the enemy vessel and, after a moment's consideration, descended into its maw.

"Well," said Roy, "let's hope that everything goes well with him. He is, of course, a man of great resource and is armed with a marvelous weapon. The crew of the enemy vessel will undoubtedly be unarmed, since they could not possibly expect an attack from the rear. He should have a good chance, provided there are not too many of them."

Nevertheless the little group around the porthole spent an extremely anxious half hour awaiting his reappearance. Then came a shock.

The Pioneer lurched and careened at a sharp angle. The vessel to which they were anchored had started off in a direction away from its fellows, and at high speed! They were being towed with it!

Not knowing what else to do, Roy threw the controls into neutral and let the Pioneer follow. When they had trialed thus for another twenty minutes and the remainder of the fleet was completely lost to view, the motion gradually decreased until they were floating in space, absolutely stationary. The Pioneer drifted at the end of the light line like a kite.

* * *

"Now what?" said Walter, nervously.

The others laughed. There was not much mirth in those hollow laughs though and, with white faces, they continued to watch the manhole below.

Soon a huge, metal-encased head appeared at the opening and a figure clambered laboriously to the deck. It was not the professor! The watchers groaned as one man. All was lost!

But no! Another figure emerged and this figure, for all the disguise of the uniform it wore, could be recognized as that of the professor. In his hand was the ray pistol, which he kept steadily trained on the broad back of the figure preceding him. A cheer went up from the four on the Pioneer as the professor waved his arm to indicate that all was well. He prodded his captive in the back with the pistol and directed him to the rope ladder. Keeping at his heels, he forced him to climb towards the Pioneer and the two made their way slowly upward until they were out of sight of the porthole. Roy rushed to the stern compartment where there were stored a number of the weapons like that used by the professor, and he armed himself with

one of these also. The four voyagers stood at the inner door of the air lock and Roy trained his weapon on it when it opened to admit the professor and his captive. He kept the prisoner covered while the professor removed his own helmet and then assisted in removing the helmet and air-tight suit from the now unresisting enemy.

The prisoner was led to a chair in the saloon, where they were astonished to hear the professor converse with him in English.

"And now, my man, what is your name?" asked the professor.

"I know not of what advantage the knowledge is to you," haughtily replied the stranger, who was a heavy-set, broad-shouldered, blond giant of a man, "but you may call me Kardos."

"All right, Kardos," snapped the professor, "you understand that you are a prisoner of war. Mr. Hamilton here, will keep close watch over you while I make the necessary arrangements to take your vessel to our earth."

"You're right I will, Nils," spoke Roy. "Just go ahead with whatever you have to do and I will blow this big boy to kingdom come, if he as much as moves a finger."

The professor busied himself in the storage compartments while Roy kept guard over the prisoner. The other three passengers sat gazing, with mixed hate and admiration, at the splendid specimen who sat now with his head bowed in his hands.

With a large coil of wire, a fair sized steel cable, and two ancient telephone instruments in his hands, the professor returned. He refastened his helmet and started for the air lock. With the exception of Roy, who remained with the prisoner, all returned to the porthole where they watched the professor make his way back to the enemy

vessel.

He now made the connection between the two vessels more secure by means of the steel cable. There now extended the two tie lines and the telephone wires from the hull of the Pioneer to the huge sphere beneath them, and the professor disappeared once more into the interior of the enemy machine, carrying the end of the wires and one of the telephone instruments with him. It was probably fifteen minutes before he reappeared and this time his hands were empty. After he clambered up the ladder it was withdrawn and slowly the great, glistening sphere receded from them as the cables and the telephone wires were paid out from above. The professor continued to let out the lines until some two hundred feet separated the two vessels and not until then did he reappear in the saloon.

After divesting himself of his unwieldy costume, he connected the remaining telephone instrument to the ends of the wires he had brought through sealed openings in the door of the air lock. This instrument was a curio, but the professor had a way of collecting and keeping such things, as he always figured that some time he might find use for them, however ancient their origin. The instrument, which comprised microphone and receiver mounted on one curved handle, he thrust unceremoniously into the hand of Kardos, showing him how to hold the mouthpiece and receiver in their proper positions.

"Now Kardos," he ordered, "you will command your pilot to proceed earthward, accelerating gradually to a speed of seventy-five thousand miles an hour, then decelerating when further instructed."

Kardos glowered, but finally started to speak into the mouthpiece in a guttural, foreign tongue. The professor stopped him at about the third word with a sudden jab in the ribs from the ray-pistol, with which he had again armed himself.

"None of that," he rasped. "Speak English. You and your pilot both know it very well. There are going to be no conversations in your own language."

There was nothing for Kardos to do but comply, which he did with poor grace. His orders were obeyed at once, as was evidenced by a gentle tug at the Pioneer and a lifting of its occupants from their seats due to the acceleration.

With both the efficient hand weapons trained on the prisoner, who seemed to be taking his position more stoically now, the professor regaled his passengers with the story of what had transpired on board the enemy ship. They listened in amazement and were jubilant over the signal victory he had won, single-handed.

part 7

VII.

Back in Washington, Secretary Miller paced the floor of his office. About him sat a dozen or more of his men and the videophone had been constantly busy with calls from various other governmental Departments. He hesitated to call the Pioneer as he feared he might interrupt some of the professor's proceedings. But the voyagers were now gone nearly four hours and the world was getting impatient for word from them. The assembled company was almost in turmoil, great men as they were.

The videophone spoke. Professor Nilsson's face appeared in the disc and the company was electrified into close attention. The Secretary answered with relief in his voice:

"What have you to report, Professor?" he asked.

"We have captured one of the enemy ships with all of its crew and will have it in Washington inside of three hours."

"What?" gasped the Secretary. "You have captured one of these huge fliers? How on earth did you do it?"

"Improbable as it may seem," responded the professor, "it was, in actuality, quite a simple matter. After passing the enemy fleet, we found that one of the vessels was somewhat behind the others and we approached this vessel closely. Our craft being invisible, we were able to do this unseen, although there was an enemy observer on a small circular deck on the upper surface of the sphere. To this small deck I dropped a line and a rope ladder from the Pioneer, which was kept in position by Roy Hamilton. It was necessary to do this very

carefully so as not to arouse the observer and I was obliged to make away with him before crawling down the ladder and entering the ship through the air-locked manhole from which he had emerged. This was accomplished by means of an ancient weapon--the obsolete ray-pistol, you know--and this same weapon later enabled me to get control of the entire vessel."

"But," interrupted the Secretary, "how were you able to pass from one vessel to the other when both were in the vacuum of outer space?"

"I was enclosed in an air-tight suit with an oxygen supply system as was the observer on the deck of the enemy ship," the professor replied, "and fortunate it was too, since I was mistaken for the observer when I entered the ship and mingled with the crew. When I did show my true colors and turned the ray-pistol on the commander and his aides, they were so taken by surprise that I had little difficulty in getting the upper hand. Two or three of the crew endeavored to rush me, but, being entirely unsuspicious of any possible attack from the rear, they were unarmed, and after I had caused several of their number to disintegrate and vanish, the rest were so terrified by the ray-pistol as to be entirely tractable.

"It occurred to me at once that the commander-in-chief of the fleet would undoubtedly expect periodic reports from each of his vessels by radio, so, after locking all of the crew securely in their metal-walled quarters, with the exception of the commander and one of his pilots, I forced the commander to report that his ship was out of control and would be unable to keep up with the rest of the fleet. Fortunately the orders sent back from the flag-ship were to the effect that he should do the best he could and follow slowly, if necessary remaining in position until the fleet could return from its mission and salvage the disabled vessel.

