

The Threat of the Robot

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Published 1929 in Science Wonder Stories, Vol. 01, No. 1

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Published in: www.atomicvintage.com.br

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CHAPTER I - The Return of a Wanderer

“WOW!” exclaimed the middle aged giant. “What luck to arrive just in time for the big game of the year!”

Ed Ball had not realized how timely was his return to New York till he began reading the sporting page of the paper while waiting for his breakfast. Gazing at the advertisement, oblivious of his surroundings, he recalled the last game of football that he had played in such a brilliant fashion twenty years ago. For three seasons he had played a remarkable game, and then had graduated and left New York for the far places of the earth. He thought about that last game, how he had personally made most of the score, and finally ran off the field amid the plaudits of the eighty thousand spectators.

For twenty years he had explored places where the white man was almost unknown, hunting for reptile eggs in Asiafa, King Solomon’s lost cities in South Africa, and rare fossils in Australia. He had deliberately left civilization and he knew more of the world of twenty five thousand years ago than he did of the world of today.

Finally he awoke to the fact that he was past forty and that it might be a good idea to return to New York and see how his various investments were progressing. Without planning to do so, he had arrived in the Metropolis the night before the great game between New York and Pennsylvania. He had not realized this until he read about the game in the morning paper. No wonder he was excited!

The newspaper account of the game looked peculiar, but he simply thought that it was some modern slang with which he knew he was rather unfamiliar. He propped the paper against the coffee pot and read:

“Pennsylvania Places Powerful Team on Field Against New York.

“University of Pennsylvania promises to place powerful team of football robots on field this afternoon against the crack team of the University of New York. The Pennsylvania experts

claim a degree of mechanical ability for their players never surpassed in the history of football. Twenty million persons expected to witness the game. Stop work and tune in on W2RX. Permits cost only one dollar. Why work when you can be entertained? Sit at home and see the sport of Kings, the contest of a century. This game decides the Inter-University Robot Championship of the country and will certainly be worth seeing. The mechanical experts of the greatest colleges in the East will stage a battle of skill, wit and brawn. Be sure to tune in on W2RX. One dollar is all it will cost to entertain the entire family.”

Ball called his waiter to the table. Pointing to the paper, he asked what W2RX meant.

“That is the television broadcasting station code number, sir,” was the polite reply. “But you need not worry about that so long as you are a guest at this hotel. The management is glad to furnish this service free to its guests. At three o'clock this afternoon just go to your room, sir, and tune in, and if you are not an expert, just call for one of the bellboys, and he will be glad to get W2RX for you.

“And what will happen when he does get W2RX for me?”

“Then you will see the game. I understand that it is a very good game, though I do not care much for sports myself.”

Ed Ball gazed at the waiter in astonishment. “You don't mean that I can see the game from the hotel?” he asked.

“Certainly. That is the way almost everyone does nowadays. I understand that the spectators used to go out to the field, sir, but that was before my time.”

There was a lot about this that the former football star did not understand, but as he did not want to betray his ignorance to the waiter, he dismissed him and finished his breakfast. Business matters occupied part of the day, but by two-fifty Ed Ball was at the main gate of the stadium of the University of New York, which certainly looked very much as it had looked twenty years ago when he was at the height of his fame. That is, it looked very much as it used

to, as far as stone and cement and location were concerned. It was very much unlike it in every other way. In the first place, there was no crowd. A few men were lounging at the gate, but the eighty thousand spectators that had thronged to see the game in years gone by were strangely absent. It was as quiet and peaceful as a country village. Walking up to the ticket office, Ball was surprised to find that there was no one there to wait on him; and, as the gate was open, he walked in without a ticket.

It was a wonderful day of the Indian Summer. The grass of the football field was green, the sky, blue. Nature was at her sunniest. Ball saw a small group of men in the boxes on one side at the center and a similar group on the opposite side. There were some large, peculiar boxes placed at regular intervals around the field. So far, there were no players and practically no audience. Ball thought that he must be a day off in his chronology. He felt thoroughly uneasy; there was something uncanny in the stillness which was so different from the hungry roar that came from the assembled thousands when he was a player.

Walking up to one of the groups of men sitting in the stands he asked casually, "When will the game begin?"

"In about ten minutes," one of the young men answered him rather pleasantly. "You see, we have to wait till W2RX has the air, but that will be soon. Our men will be out in a few minutes; the mechanics are going over them for the last time now. Won't you sit down and watch it, sir? It is so seldom that we have actual spectators that we will be honored by your presence."

"Why — Yes, I guess I will," Ball replied slowly. "Which is the New York side?"

"Right here. You see, we are the real team, sir. Eleven of us and the substitutes," and he waved his hand so that about twenty-small studious looking men were included in his gesture.

“That’s good,” said Ball, rather astonished. “I am for New York. In fact, I used to play center on the team some twenty years ago. My name is Ball, Ed Ball, perhaps some of you boys have heard of me?”

The young men thronged around him.

“Sure, we have. Good old Ball! One of the old timers, when men were men. Why, you are one of our heroes, sir. Come up and sit with the team and watch us defend the honor of the good old Varsity. Things are changed now, but we are glad to have you with us. Your being here will put a lot of pep in the game.”

