

The Magazine of Prophetic Fiction

WONDER Stories

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ON THE COVER THIS MONTH

taken from Arthur G. Stangland's "Fatal Equation" we see the mathematician Macmillan escaping from his accusers by stepping into the time vortex. Almost instantly he vanishes.

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(Illustration by Paul)

The dust was so fine it was impossible to walk without slipping. They all walked with heads bundled in gauze, and each with his hands on another's shoulders.

GIANT IN THE EARTH

By MORRISON COLLADAY

● The reporters gave Gary and me credit for discovering the cause of the mysterious epidemic which was devastating the thinly settled mountain region of North Carolina. Probably it made a good newspaper story to have two medical students succeed where the leading physicians and scientists of the nation had failed.

As a matter of fact, I had nothing to do with it. It merely happened that I was with Gary on the Sunday afternoon tramp when the sight of the destroyed vegetation in the mountain valleys suggested to him the idea which put the United States Public Health authorities on the track of the cause of the epidemic.

The epidemic seems comparatively unimportant now, but that is only because it was less spectacular than what happened later. If the authorities had known at the beginning what it indicated, the outbreak of the disease would have been a signal for the immediate evacuation of that part of the country and the consequent avoidance of a terrific loss of life.

Nobody remembers when the first cases of the mysterious disease were noticed. A few patients were brought to the Asheville hospitals from the surrounding mountain valleys with a peculiar skin eruption over their entire bodies, almost like severe sunburn. Within a few days all had died and as more and more cases came to Asheville, the local health authorities became alarmed. There was no question that the city was faced with the possibility of a serious epidemic.

The North Carolina health department immediately established a quarantine of the affected regions, and several of the great summer hotels in the mountains were converted into hospitals. Soon the local physicians were overwhelmed with the extra work and called for help from other parts of the country. Gary and I were seniors in Medical school and jumped at the chance to get practical experience in fighting an epidemic, especially as announcement was made at this time that the United States Department of Public Health was about to take over the job from the State and city health authorities.

When we reached Asheville we were sent on to Black Mountain, where a resort hotel was being converted into a hospital to care for the constantly increasing number of victims of the disease. It was a sufficiently unpleasant experience, even for medical students who are fairly hardened young men. Men, women and children were brought in in droves, looking as if they had been severely burned by the sun and running a temperature. The fever increased, they became delirious, their flesh began to slough away and in seventy-two hours they were dead.

This was the invariable course of the disease and nothing the physicians did had any effect. The extem-

● There are untamed forces within the earth, of which we know nothing. Only when earthquakes rock nations, and volcanoes smother cities under hails of fire and lava, do we appreciate the power of the "giants in the earth."

Mr. Colladay, in his usual realistic manner, has chosen a theme from the many possible showing what might happen should such a slumbering giant force awaken, and begin to take an interest in our earthly affairs.

We don't want to give away his neat story by telling what that force is, but we warrant that his explanation of it is convincing and plausible. We hope, however, that we never will be called upon to face the crisis that he so vividly pictures.

porized graveyard in the soft earth at the foot of the mountain grew by leaps and bounds, but still the number of our patients increased; it looked as if the surrounding territory would be entirely depopulated.

One of the curious things about the disease that puzzled everyone investigating it was that not a single physician or attendant in the hospitals had been attacked. This fact, the explanation of which was so simple when the truth was known, was regarded as incredible then. Each day we were examined with the expectation that traces of the disease would be found in some of us.

When we were all found well, it was taken to mean that the period of incubation was longer than expected. Naturally the doctors, attendants and nurses were careful, but we all felt sure that some of us would become victims and we went about our work a good deal like soldiers in a battle.

● The story of that Sunday afternoon walk when Gary and I found the valleys with the blasted vegetation was good newspaper stuff and the reporters gave their imaginations full sway. As a matter of fact, nothing sensational occurred, in spite of the newspaper accounts, and I doubt that we were ever in serious danger. The walk derives its only importance from what it led to.

For Gary and me it started off like any other climb, through the mountains. We not only had no idea of hunting for the cause of the epidemic, but we were trying for a few hours to forget that it existed. We had tramped for several hours before the blighted vegetation of the valleys attracted the attention of either of us. Most of the time we kept to the ridges of the mountains, but the blackened lowlands were always plainly visible.