"I then ordered them to slacken speed and the main body of the fleet was soon lost to view. The pilot I left on his own ship, after disabling the radio so that no further communication could be had with the flag-ship and, at the point of the ray-pistol, I forced the commander to return to the Pioneer with me. Leaving him under the guard of Roy Hamilton, I revisited the enemy ship and made steel cable and telephone connections between it and the Pioneer. I strapped the telephone receiver to the head of the pilot, who was so utterly cowed by the ray-pistol that he obeyed my every order, and returned to my own vessel. Then I forced the commander, Kardos by name, to communicate with his own pilot over my telephone connection and order him to proceed to our earth over a different route than that being followed by the rest of his fleet.

"This is now being done and the enemy vessel is towing us earthward. In order that the pilot of the enemy ship should have no opportunity of becoming unmanageable, I have sent your two men to the vessel and have equipped them with ray-pistols which they are keeping trained on him constantly. It is another fortunate circumstance that these spherical vessels of the enemy do not require the attention of the crew at the propelling machinery and can be operated by a single man from a central control room. We have had a little trouble with Kardos, but he has now resigned himself to his capture and is as meek as the rest of the crew.

"We shall arrive at Washington at about two P.M. and I intend to take immediate steps to investigate the construction and armament of the great sphere in detail. With this machine in our possession, we shall be in a much better position and should be able to determine some means of combatting the others when they arrive."

"Wonderful! Professor, wonderful!" Secretary Miller said with enthusiasm. "We shall inform the world at once. And now you had better get in communication with your families. No doubt they are as

worried as we have been."

"We shall do that at once. Thank you, Mr. Secretary."

* * *

When the professor's face vanished from the disc, the Secretary turned to the astonished assembage.

"Why, this man is a marvel of courage and resourcefulness," he exclaimed. "He was never adequately honored for his wonderful work in saving our world from the Munanese, but I swear before you all that he shall be given his full measure of recognition this time. I have a feeling he is going to succeed again, too."

Murmurs of approval came from the prominent men present. The reaction from their recent gloom was slow in coming. It all seemed too impossible to be true. But they had seen the professor's face as he told them of his victory. They could not doubt his sincerity and, as quickly as the truth of his statements became impressed on their stunned minds, a great hubbub of triumphant exultation swept the room.

"Quiet, gentlemen, quiet," spoke the Secretary. "We have work to do. The peoples of the world must be appraised at once of the eventful happenings. It will keep them from further disorder and rioting, at least until the Pioneer returns with its war prize."

Immediate connection was made with the General News Bureau and the Secretary spoke to the world audience. He told in glowing terms of what had been done in the skies, fifty thousand miles away. So great was his own confidence now that, when he had warmed to his subject, he was able to communicate much of it to his billions of listeners. Where hope and despair had previously alternated,

carrying the populace to hitherto unknown heights and depths, now only hope remained. Possibly he made them too optimistic, but the general result was excellent.

Thelda still entertained Zora and Dorothy in her apartments and the three women had also spent a very anxious three hours. The two mothers were calm through these trying hours, but Dorothy was inconsolable. After two hours had passed with no word from father or sweetheart she had buried herself in a divan and wept unrestrainedly. Time and again she begged permission to use the videophone and to call "Special 85-A" but the older women restrained her, fearing, as had the Secretary, that some serious plans of the adventurers might be interfered with. Just as they were about to give in to Dorothy's tearful pleading, having become more and more worried themselves as time passed, their own call was repeated and all three rushed to the videophone.

Dorothy was the first to reach it and she laughed and cried in turn when the cheerful visage of her fathr appeared in the disc.

All three listened in wonder to his tale, as had the listeners in Washington a short time previously. Roy and Walter were called to the instrument of the Pioneer and the conversation took on the gladness of a reunion.

Dorothy's conversation with Walter was frankly that of a maid deeply in love. Neither seemed to care whether their elders overheard or not. Walter rather shamefacedly admitted that he had, so far, taken absolutely no hand in the "big doings," as he called them. But Dorothy would have none of his self-belittlement and assured him that he would yet be the hero of the whole affair. How near she was to the truth none of them realized at the time. When the connection was broken, the three women joyfully set out for one of the public squares. They felt the need of rubbing elbows with the people of the

crowds which packed all such places, watching the public video for reports.

They found the southbound moving ways unusually jammed for the time of day and a holiday spirit prevailed. Everyone wore a smile and the names of Roy Hamilton and Professor Nilsson were on the lips of all. They left the moving platform at 125th crossing and mingled with the crowd in Square T-17 on the sixth level. Here was a huge videophone screen, fully thirty feet in diameter, and the voice of a news announcer filled the entire area with natural distinctness, but amplified to such an extent that it completely overcame the crowd noises. Still it was not painful to the ear, but seemed rather to come from a point immediately adjacent to the individual listener in ordinary speaking volume. The scene in the disc was again that through the Castle Mountain reflector and the three women thrilled with secret pride as they watched the drifting, weaving convolutions of the approaching fleet and realized that their men had recently left the vicinity of the menacing mass with a victory to their credit.

After a while the scene shifted to Washington, where the watchers were afforded views of the buildings and laboratories of the Research Department where preparations were being made for the arrival of the Pioneer and its prize.

Occasionally the view of a threatening radiogram from the enemy was flashed on the screen. Mador still persisted in his efforts to terrorize the world in advance. But these messages, all signed by him, were greeted with hoots and jeers. The world simply refused to be further terrified since receiving the news from the Pioneer.

Impatiently as the crowd awaited the arrival of the adventurers in Washington, the time passed all too quickly for those most immediately concerned--Thelda, Zora, and Dorothy. The reactions of the crowd interested them more than the news. Their pride knew no

bounds, though they remained unrecognized by those about them. This was a new experience for Dorothy and thrilled her to the depths of her girlish being. She had never been this far downtown in a public place and, to her, it symbolized her parents' recognition of her grown-upness. No longer was she the school girl, to be pampered and sheltered, but a grown woman with a sweetheart, who was out there in the skies helping to make history.

Eventually the great moment arrived and the crowds in the square grew hysterical with excitement. The great sphere, behind which the tiny Pioneer was known to be trailing, had been sighted! The view in the screen was now that of an immense landing stage and soon the watchers could make out the approaching enemy vessel. The Pioneer was of course invisible but a brilliantly scintillating soap bubble seemed to be drifting in toward the stage. Larger and larger it loomed until its hugeness in proportion to the buildings and human figures in the scene became evident.

A resounding cheer rose from the crowd when the sphere settled to a landing and was blocked into position by scurrying figures of men who seemed like bees around a hive in comparison with its great bulk. Then, when a close-up was shown of the professor and his companions being greeted by the Secretary and his party, the crowds went absolutely insane with joy.

The three women had had enough. Elbowing their way through the crowd, they made for the northbound moving way and were soon following the news in the comfort of the Hamilton apartments. The excitement had been almost too much for them and, womanlike, they indulged in a good cry together. But they were happier than they had been in many hours.

part 8

VIII.

In Washington there commenced a period of activity, the like of which had not been seen in the world capital for many years. Dense crowds packed the vicinity of the stage where the vessel from Venus had landed. It was necessary to rope off a large area to keep the crowds from interfering with the removal of the crew of the captured ship. These were conveyed by fast aeros to Barranquilla, the sole remaining prison city in the western hemisphere. Kardos, the commander of the vessel, was held in Washington for further questioning, but it was soon found that no information of value could be obtained from him. In fact his replies to the questions of his captors were so misleading as to be of less than no value. The professor therefore decided that personal examination of the mechanism of the space flier was the only means of learning its workings and of discovering what weapons the attackers would employ in warring upon the world.

With a corps of Research Department men and with Roy and Walter as his lieutenants, he set about the difficult task. When the last of the crew had been removed, they entered the vessel and started a minute examination of its machinery and of the materials of its construction.