The Great Battle

THEY stood around the giant veteran and made him feel thoroughly at home. Taking him into the stand, they gave him a seat of honor. “Right with the team, where you belong,” they said. Then suddenly the silence was broken by a shrill whistle, and each one of the team became strangely alert and silent as he bent over a peculiar machine which stood on a table in front of him. For a few minutes Ball thought that the men had been kidding him. He felt sure that they were really newspaper reporters and that these machines were some new kind of telegraphic apparatus. Then the players appeared at each end of the field, lined up in the old position, the ball was kicked and the game was on. Ball was so much interested that he forgot the men sitting near him and their peculiar instruments.

The game was rather similar to the one that he remembered playing twenty years ago. The odd things that he saw he attributed to the change in the rules. Occasionally a player would be knocked out and the doctors would go out on the field to treat him. Each side seemed to play well but to Ball the silence was depressing. There were even missing the shouts of encouragement from one player to another. Even the collegians in the stands whispered to each other.

Finally, the quarter came to an end. Neither side had scored. The eleven New Yorkers stopped pecking at their machines and looked up. They were evidently pleased with the results.

“Well, Ball, Old Top!” one of the men exclaimed. “We held them that time. We thought they had some new inventions in their robots, but our men were just as good. The directing machinery worked perfectly, and our team worked in beautiful harmony. There will be a fifteen minute interval and then we will go at it again. It is too hard a strain on us to play more than twenty minutes at a time. We often find that the full four quarters of twenty minutes is very exhausting. You have no idea the amount of concentration it requires. Often I have seen a man faint.”

“But those men seemed to be strong fellows,” replied Ball.

“Oh! I was not talking about them. I mean the real team, the boys that are struggling here at the directing machines for the honor of our dear old college.”

“Well, I’ll be the goat!” exclaimed Ball, suddenly. “Tell me all about it. I have been in Asia and Africa and Australia for twenty years. I just arrived in New York last night. I have not tried to read a paper for years and years. Everything is changed, and I am either insane or you are. So, tell me all about it, and I will see what is the trouble with me.”

But before they could begin to tell him about the changes in the football game, the whistle blew and each man rushed back to his seat. This time Ball was asked to sit near the center of the group, and, one of the men whispered to him rather hastily, to watch the robot who was playing center, as that was the player who was controlled by the little collegian who was the Captain of the team.

For a few minutes the game was even and then Pennsylvania scored. The ball was again put into play and again it took only a few minutes for the visiting team to score. The New York players were being repeatedly knocked out; they began to run around the field in an aimless fashion, while the Pennsylvania eleven continued to play with smooth precision. Ball looked

around at the eleven men who were manipulating the type-writer-like machines; their faces were haggard; there was no doubt as to their worry. Finally, the quarter ended, with the score thirty-six to nothing in favor of Pennsylvania.

The New York players trotted off the field, but several had to be assisted by the mechanics. At once the eleven men in the grandstand went into conference with the chief electrician.

“Something is wrong with the power!” that official announced. In some way, the directing currents are being blocked and misinterpreted. Perhaps it is some new wave that the other team is using against us.”

Just then several of the mechanics rushed up and announced that three of the robots were completely out of order and that the old style machines would have to be used as substitutes. Consternation reigned.

It would be useless to tell the story of the rest of that game. Though the eleven little fellows in the grandstand on the New York side did their best, even working to the point of exhaustion, it was impossible to do anything with the conquering visitors, who finally ended the game to the tune of one hundred and thirty to nothing.

Ed Ball was too much of a gentleman to make any comments on the score, but he could not help recalling the old days when such a defeat would have been impossible, even for a small college. Though depressed, he was filled with a deep curiosity, and he decided to satisfy it by asking the team to take supper with him that evening. He had an idea that they would become talkative after the meal that he would provide for them at the hotel.

The season being over, and their period of training broken, the eleven men were free to accept the invitation. They suggested that the coach and the chief electrician come along, and Ball was delighted with the idea. So, it was quite a gathering that filled one of the private rooms at the Lostmore Hotel, the latest one hundred story hotel in the great city.

CHAPTER II - An Explanation

BALL found, to his delight, that the coach had actually played football in the old style; so, he suggested, after the coffee and cigars had been served, that the older man tell his story first. Sigmund Haggard was only thirty-nine years old, but in that time he had seen the entire system of athletics revolutionized in every way. He had been one of the last players and one of the first coaches for the new system and was eminently qualified to explain the change.

“The thing that started the trouble, Mr. Ball,” he began, “was the popularity of the game. It did not make any difference how large the stadiums were built, they could not accommodate the crowds that wanted to see ' the big games. Finally, the authorities realized that the saturation point had been reached, as far as the size of the audience was concerned. The stadiums could be built larger but,, even as they were, a large percentage of the audience was so far away from the players that they had to use field glasses to get even a small idea of what was going op. Another thing that made an increase in the size of the audience impossible was the difficulty in getting them to their seats. Most of them thought it was necessary for them to come in their cars. And when one hundred thousand people arrive at an athletic field in automobiles, in an hour’s time the congestion is frightful. There was no place to park the cars. It took hours to get to the game and hours to get away, and at every big game there were five times as many people refused seats as were accommodated. Even the graduates could not be accommodated, and that caused a lot of hard feelings and cost the colleges a lot of money because, naturally, the rich men did not like to give large endowments to schools when they could not get enough tickets for their friends to see the big games.