Finally as we were crossing a narrow valley to reach the next ridge, Gary stopped to examine a thicket of shrivelled underbrush.

"What's happened to all the green things?" he asked. "Looks as if there'd been a heavy frost."

I laughed. "Frost in July? It's funny, though," I added, looking around. "There isn't a green leaf until you get a thousand feet up in the mountains. See that line up there?"

Gary gave one look and then he seized my arm. "Come on. We're getting out of here."

"What's the hurry?" I protested.

"Don't waste time talking," he answered, and I noticed his face was white. He plunged up the side of the mountain and I followed. When we reached the limit of the killed vegetation we saw there was a space of a few feet where the plants were yellow and dying. Above was the flourishing luxuriant green of a midsummer Carolina mountainside.

We had not wasted any time climbing the mountain, and I threw myself on a patch of grass to get my breath. Gary was staring down into the valley which looked as if fire had swept through it.

"Pretty near all our patients come from valleys like this, don't they?" he asked finally.

"I guess so," I answered. "They can't live on the mountains very well. Not much water and they'd freeze to death in the winter. Besides, they've got to live where they can grow things."

He nodded. "That's about what I figured, though I don't know the country as well as you do. I notice all the hospitals are pretty well up in the mountains."

"That's because the government is using resort hotels for hospitals. Tourists always want a view when they come to the mountains." A sudden thought struck me. "You mean the same thing that blighted the vegetation might have caused the epidemic?" I asked. "That's the reason we hurried up here?"

"Suppose it isn't an epidemic at all," he said slowly. "Something killed everything in the valley down there. The cases come from places like that. Although the disease is virulent, not a single doctor or nurse has contracted it. They're all living up in the mountains. It looks to me as if it might be a poison of some kind that's killing off the natives."

"Where could it come from?" I asked. "Besides, I don't believe there is any poison that would kill people just that way. If they didn't all die immediately, some of them would get better. None of these cases do."

"What about radon?" asked Gary.

"Radium gas? I suppose it might, if it was concentrated enough. Old Ames in chemistry lab used to say a cubic centimeter collected in a test tube would melt the tube. Yes, it's a beautiful theory," I went on. "There are only two objections to it. There isn't enough radium in the world to kill off the vegetation in this one valley. The other difficulty is there isn't any radium in this part of the country."

Gary nodded. "I know. Nothing east of Colorado. But suppose that's all wrong. Suppose there's radium under these valleys now, even if there wasn't any before."

"It doesn't sound sensible to me," I said.

"Maybe. But it won't do any harm to be sure. Some of these public health men are sure to have electroscopes. I'm going to see Grant tonight."

Physicians In Conference

• The local and state health departments had broken down so badly under the strain of fighting the mysterious epidemic that the United States Department of Health

had assumed practically full control of the affected regions some time before. Assistant Surgeon-General Grant, a thoroughly trained epidemiologist who had had a wide experience both as a research worker and executive, was in charge. He reached Asheville with a full staff of medical men, sanitary chemists, sanitary biologists and sanitary engineers. He made his headquarters at Grove Park Inn, which the government had commandeered and was using as an isolation hospital.

Here late that night Gary and I found him. He had just gone to bed but we sent word that our business was too important to wait until morning.

I let Gary do the talking. When he finished, Dr. Grant gazed at us in frowning thought. Then he offered the same objections I had.

"I don't say it's radium," insisted Gary. "All I'm suggesting is that if these patients had been exposed to enough radium, it would account for what's happening to them. It might be some other radioactive gas that has been released in these valleys."

"You boys wait for me in my office downstairs," said Dr. Grant. "I'll be dressed in ten minutes."

A good deal of the newspaper publicity Gary and I got was propaganda frankly put out by Dr. Grant to justify his orders for the complete evacuation of the city of Asheville and a large part of western North Carolina. There is no limit within reason to the power of the public health authorities in an epidemic. They can take any measures they think best to prevent its spread.

When the public health department engineers found radon in fairly high concentration in the low-lying valleys, Dr. Grant acted with military promptness, in spite of the protests of the Asheville authorities, backed by the local physicians. The average physician is a conservative person, to characterize him mildly. The history of medicine shows that every new idea has been fought bitterly. The theory that our patients were dying as the result of exposure to radon was no exception.