Measurements showed the sphere to be 481.6 feet in diameter and the thickness of its shell 13.2 feet. It appeared to have been built in one piece from some tough, strong material, a section of which was cut out for analysis. The inner surface of the shell was lined throughout with an unknown metal of the thickness of three-tenths of an inch. The purpose of this lining was not immediately evident, since it was not of sufficient thickness to add anything of strength to

the tremendously thick outer shell. At the lowermost portion of the vessel was the control room. This contained a complex arrangement of electrical controls and seemed to be the center of all activities necessary for the operation of the ship and of its offensive weapons, whatever they might be. The crew's quarters occupied the level directly above the control room, the rest of the huge sphere being crammed with floor after floor of electrical machinery and mechanisms of a nature entirely unknown to the scientists now on board.

Though opaque and apparently of the same material as the remainder of the sphere when viewed from outside, the entire outer wall of the control room was transparent from the inside, giving an unobstructed view to the pilot.

Careful tracing of the wiring disclosed which of the mechanisms provided the motive power. These were not examined at once, since the important thing was to determine the means of offensive warfare to be encountered. It was soon apparent that the driving mechanism was but a small part of the machinery of the vessel and this seemed to incorporate some simple means of nullifying gravity in any direction with elaborate control of this effect to provide for steering. The rest of the vessel was a huge power plant for generating electricity at tremendous voltage, but the method of application of this power could not be discovered.

The means of starting and bringing this immense power plant to speed was soon determined but, when the scientists had accomplished this much and found that the voltage generated was of the order of three million, they could not discover how this great potential was handled or applied. True, they traced the output connections but this did not prove of much help, for one terminal connected with the metallic lining of the hull, while the other terminal connected with one great metal cylinder about fifteen feet in

diameter. The metal cylinder was solid and was set in the hull through an insulating bushing with its axis mounted radially with reference to the vessel itself. Further examination revealed that this metal cylinder could be moved in or out by means of a motor-driven rack and pinion mechanism. When moved forward to its greatest extent it was found to project some seventy feet outside the hull, exactly at the equator of the immense ball. But when the power was full on there was absolutely no indication of electrical discharge from the electrode, though the voltage differential between it and the lining of the vessel was found to agree with that shown on the meters in the control room. Tremendous power there was here, but neither the professor nor any of the other scientists were able to learn how it could be applied as a means of destroying life or property.

The remainder of the day was spent in futile research along these lines and, late in the evening, the professor left the Research Department experts on board the vessel and repaired to one of the laboratories with the samples of various materials of which the ship was constructed. He was considerably discouraged, and asked Roy and Walter to remain with him during the experiments which he was about to conduct. This they were only too glad to do and Walter eagerly set about to help. As an assistant to the professor he was almost perfect, the carefulness and accuracy of his work having been always noted and approved by that great scientist.

Far into the night they worked and many of the materials had been completely analyzed and classified. The most surprising thing to the professor was the composition of the hull. This proved to be built up of thin fibrous sheets, similar to ordinary pulp paper, impregnated with a phenol-resin compound and united in a solid mass under heat and tremendous pressure. This was nothing more nor less than an insulating material used extensively on earth and designated by various trade names such as Bakelite and Micarta.

* * *

The following morning, with the world clamoring for news, the professor had nothing of interest to report beyond the general details of construction of the enemy vessel. His efforts at seeming cheerful were successful, however, and there was as yet no renewal of the widespread discouragement and alarm that had followed the first news of the approaching enemy.

His next experiments were with available destructive agencies and their effect on the huge bulk that reposed on the landing stage. The world was sadly lacking in such resources, all arms and ammunition of any size having been scrapped and gone these many centuries. However, there were the energy beams by means of which all power was transmitted and these were the first to be tried. Centuries ago, when the transmission of power through the ether had been perfected, it was possible to destroy battleships of the ocean and air by merely directing beams of great energy into their machinery which thereby became parlyzed, making the engines of war useless. This had been one of the primary reasons for abolishing all war from the face of the earth.

It was quite reasonable to suppose that the same procedure might be successful against these warships from another world, but the professor had his doubts. He knew that the Munanese were fully aware of this ancient method of disabling combatants and, as Mador had been one of their best known scientists, he would undoubtedly be prepared for the use of energy beams by the otherwise unprepared peoples of the earth. He was not wrong in this assumption, as the first experiment showed.

From the Thomas Energy Company was obtained the use of the most powerful beam transmitter in Washington and, with all the machinery of the enemy vessel in full operation, the energy of this

beam was directed into the ship's vitals. There was no effect whatever, the high speed machinery of the vessel continuing to hum musically--the many electrical instruments in the control room being unaffected in their indications.

"Just as I feared," the professor muttered. "The metallic lining evidently forms a protective shield, though our ancestors were never able to find a material which would successfully defy these same energy beams. And now, gentlemen, we must get busy in earnest. I must make a hurried trip to New York to bring certain materials from my own laboratory. I shall be gone no longer than two or three hours. In the meantime Roy and Walter will remain with the rest of you and assist in a thorough search through the enemy ship. Possibly you may find printed instructions somewhere among the effects of the officers, and even if they should be in the language of the Venerians, we should be able to have them translated in time to be of some value. We have enough experts here in Washington."

Before he left, he called for Walter to give him instructions as to his part in the work, but Walter was nowhere to be found. Abandoning the search after a few minutes, the professor started for his own laboratory without giving the matter much serious thought.

part 9

IX.

That day was a very trying and discouraging one. When the professor returned from New York with a load of his own paraphernalia, he found that nothing of value had been found on board the enemy ship. Not only that, but Walter was still missing. Roy and he were much alarmed but it was necessary to keep on with the work. They could not let up for a minute now--the time was getting too short. By noon of the morrow the enemy would be upon them and nothing had yet been accomplished.

Roy and the professor spent all that day and night in the laboratory, conducting experiments with the various materials from the space flier, but still had nothing to report on the following morning. When day broke and the News Bureau could tell of no progress, the public again became clamorous. Castle Mountain reported the fleet only six thousand miles away and still maintaining the speed of one thousand miles an hour. They would arrive before noon! And the world was still helpless!

More of the threatening radiograms began pouring in from Mador. Public excitement again increased to a fever pitch and , as the morning wore on, the great cities of the world began to take on the appearance of ant hills. With fear overcoming all reasoning power, the people lost their heads and started a disordered flight to the open country. This was the worst possible course they could pursue, though it was quite certain that the larger cities would be the first points attacked. However, the open country presented no opportunities for shelter or for obtaining food. All population being now concentrated in the cities, and all foodstuffs being synthetically produced therein, the countryside was deserted and wild--the farms

of the ancients gone and now overrun with wilderness and wild beasts. Still the exodus grew in importance and extent, spreading to all the cities of the world.

Secretary Miller had been called to account by the President and soon hunted out the professor to learn what was being done. He found the professor in a state of deep gloom. He had been entirely unsuccessful and was compelled to report that he could hold out no hope. Further than this, Walter was still missing and the professor's heart was also heavy on this account. Thelda had learned of the fact and had just communicated with Roy, displaying great fear and nervousness. In was indeed a trying situation.

In a few hours videophone reports began to come in from all over North America. The enemy fleet had spread out in groups of three spheres each and these groups had appeared over many of the principle cities. They drifted at an altitude of about five thousand feet and showered the various localities with radiograms. Their own radios were unable to rectify the distorted waves of the videophone beams--they could communicate only in the now little used code radio. Fortunate this was, for they were thus unaware of the capture of one of their ships and had no knowledge of what was transpiring on earth.

But the campaign of terror was effective. The people were absolutely unmanageable and the casualty lists lengthened rapidly. Where Professor Nilsson had, but a few hours before, been a world hero, now curses and invectives were heaped on him by the unreasoning mobs. Roy was unswerving in his loyalty and the Secretary and the entire department continued to back him. Feverishly they worked on board the enemy ship and in the laboratories.