“Just about the time you left the country, television was beginning to make great advances. Of course, you were familiar with the moving picture and the combination of sound and picture in the filming of the so called talking picture. Television, you recall, attempted to

carry images through the air by radio waves, just as the first radio carried sound. It was believed that the sound and the images could be synchronized as far as time was concerned. As well as I recall, they were just beginning to do this in a very simple way about twenty years ago. A man would stand in front of the broadcasting apparatus and made a short talk. His image would appear on the receiving plate a hundred miles away, and while the radio would broadcast his speech, television would reproduce the movement of his lips and his smile. I recall the first attempts that were shown in the theaters. A barking dog, a whistling train, a famous tenor singing a few notes, was as far as they could go. Later on, the technique was improved and the details of the images were made clearer, and, finally, the picture was projected on a screen, just as a regular moving picture and just as clear. About that time vaudeville players began to put on short sketches which were broadcast. It was really remarkable, the rapidity with which improvements were made in this new art.

“Of course, the financial effect on the legitimate theater was at once anticipated by the theatrical trust. By a clever manipulation of the market, they secured control of all the companies owning the original patents. They realized that television was inevitable and that it might drive the legitimate plays and opera out of existence, as the movie had threatened to do. So they decided to control it. They refused to sell receiving apparatus but put them in private homes for a small yearly rental, plus a nominal charge for each performance they were used for. This arrangement brought them a good income, and made it possible for them to retain the services of their star performers.

“Besides, they started to broadcast other features, like parades, prizefights and tennis matches. Their charges were low, and they counted on the volume of business to bring returns. For example, this afternoon’s football game cost each person who had one of the television screens one dollar for the privilege. Of course, as many persons as could crowd in a room could

see it for that dollar. Out of that dollar, thirty cents goes to each of the teams and the remaining forty cents to the company.

“The effect on the theater was at once seen, but no one realized just what this invention would do for sports. It seemed that everybody arrived at the same decision at the same time: namely, that it was easier to stay at home and see a prizefight or a tennis game for a dollar than it was to fight the crowds and pay anywhere from five to fifty dollars for poor accommodations. The attendance at all the sports fell off in an astonishing manner, and the various promoters would have been bankrupt had it not been for the generosity of the television companies. They could afford to do the square thing, because, while the actual attendance at the games fell off, the interest in the sports increased, and, finally, instead of seventy thousand people seeing a prize-fight, it was estimated that as many as fifty million people all over the country would stop everything and see and hear the fight in their own homes at the same time and at the small cost of a dollar a home.

“The time came when complete performances of an opera would be given in an opera house, without a single spectator. For the opera could be broadcast in the air to the owners of the television receiving screens. And the same thing rapidly became true of the sports. It may seem rather strange to you, but the last heavyweight championship fight took place with less than a hundred spectators at the ringside, and the two men fought just as fiercely as they used to, because they knew that an audience of fifty million were watching them.

“That is why there were no people out to watch today’s game, Mr. Ball. Actually, there were millions who were carefully watching every play, but they were in their homes or in a hundred thousand small moving picture theaters all over the country. They are still interested, but they prefer watching the game in comfort.”

“Well, that is almost too much for me!” exclaimed Ed Ball. “I have seen and -heard some peculiar things in the out of the way corners of the earth, but nothing like that. Now, how

about the game that I saw today? What kind of a game was that, anyway? And what kind of players had you? And by the Seven Sacred Purple Cows of Benares; what were those funny little typewriters you boys worked over so hard?"

"I will tell you about that part," said Rudolph Drach, the chief electrician. "The new game really falls into my field of science. Of course, Haggard has been telling you about the importance of television, and there is no doubt that it is important, but there would be no football game to show these millions of television fans if the electricians had not perfected the robot into a real football player. The game as it is played now has grown from a small beginning into something that is nearly mechanically perfect and, of course, this development has been caused by the inventions of a great many scientists. But really I was the man who first proposed it and put the first robot into uniform."

"Well, what is a robot?" interrupted Ball. "I suppose I seem rather ignorant to you fellows, but I have been away from civilization for twenty years. So start at the beginning and make it simple; am I to understand that those players today were just some kind of funny machines?"

New Beginnings

"THAT'S it exactly," Drach said quickly, "a robot is a complicated machine, made up of batteries and motors and springs. The first one was brought to New York from London in January, 1929. It was a rather crude affair, but it could walk and talk and obey a few simple commands. It looked like a machine — in fact, no one would mistake it for anything else. It has some radio apparatus in it, and the vibrations of the air by the voice would cause the radio apparatus to operate and set in motion a motor. By this means the machine man would wave his hand, start walking, or begin to deliver a speech which, of course, was nothing but a cleverly arranged phonograph in his interior. There was a great deal of excitement about it, but in a

short time that died away, because the machines became so common that they lost their thrill. About a year later I had a great deal of trouble in finding the right kind of a center for my football team, so I conceived the idea of using a robot just for practice. You see, I had played football while studying electrical engineering, and I thought I could coach for a few years to help out with my family expenses. I built this robot, geared him up to bend over and snap the ball back between his legs and to buck the line and a few simple movements. I would stand near him and shout the signal, and at the proper sound he would make the desired movement and then snap back into his normal position of bending forward with his hands on his knees. We made a fighting face for him, put him in football togs, and he became quite a favorite with the team. I found out that he was better than any center I could develop because I could always depend on his doing the same thing at the same time in exactly the same perfect manner. He was a tireless player. Later on I taught the quarterback to give him his signals, put heavier rubber muscles into his arms and legs and used him in practice games with the scrubs. Later I made two of them, and the boys were wild with delight over seeing the two machines plunge into each other.