I remember what occurred at a conference of doctors called by Dr. Grant the evening following our visit to him. During the day he had satisfied himself that Gary had accidentally stumbled upon the cause of the disease that the scientists of the department had been desperately seeking.

The physicians were assembled in one of the parlors of Grove Park Inn. Dr. Grant presented the evidence he had gathered and announced that the evacuation of Asheville would be ordered the following day as a protective measure. There were immediate protests from a number of men present. One of the leading doctors of Asheville was particularly indignant. I have no desire to hold him up to ridicule, so I shall call him Dr. Brown, though that is not his name.

When Dr. Grant had finished talking, Dr. Brown got pompously to his feet. "I think I can speak for the Medical Society of Buncombe County when I say that they will oppose any effort to evacuate the city of Asheville. We are practical men and we don't take much stock in half-baked theories. Even if what you say these young men discovered is true, it has no practical interest, so far as I can see.

"If there's radon or whatever-you-call-it coming from these mountains, I guess we'll have to let it keep on coming. If people can't live in these valleys, there's a lot more of North Carolina where they can live. There is

certainly no reason for doing such a foolish and unheard-of thing as driving all the people in a city of sixty thousand from their homes."

"Ah, but that's just it, Dr. Brown," replied Dr. Grant. "How do we know that the rest of this section won't be affected as these isolated valleys have been? Whatever is causing the epidemic, it is certainly spreading. This week we have received cases from the outskirts of Asheville. Remember we have a mortality of one hundred percent. Think what it means if the disease actually attacks Asheville!"

Dr. Brown reddened angrily. "You government men are always inclined to exaggerate things. I have a communication here from the Chamber of Commerce, protesting about the interviews you have given out. You have practically killed our tourist traffic and caused our merchants and hotel keepers great loss. After all, things aren't as serious as you make out. Before we get through, we'll doubtless find the so-called epidemic is a deficiency disease, probably a form of pellagra."

CHAPTER II "Evacuate The City!"

● Before relating the controversy between the United States Department of Public Health and the North Carolina authorities, it will be well to outline the conclusions of the department scientists, which were the justification for the stern and drastic control measures put into effect by Dr. Grant.

The reason scientists did not discover what was really happening in western North Carolina until Gary and I stumbled on the devastated valleys, was astonishingly simple. Radium had always been found associated with uranium in proportion of one part radium to three million parts of uranium by weight. No trace of uranium had been discovered in the eastern United States.

If the curious epidemic had started in Colorado where the carnotite ore of Paradise Valley was the chief American source of radium, physicians would probably have become suspicious as to its real cause immediately.

It was true that a man named Holzberg out in California had recently extracted radon, radium gas, from granite rock with an electrical furnace, but no one realized until after the catastrophe of July thirtieth that this work had other than scientific interest.

Until this occurrence practically settled the question, scientists were divided into two schools differing as to the amount and location of radioactive elements in the earth's mass. One school believed that they existed in comparatively limited quantity in the earth's crust. They pointed out that radium is continually emitting heat at the rate of 132 gram calories per hour per gram of radium. That is, it would heat its own weight of water through 100 degrees C. per hour. Therefore the heat of the earth would be maintained if radium existed only to four parts in one hundred million, million. It followed in their opinion that the amount of radium or other radioactive matter in the earth could not be greater than 270,000,000 tons or the earth would be growing hotter.

The second school of scientists did not dispute these figures, but they believed the conclusions drawn from them were false. They maintained that radioactive substances occur in great quantities through the mass of the earth and that the heat of the earth periodically increases until something occurs which acts as a safety valve. They

offered as evidence the explosion of Krakatao, the Katmai eruption in 1912 and the South American eruption of 1932. They called attention to the fact that similar catastrophes may occur in any part of the world, including the Antarctic continent. If they occur in sparsely settled parts of the earth they attract little attention, as witness the blowing up of one of the Aleutian Islands in 1930, about which ninety-nine persons out of a hundred have never heard.