At one P.M. came news of the first hostile attack. Cincinnati had been completely wiped out of existence, inhabitants and all. The few

who had escaped to the open country would surely starve or be destroyed by wild beasts. Reports of the catastrophe were cut off short before any details could be given, for the local videos went the way of everything else in the city.

The next radiogram from Mador warned that Youngstown would next be destroyed. The inhabitants of that city fought and struggled to reach the country and many fatalities resulted before the enemy even arrived.

Thelda had been prostrated by the continued absence of news from Walter and it was with dragging feet that Roy followed the professor to the Pioneer. It was decided that they should make a rapid trip to Youngstown to watch the enemy at work and learn how the destruction was accomplished. A dozen scientists from the Research Department embarked with them, as did Secretary Miller.

* * *

Climbing rapidly to an altitude of ten thousand feet, the Pioneer headed for Youngstown with the driving sphere whining in ever-rising crescendo. So rapid was the acceleration that they had not been in the air more than ten minutes when the interior of the vessel became so hot that they could scarcely bear it. Fifteen minutes, and with the persperation pouring from his face and body, the professor reversed the sphere. Ten more minutes and they were stationary, far above the doomed city. This was the fastest trip the Pioneer had ever made in the lower atmosphere and its refrigeration system had been taxed to the utmost. So had the stamina of its passengers.

In silence the professor uncovered the floor ports of the Pioneer and in silence the fifteen passengers knelt about these glass covered openings. Far below them spread the industrial city, with the forms of the spherical ships about half way between. They had huddles

together like billiard balls set up in equilateral triangle formation. The hulls seemed to contact momentarily. As they did, from each there slowly projected a dark object, cylindrical in shape. These objects approached each other in the open space enclosed by the three vessels. They contacted and a blinding blue flame spouted at the point of contact. At this, the three ships rapidly receded from one another, but the arc which had formed between the three electrodes continued, spreading to a huge, sputtering, roaring flame as the distance increased.

The roar of the tremendous arc increased to such an intensity that it became audible even through the double hull of the Pioneer. The passengers watched in awed silence as the three enemy ships, still maintaining their triangular formation, receded to three points equally spaced about a circle enclosing the city. Still the terrific arc was maintained between the electrodes. When the outermost limits of the city had been reached, the three vessels started to turn slowly on their vertical axes. This movement continued until the electrodes became tangent to the circle represented by the three, all pointing in the same direction of rotation. The great blue flaming arc now became a whirling vortex, ever curving downward to the doomed city as the spheres tilted slowly, pointing their now white-hot electrodes toward the earth at an angle of about forty-five degrees. The ground below was completely obscured from view, but the din of a roaring cyclone and the rending of solid masonry and steel girders came plainly to the ears of the spectators. It was a white-faced group that stared wonderingly at each other when the arc abruptly ceased and the desolation of a city completely wiped out of existence was presented below. The three enemy vessels rejoined and made off towards the north in a leisurely manner.

The professor jumped to his feet. "The atomic storm!" he shouted. "Why did I not think of it before? It was produced on a miniature scale in the laboratory as far back as the twentieth century, and in an

electric arc, too. But what are we going to do to fight it?"

The scientists were still too much shaken by what they had witnessed to even think clearly, much less to discuss the problem. Roy's worries over Walter's disappearance kept him mute and downcast, also. So it was a gloomy party that disembarked from the Pioneer at the Research building in Washington forty minutes later. They repaired to the Secretary's office at once.

part 10

X.

Zora and Dorothy had remained with Thelda, and were doing their best to comfort her, though Dorothy was in almost as hysterical a condition as the mother. They had just received news of the loss of the city of Youngstown when the videophone again spoke. In fear and trembling Dorothy answered, but her fear changed to joy when Walter's face appeared in the disc. Thelda swooned when Dorothy shouted out the good news.

"Oh, Walter," said Dorothy, with a sob in her voice, "we have been so worried about you. Why didn't you let us know where you were?"

"I'm awfully sorry, darling," he replied, "but I am all right. I am in the Museum of Ancient History here in New York and have been so absorbed in what I was doing that I did not even note the passing of time. And I must rush back to Washington. I think I have found the way to repulse the enemy."

"Oh, Walter dear. That is marvelous. Do hurry. I will advise Washington right away that you are coming."

"All right, darling. I'll rush to the aero terminal while you do that. Tell mother not to worry, won't you?"

"Yes dear. And I'm sure she'll recover now right away. And sweetheart," she continued, shyly, "I'm awfully proud of you. I just knew you would do something wonderful."

Walter laughed boyishly and with a cheerful farewell was gone. Dorothy spread the glad news through the apartment and the tonic

effect on Thelda was immediate and complete. She laughed aloud in her relief and joy, as Dorothy returned to the video to spread the news still further.

Secretary Miller sat at his desk in conference with Roy and the professor when the call came from Dorothy. They had just about given up hope of coping with this terrible enemy. Reports had come in of the destruction of two other cities, Houston and San Diego. The whole world was in chaos. All had given up hope. But the videophone system had been kept intact, the operators remaining heroically at their posts. The beam lane aero lines still maintained service, though few cared to travel. Otherwise all business and industry was at a standstill. The cities were gradually becoming deserted, great numbers of the population streaming out into the wilderness with what few belongings they could carry and with no attempt to hide their fear and utter demoralization. Reversion to savage instincts had already begun to crop out in certain sections.

Roy and the professor shouted with joy when Dorothy's sweet face appeared on the disc, and the room echoed with rejoicings when her news of Walter was repeated. The group of scientists babbled excitedly when they learned that Walter was on his way to Washington and claimed to have solved the problem with which the world had been so suddenly confronted.

"But can it be possible that this mere boy is right in his statements?" queried the Secretary.

"It would not surprise me at all," the professor replied. "He is a great student and has a marvelous memory. He has worked with me for some time, you know, and, although still very young, he has already made several important scientific discoveries. What he has done, no doubt, is to pore over some ancient volumes in the museum to see what he could learn of the old arts of warfare, and has stumbled on to

something."

An hour and a half remained before Walter would arrive and the group in the Secretary's office waited anxiously. No further news there was of further destructions wrought by the enemy, but a constant stream of Mador's haughty radiograms poured in. All of these referred to the final vengeance of Munan. All pointed to a long drawn out war in which the enemy intended to take their own sweet time and to make the destruction of the earth's civilization as leisurely and harrowing as possible.

Finally Walter burst into the room and, unceremoniously, rushed to the Secretary's desk. The professor rose to his feet and clasped the hand of the flushed and panting youth. Roy hugged him to his broad breast in sheer delight at knowing he was safe.

* * *

"Well," asked the professor, "what have you found, my boy?"

"The secret--and no mistake," answered Walter, proudly. "Your discovery that the hull of the enemy ship is made from phenol-resin impregnated fibre set my mind to work. I remembered dimly having read something regarding certain old experiments with the material Micarta, so I rushed to New York and started looking for the information. It was necessary for me to read completely through sixteen musty tomes, but I found it. Here it is."

Dramatically he laid a sheet of white paper on the desk.

With trembling fingers the professor picked this up and read aloud the copy made in Walter's careful hand:

"During recent years it was found in the research laboratories of the large electrical manufacturers that micarta and asbestos could be

made to explode violently when subjected to high frequency current. The time required varied from one-half a second to about thirty seconds. These experiments were discontinued, since no particular value was attached to the discovery, it being one for which no practical use could be found."

The professor looked up solemnly.

"He has found it all right," he stated. "This boy has done what none of us have been able to do and the world surely will owe him a debt of gratitude. But we must hasten. There is still much to be done. We must experiment this very night on the three enemy craft now hovering so menacingly over Washington. Have I your permission to proceed, Mr. Secretary?"

"Indeed you have," replied that official wearily, but with new hope evident in his voice. "Go the limit."