“Then television began to hurt us. Coach Haggard told you about how it killed the attendance, but he did not explain how it hurt the game of football. Of course, two prizefighters might be willing to kill each other without an audience because they were making a half million or so out of it. But these college boys were playing for the applause, and when they stopped they just quit coming out for the team. This was especially true of the heavy men. The little fellows enjoyed the spectacular running and throwing the ball, even if there were no one to see them. But the big fellows did not enjoy having their bones broken without anyone there to see it. We just had to have teams and games. We needed the money to finance our athletics. So, I proposed to some of the colleges that we secretly substitute a few robots to play center and

fullback. We worked the plan for two seasons without the public tumbling to it. There were eleven players on each team, and the real men and the machines were almost undistinguishable.

“Of course, they had to be handled rather carefully. The matter of their signals was a most important one. If the opposing side learned these signals, they could give them at the wrong moment and confuse the whole play. This was not considered sporting, but it was being done at times in the stress of the battle.

“It remained for a final invention, to revolutionize the game of football. Electrical multiple-superimposed wave lengths were being studied more carefully and used in more peculiar and unheard of ways. One inventor startled the nation by setting a small gasoline launch out to sea, with the engine going, but no one on board. He directed the movements of this launch from the shore by sending wireless waves to a mechanism which moved the rudder. Three miles out he turned the little ship around and guided it safely back to the shore, even turning off the gasoline engine at the proper time. In a similar manner, automobiles were guided, with no one at the wheel, and even airplanes were controlled. The possibilities of such a governing of moving bodies were tremendous. Suppose five hundred planes were sent over an enemy city each loaded with high explosives, and when a certain button was pressed on the switchboard at home the entire load of TNT would be dropped on a defenceless city? An entirely new kind of warfare would ensue. Suppose robots guided by radio were sent forward to attack an enemy’s position?

“But all these possibilities have nothing to do with football. At least, not as far as my telling you about it tonight. You are interested in the game and not in warfare. So, I will simply say that I began to experiment with the control of the movements of a football robot by electrical waves rather than by the spoken voice. I had several enthusiastic students help me, and at last we had the satisfaction of seeing a robot out on the field do practically everything that a man can do, and entirely under our control. We made a governing keyboard, the final

evolution of which you saw today. Pressing one key made the robot raise his right arm, while another key started him running. By holding down that key and pressing another one he swerved to the left.

“As a machine, it was practically perfect, but in itself it had no intelligence. It was still necessary for the human mind to guide its movements. So, it became our task to select men and train them to use these machines; to sit in the grandstands and work the governing keyboards in such a way as to get one hundred percent efficiency from the robot ball players.

“We found that to properly work one of the machines required a very high grade of intelligence. And when it came to selecting eleven men who could work as a team, in perfect harmony with each other, so the eleven robots would act as one well-run machine, why, that was an almost insible task. It was soon discovered that the best type of collegians were little men with clever brains. Chess and bridge players made good players, if they could be trained to use their hands quickly enough. Some of our best men have come from the music schools as violinists and piano players.

“Finally, the grand idea occurred to me. The television audience did not care much whether the players were machines or men, so long as they saw a real fast and interesting game. It became more and more impossible to obtain real players, so why not form teams of eleven robots and have the intercollegiate competition consist of the skill in making faster and better robots and in training team of eleven undergraduates to work at the keyboards. I proposed that plan ten years ago, and it was enthusiastically adopted as a new game. But it was so superior to football that the old game was abandoned, and the new game received the old name. The papers now speak of the students who sit at the keyboards and the undergraduates who are able to build the most perfect machines. We still have coaches, but the electrical expert at every big college is the big man, and he is praised or blamed for victory or defeat.”

Ball Makes a Plea

“WELL, you were badly defeated today,” growled Ball, who was still suffering from the humiliation of seeing his Alma Mater so badly trounced.

“We sure were badly whipped,” agreed Drach. “Honestly, I do not know what did happen. I think, though, they have found some new wave over at Penn., and they used it today to disturb our governing currents. Some of our robots were badly burned, and one was entirely ruined inside. Personally, I am glad that the season is over. It has been a hard one on all of us, and these boys who have been sitting over the keyboards every Saturday, are rather well shot to pieces, as far as their nerves are concerned. It has been a fairly good season, and I guess we made over five million for the University, enough to put up a new building. At the same time, it is hard work, and I doubt if it is really appreciated by most of the college. Of course, we are burned out. But we will get our pep back, and by next spring we will be putting in long hours in our experimental laboratory, building stronger and better robots. We will find out what Penn did to us, and we will learn how to block those waves and perhaps hit them with a new wave of our own invention.”

Ball looked at the two older men and then at the group of small collegians who had borne the brunt of the football season just passed. Then he had some pre-war stuff passed and proposed a toast to the good old college.

“I used to fight for her, boys,” he said. “I used to go out there and play like those robots you worked this afternoon. I recall the men who played with me, and I guess that we did not have between us as much brains as one of you little fellows have. But, by the Seven Sacred Pigs, how we did run and fight and sweat for the honor of the dear old school ! I was not very much impressed with the game today, as a game, but I did admire your fighting spirit. Even when you knew you were licked you kept on pounding at those keys. So, I am strong for you, and I really love you, because, even though we are twenty years apart in time and about two

thousand years apart in our ideas of real sport, you sacrifice everything to win for your college just as we did years ago. It is the same spirit, so, let's drink to the dear old school, and to her success in the future."