The reports of the government scientists made immediate action by Dr. Grant imperative. They not only found radon in all the valleys from which the epidemic patients came, but they found that instead of diffusing, its concentration was becoming greater and was rapidly covering new territory. As the period of activity of radon is very short, this indicated the presence of radium in quantities never dreamed of and of which there had been no previous indication.

How this was possible, they made no attempt to explain. They reported conditions as they found them and Dr. Grant acted without attempting any theoretical justification.

The newspapers were ordered to publish the evacuation orders, and it became evident immediately that there was going to be trouble. One of the Asheville papers made no comment on the order, but the other published a violent attack on what it called "the illegal and arbitrary acts" of the department of public health.

It became evident within twenty-four hours that it was not going to be possible to evacuate the population of the city peaceably. The governor of North Carolina was urged to declare martial law but refused. Then the alarming situation was brought to the attention of the President of the United States by the Surgeon General in Washington, after a long telephone conversation with Assistant Surgeon General Grant. I imagine that the matter was put quite strongly, because results were immediate. By noon of the next day all of western North Carolina and portions of South Carolina, Georgia and Tennessee were placed under military rule, thus establishing a precedent that will doubtless be useful if similar situations should arise in the future.

● There was a general reorganization of the quarantined area and most of the volunteer workers were dismissed. Gary and I were ordered to Asheville to help in the tremendous job of moving without delay sixty thousand men, women and children from their homes to other parts of the country.

I am not going to say much about this work, which was largely routine as far as we were concerned but which kept us busy fourteen hours a day for the next few weeks. The problem was complicated by the reluctance of people in other parts of the country to receive the evacuated ones, especially after a few cases of the scourge developed among the refugees. The discovery that the scourge was not a disease in the ordinary sense of the word but the effect of exposure to radium emanation made not the slightest impression on the average unscientific person. There is nothing to be gained by dwelling on this feature of the catastrophe, which resulted in great numbers of helpless women and children being isolated outside towns without food or shelter.

As the evacuation proceeded the number of new cases dropped. Antagonistic elements took advantage of this apparent improvement in the situation to make savage

attacks on Dr. Grant and the public health service. If Congress had been in session, the position of the government officials would have been very unpleasant.

As it was, with the President strongly supporting the health authorities, the opposition could not do much except talk. However, the attitude of the officials of the four states involved encouraged armed rebellion by some elements of the population who had been removed and now attempted to return to their homes. A few soldiers were injured and more civilians. The situation was becoming aggravated and there would undoubtedly have been considerable bloodshed if it had not been for the events of July thirtieth.

By that time the white population of Asheville had been largely removed. A great deal of difficulty was experienced in finding localities to which it was possible to transfer the large numbers of negro inhabitants of the city. As a result they were the greatest sufferers in the catastrophe.

Gary and I had accompanied a trainload of refugees as far as Greenville, South Carolina, on the morning of July thirtieth and were on our way back to Asheville. The train was pretty well filled with relief workers and army officers who were returning to their jobs.

We had just passed Hendersonville when the first shock occurred. Gary and I were sitting on the observation platform at the time. There has been a good deal of discussion since as to whether the volcanic eruption or the earthquake came first, and what I have to say will not throw any new light on the matter. In fact, it is a little difficult to describe exactly what happened.

The train was running as usual at a comparatively low speed through the mountains when suddenly there was a roar that seemed to drive air under great pressure into my ears. That's the only way I can describe the sensation, though I don't suppose there was any actual increase of air pressure at the distance we were from the scene of the explosion. Besides, there is no reason to suppose that any increased air pressure as the result of the explosion would travel at the identical rate of sound waves, and therefore reach an individual at a distance simultaneously with the noise of the explosion. That being the case, Gary and I decided that the effect of which we were both conscious must have been subjective.

The train seemed to strike an obstruction, though no evidence was found afterward that it had done so. The engine left the rails, carrying with it the tender and baggage car, and plunged over the embankment to the ravine below. Fortunately the coupling between the first and second cars broke loose, or this account would not have been written. The cars remaining on the track swayed sickeningly from side to side and came to a stop.

All this occurred in a fraction of time so small that Gary and I, thrown from our chairs on the platform, had hardly any consciousness of duration. One instant we were sitting there calmly smoking our pipes and the next we were picking ourselves up while the events I have described belonged to the past as a flash of lightning does.