The professor again became the human dynamo,. He issued his orders with celerity and decision. The scientists started on their several missions eagerly. None questioned the superior knowledge and ability of this man, who had once before saved the world from as great a disaster as now threatened.

The Pioneer again was the scene of activity. The professor with Roy, Walter, and Secretary Miller, reached the staunch craft just as one of the aeros of the Thomas Energy Company landed on the stage of the Research building. From this aero two of the Secretary's men emerged and with them were half a dozen of the Thomas men carrying between them two small but complicated electical mechanisms. These were installed into the Pioneer and placed in accordance with the professor's instructions. While supervising the work he talked incessantly, as was his habit when working out the details of some problem.

"These, gentlemen," he commenced, "you will recognize as standard beam transmitters. We shall place one in the stern compartment and one in the control room. With these we shall be able to project two beams in any desired direction, each beam capable of ionizing the air for a distance of at least ten miles. Since we have no collector on the enemy craft tuned to the proper frequency we shall have to set up our own current in the material of their shells. We do not even know the exact frequency required, but that will be easy to ascertain.

"We are soon to receive a generator capable of producing supersonic frequencies as high as half a billion cycles per second, and we shall simply run it through its range of frequncies until we find the proper one. With our two beams of ionized air we have two electrical conductors over which we can transmit the high frequency current and with both beams in contact with one of the spheres we shall have a complete circuit. When the proper frequency is determined we shall be able to subject the micarta-like shells to a continuous current of this frequency. The very dielectric losses of the material will prove its undoing. Molecular friction. You see, the molecules become charged first positively, then negatively, with the reversals of current and shift their positions in the mass correspondingly. When the frequencies of the reversals becomes so great as to set up a terrific internal heat due to the friction between the rapidly shifting molecules, the resulting expansion is so sudden that disruption is bound to occur. I hope that a tremendously violent explosion will result."

He was like a boy in his enthusiasm and when the high frequency generator arrived he personally supervised its installation. By nine that evening all was in readiness and the Pioneer took off. The moon was very brilliant and they could plainly see the three menacing blobes hovering high in the sky. One of these they passed so closely that they were able to hear the throb of its machinery. But they

continued straight up until about ten thousand feet above the nearest of the invaders. Here the professor stabilized the Pioneer and left it hovering while he proceeded to the business at hand.

* * *

The enemy ship, though nearly two miles beneath them, still appeared as a great ball, reflecting the moonlight in myriad hues and tints. It was with keen satisfaction that the professor observed Walter's excitement as he was given charge of one of the beam transmitters and was instructed in its use. This one was tested first and the faint purple haze marking its pencil-like beam was observed to move over the landscape below at the will of the operator. The second one likewise tested out satisfactorily and Roy was stationed at this.

At the professor's direction, both rays were trained on the globular ship below and two small purple spots felt their way over the upper surface until they reached opposite sides of the ball somewhere near the equator. There they rested, all unknown to the beings within.

Not until then did the professor start the high frequency generator and impose its current on the two conducting beams, but when this was accomplished to his satisfaction all on board held their breath in eager anticipation. What if the experiment were to prove a failure after all?

The hum of the generator increased gradually in pitch, gliding smoothly up the scale of musical frequencies until it became a thin, fading scream. Then it disappeared entirely and the silence was so intense that each of the watchers became aware of the throbbing of his own pulse. The frequency indicator mounted to greater values and still there was no result below. As time passed and nothing happened, one of the men groaned. At that moment Walter

exclaimed excitedly:

"Professor! The purple spots are changing color. Hold the frequency at this point."

The professor adjusted the control to maintain constant frequency and he marked the spot on the indicator so as to be able to return to it again. All watched breathlessly as the two tiny purple spots changed to a bright orange, spreading rapidly in size. In less than ten seconds the great ball was a beautiful pyrotechnic display. Silently, majestically, it spread into a magnificent sunburst, lighting the countryside for miles around and showering it with numberless incandescent fragments. Seven seconds it took for the sound to reach them--then the Pioneer was rocked by the force of such a detonation as had never been heard by any of the passengers. The sound was as of a terrific thunderclap, close by, and the commotion in the atmosphere threatened to upset the vessel. Then all was again silent.

Cheers shook the Pioneer anew and its occupants behaved like so many school children, capering and slapping each other on the back in their glee.

But the professor proceeded immediately to the control room and set out after the other two spheres. One by one these were done away with in the manner of the first and it was a triumphant party that returned to the landing stage of the Research building. They had been away but thirty minutes.

part 11

XI.

That night there was great rejoicing in Washington and in every city on the face of the earth. The General News Bureau kept the videophone going all night and, as news of the destruction of the three ships and of the rapid formation of defense plans was spread to the wilderness by fast aeros, the panic-stricken refugees gradually took heart and started a straggling return to their own homes. Shamefacedly they entered the cities, tired, dirty and bedraggled. Stealthily they left the public ways and hid themselves in their own quarters.

The professor organized the forces of the Department of Research. All night long he and his helpers labored to have complete plans for the defense of the world put into effect before daybreak. The Thomas Energy people collaborated to the utmost and by four A.M. reports began to come in from all over the world announcing the completion of the tandem beam transmitters. It was very fortunate that standard apparatus could be utilized; that every single city had the resources and spare equipment of the Thomas Energy Company to draw from. When the first pink of dawn colored the sky every last city had reported the completion of at least one of the defensive weapons and most of the largest cities had prepared as many as ten. An improvement over the apparatus so hastily put together on the Pioneer had been devised by the professor and this, by his instruction, was incorporated in all of those constructed on land and in the aeros that were being fitted out. The two separate beam transmitters were now coupled together so as to produce parallel rays four hundred and seventy-five feet apart, to exactly embrace one of the enemy ships and to permit of one-man directing. A telescopic

sight was installed central to the two beams and this was provided with cross-hairs to be centered on the spheres when in the field of vision. All of the high-frequency generators were set to produce exactly the proper frequency as determined in the initial experiment.

No sooner had the sun showed its glowing rim above the horizon than a radiogram was received from the enemy. It was evident from this that the rest of the fleet had no knowledge of the loss of the three vessels over Washington, also that the leader and instigator of the expedition was still in command. The message read:

"This is the great day. Our next blow is to be directed at your City of New York. Remember Munan. Mador."

In rapid succession came other messages advising the cities of Buffalo, Kansas City, New Orleans, and Montreal to prepare for their doom. No foreign cities were mentioned, so it was presumed that the enemy intended to destroy North America first before proceeding elsewhere.

"Now that we are prepared," said the professor in a weary voice, as he arose stiff-kneed from the table where he had worked for eight long hours, "we had better set out in the Pioneer to sort of supervise the defense and give aid wherever it might be required. First we shall go to New York and see what can be done there."

"That is a good idea, Professor," said Secretary Miller. "We will keep in touch with you constantly by video and I will have any instructions carried out that you might deem necessary."

Roy, Walter, and the picked force of the Research men left at once in the professor's ship with him and a very speedy trip was made to New York. They traveled at a high altitude--about twenty thousand feet--and in less than thirty minutes were over Manhattan Island. Far

beneath them was a group of three of the enemy ships and they were approaching close formation preparatory to starting the atomic storm. Since the conducting beams could not be seen in daylight, the occupants of the Pioneer did not know whether or not any were being trained on the spheres from the city below. To make certain, the professor started his own beam projectors and high frequency generator. With the Pioneer left hovering he directed the twin beams on one of the cluster of three globes, just as the sputtering of the starting arc became visible. As the frequency indicator reached the mark made on its scale the preceeding night, two of the spheres exploded simultaneously. The city defenders had been successful also!

* * *

Those of you who witnessed the destruction of any of these monster ships from Venus will never forget the terrific force with which they were blown to atoms by the high frequency currents set up from above or below. The violence of these explosions was so great that seldom was even the tiniest fragment of vessel or occupant found. This was another piece of good luck, since great harm must have resulted had any portions of considerable size remained to be hurled to the earth.