After the team left, Ball took the coach and the electrician to his room for a final talk.

"What I want to say, men," he began, "is just this. What Penn did to us today was not sporting. As I understand it, they just about ruined some of our machines. That looks like dirty football. How about it?"

"It is all in the day's work," replied Coach Haggard, shrugging his shoulders. "Personally, I have always held out for straight machine football and no tricks, but Drach thinks they have a right to use any thing new that they are able to discover."

Ball looked at the electrician, questioningly.

Drach drummed on the arm of his chair and finally replied.

"It is rather hard to tell just where the line can be drawn. I, personally, see little difference between disabling a machine by a new form of electric wave, and putting a human player out of the game by hitting him on the jaw. They say the game used to be rather rough when you played it, Mr. Ball, and you saw from today's exhibition that it is still rough. Only today machines were hurt instead of men."

The three men sat silently puffing on their cigars. After a long pause, Ball started to talk.

"I can talk a dozen foreign lingo's better than I can English, but I have something I want to say to you men, and I hope I can make you understand it. I believe that when you put machines in to take the place of men, you caused the human race to lose something. I am willing to admit that college sports were* rather commercialized and specialized. And there is no doubt that, as exercise, it reached only a small percentage of the undergraduates. But they all went out to see the game, and they cheered and held snake dances and rallies, and the game meant

something to them. It was a part of their life, it drew them together, it gave the old grads something to talk about and an excuse to come back to college once or twice a year and renew their youth. You have killed all that. Why, even the undergraduates do not come out to support their team, but prefer to see the game in their rooms or frat houses. There is actually about as much interest shown as used to be shown in the old days when our team played intercollegiate chess.”

“At least, we are making money,” pleaded Haggard.

“Money is not everything,” retorted Ball. “I have so much money that I have not the slightest idea how much I am worth, and yet I have spent the best twenty years of my life collecting old eggs and bones for our museum. It is just a game to me, and I have played it just as hard as I used to play football. You say you made five million this season for the University. I could give you that much and not know it — but in all this I am thinking of men and not money. It looks dangerous to me, because there is no telling where it will stop. Suppose we have men to represent us in sports, machine men, and the same kind of machines to do our work for us. I can even imagine a golf game between two robots, directed by the experts from the gallery of the club house. We shall be apt to lose the use of our muscles. Look at those poor undergraduates who were on the team and had supper with us tonight. They may be brilliant at pounding the keys, but they could not even make a success of a half hour’s setting-up exercise. They are weaklings, and the whole nation may become like that. How about it? Don’t you think that something can be done to bring back the old days when men were men and gloried in the actual fight and conflict of sport, just for the love of it?”

“I do not think so”, replied Drach. “This is a machine age, an age of electricity and radio and television. We are up in the air in every whys. Our bodies may suffer, but our minds are certainly expanding. Think of ten million amateur radio experts in the United States! Think of the millions who can repair their own automobiles or airplanes! No one walks anymore. The

pedestrian as a race is doomed. So is everything that is old fashioned. We are living in an age of jazz. You have a good room here. Have you tried your television sheet? Probably did not know you had one, did you?

Here it is over on this apparently blank wall. Let me turn off the lights and tune in for you. Do you like opera? I can get some good heavy opera from Berlin, or, perhaps, you rather see the Follies or a good Burlesque show. How about it? They are playing cricket over in Australia and I can get that for you.”

“Let's see a good song and dance show for the tired business man,” suggested Haggard. “I hear that the show, “ADAM NEEDS A MADAM,” is worth seeing.”

CHAPTER III - An Ominous Dream

SO Drach turned off the lights and tuned in on the musical comedy. And for the next two hours the chorus girls pranced and danced and sang, and they were seen and heard just as well in the hotel room as they would have been in the best seat of the old time theater. Then, pleading fatigue from the excitement of the day the coach and the electrician left their host, after the television screen had been disconnected and the lights turned on.

Ball was unable to sleep, so he sent down stairs for the evening paper. The bell-boy who brought it explained that he could obtain very good current news service by tuning in on GYX on the radio, but Ball preferred to get his news in the old fashioned way. The very first article that he read irritated him. It gave a full account of the mechanical traffic policeman that the New York Electrical Society had finally perfected and had given, as a present, to the city. This traffic robot had an automatic eye, which was extremely sensitive to light. The change from light to shadow set the arms of the robot in motion. He was controlled by a beam of light which shone persistently in his eye. When a car crossed this beam of light, cutting it off from the eye, the robot reacted by moving its arms in such a way that the traffic signals were changed,

thereby allowing the automobiles causing the change to proceed. The signals were changed again only when thirty seconds of the uninterrupted shining of the beam in the robot's eye had passed, thereby allowing all the cars on that street to move on. It was really an ingenious device. The article finally became rather humorous, and suggested that, with additional improvements, it might be possible to make a police commissioner out of one of these robots.

Ball went to bed, thoroughly irritated with his first day of actual contact with the new world. Instead of finding comfort and relaxation in sleep, he was simply tormented with unpleasant dreams. He thought that he was living in a world in which the conflict between the machine robots and the worker was so intense that unemployment was serious problem. In practically every phase of life the machine was crowding the workingman out of his job. The robots were selling tickets in the subway stations, directing traffic, digging ditches, building new skyscrapers, forming new and unheard of additions to the army and navy. And some of them, connected to adding machines, and to typewriters in large offices were actually keeping sets of books and doing part of the stenographic work in a purely mechanical way by very capable machines.