In this case the explosion of the first two actually blasted the third into the ocean. It landed just outside Sandy Hook with such a splash that the resulting waves swamped a number of seashore resorts along the coast. Manhattan was momentarily obscured from view of the Pioneer by swirling clouds of minute fragments which were all that remained of the destroyed vessels. Dwellers in the city afterward reported that the shock below was so great, though the explosion occurred a mile overhead, that pictures were thrown from the walls and glassware broken on the tables.

"That third one must not escape!" shouted the professor, as he dashed into the control room and headed in the direction in which it had been thrown.

In a few minutes he had reached the great globe, now bobbing about on the surface of the ocean, a few miles off shore near Sea Bright. A giant rubber ball it seemed to be, bounced about by the hands of unseen Brobdingnagian bathers. But, for all its destructive nature, it was a beautiful thing to behold and the watchers exclaimed in admiration as it rose from its watery berth with the multi-colored, polished surface reflecting the light of the morning sun in blinding magnificence.

It was almost with sadness that the professor directed the rays and pulled the switch which sent the high frequency current on its message of death and destruction. The great sphere was hardly five hundred feet in the air when it exploded as had its predecessors. The resulting concussion laid bare the bottom of the ocean for a space several times the diameter of the sphere, and it seemed to the observers that the piled-up waters held their position for enough time to swallow up the powdered remains of the destroyed ship. Then they rushed together with a crash that was heard for miles and the resulting turbulence produced a waterspout which continued for fully ten minutes.

The videophone was speaking and while the professor swung the nose of his ship toward Long Island the crew was advised from Washington of the successful repulse of the enemy at Buffalo and Kansas City with the loss of six more of the enemy craft. That made twelve so far--and one captured!

Another of the atomic-storm-producing arcs had just been started over the western end of Long Island when the Pioneer arrived. But it had not much more than started when one of the enemy ships was

blown to bits by impulses from below. Th other two were carried about a mile in different directions by the force of the explosion and the Pioneer headed after one of these just as a huge air liner rose from the shore of Brooklyn in pursuit of the other. These two put on speed and started for parts unknown. But, with their speed retarded by the density of the earth's atmosphere, there was no escaping. A few seconds and all was over with them. That made sixteen!

The crew of the Pioneer was jubilant and the reports coming in from Washington made them even more so. New Orleans saved--Montreal--Detroit--Los Angeles--Tampico. Fifteen more of the enemy vessels accounted for! Now there remained by seventy-eight, and the morning not half gone!

* * *

But suddenly came a cry for help. The Pioneer was twenty thousand feet up and not an enemy ship was in sight when the Secretary's voice excitedly called:

"Professor! Something has gone wrong with the defense at Scranton and they report three of the enemy craft approaching. Can you get there in time?"

"I hope so. We'll try," answered the professor as he returned to the controls, swinging his ship around and heading westward with maximum acceleration. In five minutes they were within sight of the city and could make out the three spherical shapes in close formation as if about to start their work of destruction.

"Walter," called the professor, "do you think you can get one of them on the fly?"

"I'll try, sir," replied Walter. He rushed to the telescopic sight and

grasped the controls, rapidly swinging it around to the proper direction. With his eye glued to the eyepiece he called to his father:

"Give her the juice, Dad!"

Roy pulled the switch. The boy's aim had been accurate, for a cloud of bursting particles obscured the vision of the distant spheres. At least one of them had been accounted for!

Walter was so impatient he could hardly wait until the Pioneer was directly overhead. Then, without further instruction from the professor, he trained the deadly beams on first one and then the other of the fleeing survivors. Three more! And Walter had accounted for these three himself. He felt like a conqueror of old as he arose, shaking, from his position at the sighting control. Thirty-four gone!

"Fine work, my boy," the professor complimented him. "I was afraid we would be too late here. But you saved the city all right."

Walter was no more elated than Roy, who secretly gloated over this achievement of his boy. He was morally certain that he could not have accomplished this thing himself at the speed at which the Pioneer was traveling at the time. A great boy! he thought.

Hour by hour the reports continued from cities all over North America of attacks by the invaders and the destruction of the great globes. Radiograms continued to come from Mador and from the tone of these it was quite evident that he was puzzled, though it was also apparent that he had not the slightest idea of how unsuccessful the attacks of his fleet had been and of the number of his ships destroyed. Evidently these were so completely taken by surprise and so quickly did they meet their fate that they had no time to apprise Mador of what was going on. But he was becoming suspicious on account of the lack of reports and, at five P.M., announced in a

message that he was going to tour the North American continent and speed up the work of destruction. By the time this message was received it was calculated from reports received at Washington that eighty-one of the enemy craft had been accounted for. This, with the ship captured, left only twenty-seven with which to cope.

What a surprise Mador was to receive when he made the rounds!

For an hour or so no further news was received other than reports from a few cities that the enemy ships hovering in their locality had withdrawn and were no longer in view. As time went on it appeared that no further attacks were to be made that day, so the professor decided to return to Washington for the time being.

In the Research Building great excitement prevailed. The success of the battles against the enemy had keyed everyone up to a spirit of jubilation that was as intense as had been the previous despair. Reports showed that most of the cities had nearly resumed their normal activities, though there were still missing some of the people who had fled to the wilderness. Many of these would probably never return, since they were unequipped to cope with the dangers of the wild country they had so rashly entered.

No further messages came from Mador and it was beginning to be thought that the remaining twenty-seven of his ships had quitted the earth's atmosphere and started a retreat to their own planet. This theory had gained such credence by six-thirty P.M. that the news announcers were proclaiming it as an almost assured fact. Then it was suddenly upset by the announcement from the observatory of Washington that the remains of the fleet had been sighted about five hundred miles above the earth's surface. The astronomers had counted all twenty-seven of them huddled together as if in close conference. There was considerable of an uproar again when it was determined that the fleet was heading for the earth en masse, but

this time it was in anticipation of the complete annihilation of the fleet which all citizens now felt confident would result.

The fleet came at a rapid pace and it soon appeared that they were intending to attack in the hope of overpowering the cities of the earth by sheer concentration of numbers. It was no doubt Mador's idea that the defenders had only a very few of the defensive weapons, since in all cases except one his ships had been destroyed one at a time. The course of the fleet was determined as being directed at the city of New York and, as soon as this was assured, the professor again manned the Pioneer and started for his home city with the same crew as before. Advices to the defense committee in New York started them in full preparation for a decisive engagement with the entire body of the enemy.

part 12

XII.

The enemy fleet had been sighted by the time the Pioneer reached New York and the roof-tops of the city swarmed with millions of people who had assembled to witness the last great battle. The three New Yorkers aboard the Pioneer were greatly concerned at seeing this, since they feared their own loved ones might have joined the throng and would be subject to danger in case any three of the enemy vessels succeeded in producing one of the atomic storms while the defenders were engaged elsewhere. This fear was further increased when two hurried videophone calls made by Walter resulted in no answer, either at his own home or that of the professor.

But the enemy was coming and they had little time to consider the danger. Advice from the Bureau showed that there were now eleven of the beam transmitters set up at various points in Manhattan, Brooklyn, Bronx, Queens, and Staten Island. In addition, four huge air liners had been fitted out and were in their berths prepared for instant flight. The Thomas Energy people had provided special beam energy for each of these liners, the individual beams being so arranged that each could follow its own ship in any direction through any complicated maneuvers it might be required to make, and still furnish uninterrupted power.

The Pioneer, being invisible, was enabled to rise straight up through the enemy fleet and take its position about ten thousand feet above them.