In these dreams, Ball saw the gradual starvation of society, first, for the real pleasures of life, then, for the comforts, and later on for the actual necessities. He visioned parades of unemployed workingmen, demanding of capital a right to earn a living. But these very parades were policed by robots with blue-coats on who were very perfect in preserving order by mechanically-wielded batons. In his dream Ball saw one strike a poor woman on the head. The baby that she carried dropped out of her lifeless arms and would have fallen to the pavement, but Ball caught it with one hand and struck the robot in the face with the other. At once he was the center of an attack from a dozen machines who pounded him into insensibility. As he fell, he tried to save the child, crying in his terror, "You are killing civilization instead of the man."

But, instead of hitting the concrete, he floated into the air, and the child turned into a football. Seeing that he had on the old football armor of former days, he plunged madly through the gathering clouds to make a touchdown. Helping him were two of his former friends who had died. They whispered to him that he could save the world from electrified machinery if he only wanted to. So, with their help, he plunged through a rainbow, and, with the tattered fragments streaming over his shoulders, he made a touchdown at the great White Throne and awoke with a harsh cry of victory. Dazed, he made his way to the shower bath tried to recover his senses under its stinging spray. Then he partly dressed and sent for a bell-boy.

“Start this television apparatus and show me how it works,” he commanded. “Go slow and give me all the details and teach me just how I can call the different stations and find the programme in the paper. You telephone down to your Captain that you are going to be busy for the next few hours.”

And for the rest of the night he and the bellboy worked at the television machine till Ball was thoroughly familiar with it. It was daylight when they finally stopped. Immediately after breakfast Ball took a taxi for the sales office of Robots International. There his letters of introduction gave him a very satisfactory interview with the manager, who went into great detail as to the future of the company and just how their mechanical men would replace human labor. It ended with Ball buying ten million dollars worth of the capital stock. As he was leaving the office, the manager took him into a private room. A young lady simply but elegantly dressed was waiting there in a chair. The manager smiled.

“I understand you are a single man, Mr. Ball. We made a few of these dainty feminine robots just for men like you. I would be glad to give you this one. She can dance, has a good line of modern slang, can smoke and in the privacy of your hotel room can entertain you in many ways. It will take about a half hour to teach you how to handle her. Will you take her with you?”

Ball blushingly refused. He was a pronounced misogynist, and the manager could not have made a greater mistake than suggesting such a companion to such a man.

“That is just one more reason for fighting this dreadful mechanical age,” Ball growled as he rushed down to his taxi.

Ball Takes a Hand

FOR many years Ball had possessed a one track mind. When he started to hunt reptile eggs in central Asia, he kept on till he had made a thorough success of it and had presented practically all the great museums of the world with almost perfect specimens. He had gone into all his explorations with the same enthusiastic determination. This was not the first time that he had come into conflict with men who might become his enemies. Danger was no obstacle to him, in fact it simply made him more determined than ever to succeed.

His first ambition was to secure recognition as an important stockholder in Robots International. This he had easily done by the investment of only ten millions. Then he became interested in television stock and soon owned a large block, not nearly enough to give him the control, but sufficient to have him at once elected to a place on the Board of Directors. Then he secured the services of the best electrical engineers that his wealth could hire and told them to go to work with Rudolph Drach and build a real robot football team for the next season. He told them to spare no expense, but produce a team that could tear the Penn team to pieces.

For years the riches of Ball had been unrecognized. Now his large purchases of stock and his interest in mechanical sport made him an almost daily news feature. It was discovered among other things that he was the third richest man in the States, that he was a widower, that he was engaged to marry, for the first time, that winter; that he would never marry; that he had a wife and three children. To all of these rumors he gave the same reply; namely, that he was a misogynist. This attitude introduced the word for the first time to ninety-nine percent of New

York's population. As soon as its real meaning was understood, twenty-seven hundred unmarried belles of society determined to marry him before the year was over.

Meantime, Ball was busy. He was apparently fond of the limelight in the daytime, but in the evening he had a peculiar way of disappearing. It was commonly thought that he was leading a double life, but no one had the nerve to suggest such a thing to him. He was now occupying a twenty room apartment on Park Avenue, where he was waited on by a number of wonderful mechanical servants. The only exception to this was the cook. In the kitchen Ball had to acknowledge that the robot chef had been a failure, and this discovery was a great disappointment to him, as he knew that mechanical cooks would find a never failing sales market and thus greatly increase the value of his stock in Robots International.

It was an open secret that great days were ahead for this company in the manufacture and sale of robots for every line of work. Labor was united in denouncing the entire programme of so universally substituting machines for men. But, in spite of this opposition, the money men who controlled the new companies, such as Robots International, Television, and Radio, were determined to go on with their programme and perform the manual labor of the world with electrified machinery in the shape of men and women, who would be tireless, errorless and wageless.

In spite of his great activity in business, Ball found time to enter into sports with the enthusiasm which marked all of his efforts. He forced his election to the Rules Committee of Inter-Sectional Football, and on that body put through some new rules. One was that no matter how a robot was injured in a game, it had to continue in that game without mechanical attention. He also had the time of the game changed to one period of an hour's duration, rather than four quarters of fifteen minutes. A rule was passed that no human being, in the way of a coach or mechanic, was allowed on the field during the play. His constant statement and argument

was that if the robots were mechanically perfect, they should not need attention from human agencies.