Mador's plan of action was immediately apparent. He first dispatched nine of his ships, in groups of three, to the altitude of four thousand feet. One group centered over Manhattan, one over

Brooklyn, and one over Bronx borough. No sooner was this accomplished than each group of three was backed up by three more at an altitude of five thousand feet. The idea was evidently to start two arcs at each point simultaneously, hoping to successfully produce an atomic storm with the upper group in case the lower group was broken up from below by the defenders. Mador did not reckon with the Pioneer! But the Pioneer would indeed be kept busy if it hoped to upset Mador's plan, since it could not possibly be in more than one location at a time.

"Walter," said the professor, "your young eyes are quite evidently superior to my old ones in sighting our weapon. So I am going to appoint you our gunner for the rest of the fight."

"Thanks, Professor," said Walter, "I'll do my best." His heart pounded madly at the thought of the responsibility which was to be his. But he did not flinch. He felt sure he could duplicate his previous success at Scranton.

"I shall maneuver the ship," continued the professor, "and you, Roy, will please man the high frequency switch and provide current to our little beams when Walter gives the word."

"Righto, Nils," responded Roy. He was nearly as enthusiastic as was his son.

At that moment the two arcs were simultaneously started by the six ships beneath them.

"Now Walter," said the professor, "get one of the upper ones. We shall have to depend on the defenders of the city to get the lower ones."

"Right, sir," said Walter as he peered through the shining length of

the telescopic sight, manipulating the two control wheels as he spoke.

"Shoot, Dad," he called breathlessly, as the cross hairs intersected the exact center of one of the spheres ten thousand feet below.

Roy closed the switch and all watched eagerly. Less than half a second intervened. Then the great ball with its sputtering electrode went crashing into infinitely small bits. At almost the same instant one of the lower ships went the same way--then a second one. The defenders below were on the job, too! Both arcs were broken before they were well started.

As rapidly as he could sight the beams, Walter shifted to the second of the upper spheres. It went the way of the first and immediately afterward the third of the lower ones exploded also.

* * *

Walter was just about to train his sight on the last of the six when one of the Research men gave a startled exclamation:

"Look!" he shouted, "Staten Island is in trouble!"

It was true. Two groups of three globes each had gotten into action over the island. One of the lower ships had already been destroyed from below but the arc from the upper three was widening in scope as they retreated from each other. The survivors of the lower group were scurrying out of range of the down-sweeping arc. The flare of the rapidly spreading vortex hid from view of those on the ground the three ships producing it. But not so the Pioneer. Her crew had an unobstructed view of the three upper ships. There was no time to lose so the Pioneer was kept in its position and Walter trained his sight on the nearest of the distant spheres. By the time he shouted,

"Shoot!" to Roy the storm had commenced below and a gaping hole appeared in the roof structure of the city where the tip of the funnel had contacted. This was exactly like a Kansas twister, magnified in intensity a thousand times.

But once more Walter's eyes were good and the atomic storm ceased as abruptly as it had begun. One of the ships producing it was gone. The second and third followed at once as the clearing of the air gave those below a clear view.

The Pioneer again turned its attention to the nearer boroughs of the city. Manhattan was clear of the invaders, but over Brooklyn there appeared a new formation of six ships, with the upper arc well started and the lower one just broken up by the destruction of one of the three ships producing it, which was accomplished from below as they watched. Walter had already trained his sight on one of the upper ships when a shout came from the stern compartment:

"Look!" called one of the Research men from his look-out at that point, "The air liners have taken off!"

Sure enough, the four great ships had left their berths on the south shore of Long Island and were headed skyward at great speed. Each was a thousand feet long--their length more than twice the diameter of the enemy ships. But these ships, which normally carried three thousand passengers, were slender cylindrical affairs of great beauty, with blunt noses and long tapering tails.

They had observed the same thing as had been evident to those on the Pioneer--that the upper group of attackers was obscured from view below by the flaming arc produced by the lower group, however brief its duration. The four were heading toward a point above the attackers now over Brooklyn and three of them soon reached a strategic position for putting their beams into use. The fourth,

however, came in a little too close to one of the ships of the upper group where the huge arc had started. Not realizing the tremendous power released by these machines, they did not fear the result of passing so closely. But the professor knew they were headed for disaster and he cried aloud in impotent warning.

Just then, when the liner was not a thousand feet from the nearest sphere, it seemed to halt in mid-air. Slowly it poised a moment, then like a plummet dropped sickeningly for the city far beneath. Swifter and swifter it fell until it plunged with a great crash into the roof structure of the city and disappeared in the midst of falling debris, leaving a great black canyon in he crowded upper surface of Brooklyn. The watchers in the Pioneer almost wept in the realization of the hundreds of lives lost at this point. But nothing could be done about it now. And the three remaining liners had already accounted for two of the upper enemy ships, thus breaking the arc and its threatening atomic storm.

Another group, this time of only three, was forming over Manhattan when the videophone spoke:

"Professor," came the voice of Secretary Miller, "Three of the enemy ships have withdrawn and are leaving. It is believed that one of them contains the leader, Mador. We must get them or they will return to Venus and organize another and more terrible expedition against us. Start for them immediately."

"Very well, Mr. Secretary," he replied, and at once searched the skies for the departing ships.

He soon sighted them and the Pioneer started upward at an angle so sharp and with such an acceleration that its occupants were mostly thrown to the floor. Fortunately the speed of the bulky enemy craft was not so great in the denseness of the lower atmosphere and

the Pioneer rapidly drew near enough for the first shot. Walter held to the sight like a leech and was soon rewarded by the great spreading puff that told of the end of one of the machines. Still the speed of the remaining two increased and they were many miles above the earth when the second one was hit. The third was still more difficult and the professor was almost doubtful of success. They had traveled so far that the air wa extremely rare, and, when ionized by the twin beams was a very poor conductor of the high frequency current. But just when Walter likewise had about given up hope--for the beams had been trained on their mark for a full minute--success came. With this one, though, there was not the violent explosion that had marked the destruction of its fellows. It was more of a fusing action, the great sphere slowly changing shape and commencing to melt and drip like a lighted candle. Leisurely the hull dissolved and fell away in huge, bubbling streamers. The interior was exposed to view and the crew could be seen rushing about in despair and gasping for breath in the thin air as the ship took fire and lost headway. Soon the great, smouldering, teetering cage tilted sharply and started its earthward descent.

* * *

The Pioneer was close enough for all on board to see the figure of a man on the remnants of the control platform shaking his fists at the earth in a violent gesture of futile rage.

"That's Mador, as sure as you're a foot high," said the professor. "And watch him. He's going to jump."

Jump he did, with a last despairing, strangling gesture. The war was over!"

"Great Scott!" groaned Roy, with sudden realization of the possibilities, "They'll fall in the city and kill many more of our people."

"I think not," the professor reassured him, "for it seems to me that we have progressed in an eastward direction and should now be well out over the Atlantic. But we'll follow them and see."

The Pioneer dropped in the wake of the wrecked ship, which, having reached denser air, was now flaming violently. They arrived at a safe altitude just in time to see the remaining twisted mass of structural metal work and machinery vanish in the depths of the ocean with a cloud of steam and boiling water marking the spot. Sighs of relief were breathed as they headed for New York.

When they arrived over the city everything was quiet and the roof tops were deserted except for groups of workmen who were clearing up the debris around the great gaps in the upper surfaces of Staten Island and Brooklyn.

"Now to see that our folks are safe," said the professor. He headed the Pioneer for his own laboratory and she was soon cradled in her own berth. "Sorry to leave you fellows to your own resources," he apologized to the Research men, "but we simply must find out how things are at our homes. And you can take the next air liner to Washington, so you will not lose much time getting back."

The men assured him that this arrangement was entirely to their satisfaction and, knowing his anxiety and that of his companions, did not delay them further with the congratulations and praise they wished to bestow. The group parted company at the northbound moving way.

part 13

XIII.

When the three adventurers burst into Roy's apartment they found three solemn-faced women sitting before the videophone. But, on seeing them, the three women rose as one and, with cries of joy, rushed to the arms of their men. It was a joyous sextet that evening and tears gave way to laughter and merriment. The happiness of the parents was no greater than that of the two younger membes of the party. And then and there consent was given and arrangements made for the marriage of Walter and Dorothy.

Secretary Miller called the professor to the videophone and advised him that the President wished him to appear in Washington on the following day with his two companions. He hinted at a reward for their services, but the professor laughingly protested and asked only to be left alone with his family and friends until the next day. This was agreed to with good natured banter on the part of the Secretary, and the professor returned to the rest of the group.

The women's description of the battle as seen from the city roofs was exceedingly interesting to the men, who had viewed it only from above. The concussions had been so terrific when experienced from below that many of the thick skylights over the upper ways were broken by the numerous shocks. The three air liners destroyed five of the enemy craft altogether and returned safely to their berths. But where the fourth had fallen, its machinery paralyzed by the power radiated from the enemy ship it had neared, great damage was done. The apartments of fully five hundred families were destroyed in its crash down through the city structure and the lives of six hundred citizens in addition to those of its own crew of one hundred and fifty had been snuffed out. On Staten Island nearly eight hundred had lost

their lives during the brief time in which that portion of the city was subjected to the atomic storm. And the destruction of property in those few seconds was widespread, an area over a thousand feet in diameter having been torn down through fully fifteen of the upper levels of the city. Six levels of moving ways had been entirely paralyzed and were still not in operation.

After but little more than an hour's conversation the men became so wearied that they could scarcely remain awake. The reaction had set in and it was agreed that they must obtain sleep and plenty of it. Small wonder there was too, for the three had slept only in brief snatches during the preceding five days. So the party broke up at an early hour, the professor taking Zora and Dorothy with him to their own apartment.

Next day the professor was advised by Secretary Miller that the President expected him at the capitol at three P.M. with his two companions and their families. The professor notified Roy and the six met at the Washington Air Line terminal at one o'clock. There they were escorted with considerable ceremony and celebration to the great beam-lane ship that was to rush them to the world capitol.

At two forty-five they disembarked in Washington and were immediately ushered into the presence of the Terrestrial President in his own private office. He personally thanked the men for their work and told them of the meeting that was called for three o'clock in the assembly hall of the Capitol building. They left for this meeting, not knowing what to expect, and were completely astonished when the President led them out to the center of the platform facing an audience of fully fifty thousand people.

Upon their entrance the audience jumped to its feet and the auditorium resounded to the din of the clapping, cheering, and whistling. All about them on the stage were the high officials of the

Terrestrial Government, including the Secretaries of all Departments and the Vice Presidents of the European, Asian, African, and South American Divisions. It was a great reception and it was with much confusion for them and with many more cheers from the crowd that the visitors were led to their seats.

* * *

When order was restored, the President stepped to the speaker's desk before the General News Bureau videophone and addressed the two audiences, those present in the auditorium and the vastly greater audience watching and listening to the proceedings in private and public videos all over the world:

"People of the world," he began, "we have assembled today to give honor and thanks to Professor Nilsson and his able assistants, Roy and Walter Hamilton, for their work in saving our civilization from untold disaster--possibly from complete destruction. It is just twenty years since the professor and Roy Hamilton saved the world from the equally serious menace of the inhabitants of Munan. They were not sufficiently recognized or honored at that time, but it is our intention to make up for it now as well as is possible. I will ask the three heroes of the War of the Planets to step to the desk so that you can all view them at close range."

Roy, Walter, and the professor approached the President in great embarrassment, standing before the large disc of the videophone and directly facing the visible audience. Again the hall rang with the plaudits of those within. The professor fidgeted and fussed. Roy and Walter appeared nervous and ill at ease. But Dorothy hugged her mother and Thelda in her glee.

"Now, ladies and gentlemen," the President continued, "I shall get down to cases. Kardos, the commander of the captured enemy ship,

has finally been induced to talk. He has told us many things and from his revelations it is certain that further warlike moves against us are planned by the people of Venus. His story of the machinations and plottings of Mador and the Munanese he brought with him to Venus would make your blood curdle. Further than this Kardos assures us that Mars is inhabited by intelligent creatures and that they are also in league with the people of Venus and are planning an expedition of conquest to our fair planet.

"For nearly five centuries there has been no war on our earth. Therefore no Department of War has been necessary in our unified government. But we have today organized a new Department of Defense--a department to investigate conditions on the two planets named and to prepare our world to defend itself against any attacks which might be made by them. I hereby appoint Professor Nilsson as Secretary of Terrestrial Defense."

The professor gazed in open-mouthed wonder, while the crowd again went wild with joy.

"Do you accept, Professor?" asked the President.

"Why--I guess so--and thank you for the unexpected honor," he stammered.

Zora beamed with pride and Dorothy could scarcely be kept to her seat, so great was her enthusiasm and anticipation.

"Next we come to that brave lad, Walter Hamilton," continued the President. "He it was who thought of the old book wherein he had read of the ancient experiements with material similar to that of which the hulls of the enemy vessels were composed. He it was who obtained this information for the professor, thus making possible the development of the apparatus with which those vessels were

destroyed. I hereby present Walter with the highest honor which our Terrestrial Government can bestow upon a private citizen, the Medal of Distinguished Accomplishment."

Once more the hall rang with applause as Walter, blushing to the roots of his hair, stood close while the President pinned to the breast of his coat the coveted decoration. Needless to say, Dorothy was starry-eyed in her joy at this presentation.

"Thank you, Mr. President," said Walter, suddenly finding that his hands had grown unaccountably large and very much in the way. Thrusting them into his pockets, he grinned and shifted from one foot to the other.

"And last, but by no means least," said the President, "we come to Roy Hamilton, Walter's father. It was he who was called to Munan a score of years ago by the golden voice of the woman who is now his helpmate and the mother of his son, whom we have just honored. His work with Professor--I should say, Secretary--Nilsson at that time, as in the present case of the War of the Planets showed great courage and the spirit of the soldier. I hereby present him also with the D. A. medal and, in addition, commission him to supervise the art work to be carried out in the building which is to be erected in Washington in memory of those who lost their lives in this, the first interplanetary war."

It was Roy's turn to be surprised and he stammered and flushed even more than had Walter. The commission was a big one and would make him independent for life in addition to increasing his prestige greatly.

"Thank you, sir," he said simply.

The President spoke again: "To conclude this ceremony I wish to

extend the sincere gratitude of our entire world to these three. As to Secretary Nilsson--his discretionary powers in the administration of the new Department are to be absolute and he has the entire resources of the Department of Scientific Research at his disposal, as well as the captured enemy ship. I do not wish to make any definite recommendations as to the personnel of his Department, but I feel that it will be greatly to his advantage if he retains Walter Hamilton as his personal assistant in the great work he is about to carry out. No doubt he will also find Roy Hamilton as loyal an ally and supporter in his new work as he has in the past."

The professor nodded vigorously. "You have taken the words out of my mouth, Mr. President," he said. "I had intended to ask your advice on the very point. My two dear friends shall always be with me."

He grasped the hands of both as pandemonium broke loose in the hall.

Dorothy's pride was manifest to everyone on the platform and when Walter returned to his seat her enthusiastic hugging and kissing of the much flustered youth sent all those dignified officials into raptures of delight.

When, a little later, the meeting broke up with wild demonstrations, Roy and the professor, with Thelda and Zora at their sides, stood in the wings, watching. Walter and Dorothy, all unmindful of the great men crowding about them, stood hand in hand, talking earnestly of the future. Pride in these two filled the hearts of the parents as they too spoke of the future and what it might hold in store for them all.

THE END

(borrowed from Johnny Pez blog http://johnnypez9.blogspot.com/)