All that winter there was an undercurrent of unrest seething in New York city. It was well known that Robots International was manufacturing robots on a large scale, but there were no actual sales, simply the placing of advanced orders. They announced in their advertisements that these orders would be filled the latter part of November of the current year, and gave as an explanation of this delay that it would take the large manufacturing plants that long to adjust their machinery so they could use the robots instead of human mechanics.

As the months passed, and more and more the laboring men saw by the handwriting on the wall that thousands and tens of thousands of their number would be thrown out of employment, the unrest grew. Ball had to bear the brunt of their abuse. Robots International was simply a company, but he, as a rich man and their largest stockholder, was a living, vivid personality that they could assail with their vituperations. Not only words, but bricks were hurled at him. The apartment house that he lived in was bombed.

Ball seemed to like it. He became verbose, and almost every week issued a statement to the newspapers, showing the different ways that the companies he was interested in would benefit mankind and the stockholders. For one thing, he proposed that a large percentage of the school teachers be discharged and a television sheet be placed in every room of the public schools. Then the lessons for the entire nation could be taught from the television broadcasting stations by a few expert teachers, and thus there would not only be an increase in the efficiency of the teaching and a very desirable uniformity of methods, but the cost of teaching would greatly diminish, and, thus, taxes could be lowered. Of course, this suggestion made Ball very unpopular with the pedagogues all over the nation and concentrated their rage on the Television Company. The general public was beginning to think and to wonder whether all this advancement in scientific knowledge was really an unmixed blessing.

In the late spring Ball bought ten thousand acres of land near the Canadian border, ran a high wire fence around it, protected the fence with armed guards and called it in the newspapers his Experimental Station. While not a word was said as to the kind of experiments that were to be performed there, there was no doubt in the minds of the common people that in every way they would work harm to the laborer. At this time Ball was the best hated man in the United States.

His money and hired scientists had worked wonders with the robot football team of the New York University, and that fall they won all of the early games. It is true that they won them by rather narrow margins, because the meeting of two robots in the field was rather like an immovable force, meeting an irresistible body, but, still, the perfection of the University robots and the skilled handling of the governing machines by the eleven well trained collegians always managed to win the victory for New York. Meantime, all eyes were trained on the New York-Pennsylvania game, which was dated for the Saturday before Thanksgiving. As a singular fact, the new laboring robots were to be placed in operation the following Monday. Twenty-five thousand had been distributed, and each took the place of three men, working eight hours a day, for these robots were tireless, and a twenty-four hour day had been arranged for their activities.

CHAPTER IV - A Surprise

THE football game had been well advertised. Over sixty million persons were going to see it on the various television sheets of the nation. That Saturday morning New York city saw its worst riot since the Draft riots of the Civil War. Peace was finally secured only after the fire department had thoroughly wetted the maddened throng.

The most peaceful part of the entire city was the football field; there the usual few persons were in attendance. The two teams of robots were given their final oiling and electrical testing, while the eleven men on each side oiled their fingers and nervously practiced striking

the keys of the machines in front of them. Coach Haggard and Chief Electrician Drach sat near them, with Ball between the Coach and the players. There were probably five spectators on the seats that had been built to accommodate eighty thousand.

Then the game began. It was to go on, according to the new rules, for one hour, and during that time only the robots were allowed on the gridiron.

Almost immediately a whispering arose among the eleven little men who were pounding the electrical keys for the honor of New York. Their robots were playing good ball, but they were not playing the kind of ball that they were being directed to play by the eleven players in the grandstand. They appealed to the Coach and then to the Chief Electrician, both of whom were powerless to help them.

“The only thing I can see to it,” said Drach, swearing, “is that in some way some one has cut off our control and substituted a new control of his own. Those machines cannot think; they have to be directed in some way, and if they are not reacting to your commands, then someone else is doing it. It is entirely possible that Penn is directing them and is playing both teams from her switchboards. If that is the case, we are in for the worst beating of our lives. What do you thing about it, Ball?”

The great man simply yawned.

“Our fellows seem to be doing pretty well so far!. Suppose we let them alone and see what happens. Of course, you fellows had better pretend to work at your boards, because we do not want the Penn folks to think that we are puzzled. Look at that New York man go through for a touchdown! Who ever it is that is directing our robots is our friend, or he would not have worked for that score.”

And that was just the first score. The New York robots played with a skill and energy and fire that had never been seen before in any robot team. They ran circles around the Penn men, stood them on their heads, tricked them in every way, threw the ball, carried it, kicked it

till the game ceased to be a contest and became a riot of despair for the Penn players. It was not that the Penn robots did not play well, but the fact that the New York robots played so much better.

When the game was half over, a thin stream of New York Undergraduates began to trickle through the gates, and gradually there were enough present to start cheering. They explained excitedly that the television apparatus had failed to work, no one was able to see the game in the frat or club houses, so, they had decided to come down to the field to see for themselves how the game was really going.

Finally, the game came to an end. The score of one hundred and sixty to nothing only told part of the story. The Penn team had been outclassed in every department of the playing, and the best of the whole game was the fact that by the end of it over a thousand students were there to cheer the victors.

As the game progressed, Drach became more and more silent. He looked sidewise at Ball, but that worthy retained his placid appearance. When the game was nearly over, Drach touched Ball on the shoulder.

“Let’s go to the machine room and look those robots over. They played a wonderful game. I want to see if they are hurt any,” he said.

And, so, the two old men were in the machine room when the game ended and the robots trotted in off the field. They entered the room, an old trainer locked the door and then the eleven of them gathered around Ball, and, with interlocked arms and swaying bodies, gave a final cheer for the dear old University. Ball just stood there with the tears streaming down his cheeks. Finally he whispered.

“Well played, my dear boys! You did not forget a single lesson we taught you all during that summer in the Adirondacks. You won the game, but you did more than that. You have helped to establish for all time the supremacy of man over machinery. There will be no more

robots on the football field. Next year there will be eighty thousand spectators out to see a real game between real men. Drach, how do you like the way my boys played? I had over twenty old football players help me train them, and, considering the fact that we did not have much chance to practice, and that none of the boys had ever seen a real game, I think they did rather well.”

The Chief Electrician did not know whether to laugh or to cry.

“You have run me out of a job, Ball. There will be no work for me at the University from now on.”

“You should worry. I’ll give you double your salary if you will work for me from now on.”

“But how about the television and the radio, Ball?” asked the puzzled master mechanic. “I can understand your substituting human players for machines, but what did you do to the wireless? Or was that just a coincidence? A freak of the atmosphere?”

Ball smiled.

“You will have to guess at that for a while. Too many folks are around here to discuss important affairs like television. Suppose you come and take supper with the team. I am entertaining them tonight, and, perhaps, we can talk after they fill up and go to bed. I suppose we shall have to fight the reporters on the way out. You and Haggard can do the talking. Of course, you had better put all the blame on me. It was not very sporting to treat the Penn team that way, but I wanted to give the nation a startling object lesson, and when the papers feature it I guess the whole world will start thinking.”

What Happened

THE next day, Sunday, was one long to be remembered in the history of the nation. The fact that eleven men had won a decisive victory over eleven machines was only a part of

the news that almost glutted the capacity of the Sunday editions. People bought papers who had not done so for several years, as the news broadcasting stations were not working. Something had happened to the radio; not one of the machines in the entire nation was working and none of the experts knew why. That in itself was news. Then the television broadcasting stations were out of commission, and that was more news. People had to depend for their news on the papers and content themselves with the telegraph and the telephone. That Saturday evening and Sunday they had to be entertained and the few theaters still open did a record business.

Monday came, a beautiful day in Indian Summer. The calm of the season was felt even in busy New York. No one knew what was going to happen, and, yet, everyone felt that this quiet might be the lull before a deadly storm. Labor crouched, ready to spring in its last struggle against machinery. The twenty-five thousand robots had been delivered, they had been installed, the men whom they replaced had been discharged — and then — not a single robot started to work.

For some reason they were unable to even begin.

They were beautiful pieces of machinery, but absolutely lifeless.

Every day of idleness meant a huge loss to the manufacturers.

In despair, they called back their human laborers, increased their wages, lessened their hours of work, and hurled despairing questions at the owners of Robots International.

Those questions were never answered. All that the scientists could say was that the ethereal waves which made television, radio and robots possible were no longer at the control and the beck and call of mankind. Something had happened to them, not necessarily to destroy them, but to twist or convert them in some way, so that they no longer were capable of serving the caprices of mankind.

The next day, Tuesday, there was a joint meeting of all the Boards of Directors of the companies concerned in the gigantic change in the affairs of society. The meeting was called at the request of Ed Ball, but till he rose to address the Directors no one realized how large a part he had taken in the sudden cessation of television and the radio and other forms of activities, dependent on the wireless waves. Calling for attention, Ball stood up and told them all about it.

“Gentlemen,” he began, “when I returned to America a year ago, I little realized the changes in human life that were the direct result of your commercializing the inventions of science. I deliberately invested over thirty million in your various companies so I could gain a correct insight into the entire problem. I found that you had given to the world some blessings, but they were all tangled up with rather definite curses. You had made possible a vast extension of the use of the radio, television and the wireless control of machinery, which you dressed in the form of men and women and called robots. With these robots, you threatened the very life of American labor. You destroyed the best there was in sport, took away the pleasure of attending amusement in a mass, and, by placing all entertainments in the home, you turned mankind into a selfish, introverted, anti-social animal, who cared for little save his own entertainment. You did this to make money — there was little of the altruistic, the love of humanity, in your efforts to popularize these scientific discoveries.

“I prepared to teach the world a lesson by thrashing a football team of robots with a team of wide-awake young Americans. That was easy for me, because I was a former football star. It was different with the wireless waves of ether. Finally, I located an old inventor who saw this whole problem the same as I saw it. He was willing to work on the control of the wireless waves, and, finally, with my encouragement and cash he invented a little electrical machine, not much to look at, but rather gigantic in its power. Press one button and all these waves you use are dislocated, bent in some way so you cannot use them. Press another button

and they are all returned to their former usefulness. We pressed one button when the game started the other day, and you saw what happened.

“This old gentleman who is sitting so quietly at my right is Mr. Henry Scherer, the brilliant inventor, who happened to hit on this new power. When he arrives at his home tomorrow he will press the other button and restore to you all your former control of the air. Whether he will ever press that button again will depend on yourselves. Your activities will be under the observation of a group of humanitarians, men who love their fellow man, and these men will be in my employ. If they think that your work is harmful to mankind, they will first warn you and then will stop you by notifying Mr. Scherer, who will press the appropriate button, Mankind must never again be threatened by the crushing weight of machinery. The robot must be the servant and not the master.”

The next month Ed Ball sailed for Australia, leaving Scherer to protect American labor against any further onslaughts of the robot.