The cars emptied themselves of their terrified passengers who crowded to the edge of the ravine over which the engine had disappeared. Nothing was visible in the darkness below except a spot of light like a bonfire.

"Not much chance for the poor devils," said Gary.

I suppose at least fifteen seconds elapsed after the tragedy, possibly longer, before any of us became aware

of the terrific phenomena of the eruption. I have no idea how to explain this. At the instant the upper half of Mount Mitchell was blown off, the entire northern sky became a mass of livid purplish flame. Nothing like it has taken place in historic times except the explosion of Krakatao.

The explosion was heard a thousand miles away and the light in the sky was visible from New York. Yet the group of men and women who tumbled out of the cars only a few miles away from Mount Mitchell, for at least fifteen seconds were aware only of the fact that their train had been wrecked and they had escaped death.

● The eruption has been described so often by eye-witnesses that I do not believe I have much that is new to tell, though I think comparatively few people survived who were as near the actual scene as we were. Why we survived when many victims were farther away than we from the mountain has been a subject of much discussion and has never been satisfactorily settled. In the actual zone of destruction the victims were killed by the wave of heat which swept down on the surrounding valleys and shriveled every living thing in an instant. Many thousands at more distant points were instantly killed by a blanket of poisonous gas. Still others were apparently killed by the concussion of the explosion—at least they were dead with no trace of visible injury.

It may have been the configuration of the valley through which the railroad ran that saved us, though that theory is advanced simply because no one has thought of a more plausible one. At any rate, except for the engineer, fireman and baggage men who were carried down into the ravine, the passengers on the train were alive and uninjured. We now gazed speechless and awe-stricken and nearly blinded into the sky where flames like rushing clouds in a hurricane were roaring from a white-hot furnace which seemed to be consuming the mountains to the north.

Though the entire sky appeared to be filled with flames, we felt no sensation of heat. This was contrary to the experience of other survivors who were farther from the scene of the eruption than we were. It has been since suggested by scientists that the effect of flames overhead was caused by waves of incandescent gas which traveled great distances before the reduction of temperature caused them to lose their luminosity.

Our situation was not pleasant, marooned in the valley with no knowledge of what had happened a few miles away or what might befall us in the next few minutes. A hasty council of war was held and the ranking army officer aboard the train, who happened to be the colonel of a regiment of South Carolina militia, was given command of the group.

Colonel Gooden proved himself a good executive and within half an hour a handcar discovered by the roadbed had started back toward Spartanburg in search of an engine. There was nothing for the rest of us to do except wait and watch what was probably the most gorgeous fireworks display ever seen.

It was growing light in the east when we saw the headlight of a locomotive approaching. It proved to be a freight engine which our handcar expedition had encountered some distance down the line.

It had been drawing a heavy train and was far enough away from the explosion so it was not derailed. The en-

gineer realized that there was something seriously wrong ahead and had stopped until he got further orders. There was a signal station half a mile away, but the telegraph operator was on duty only during the day. None of the train crew knew anything about telegraphy, so they welcomed our handcar men with open arms when they found one of them, Lieutenant Palmer, was an army signal corps man. He quickly got into communication with the railroad divisional headquarters, which had been making wild efforts to get a response to messages from the towns in the region of the catastrophe. The commercial telegraph services had gone dead at the moment of the explosion. Lieutenant Palmer told the little he knew and then asked that the engineer of the freight engine be instructed to proceed to our train.

There was no difficulty about that, but the question then arose as to whether the passengers wanted to return to Spartanburg, the nearest railroad junction outside the immediate danger zone, or whether they would want to proceed, if that were possible, to Asheville.

Lieutenant Palmer was unable to answer this question, and it was decided to send a rescue train for those who wanted to return and for the freight engine to push the cars of our train as near the danger zone as it was possible to approach.

As it happened, everyone on our train decided to go on. A hasty vote was taken on the arrival of the freight engine and I suppose the few who would have preferred to return to safety hated to announce the fact in view of the attitude of the majority.

It was broad daylight when the freight engine began to push our train forward at a speed no faster than a walk. There was every likelihood that the tracks had been spread or torn up by the force of the earthquake, and the train crew was not taking any chances. Two of them were stationed on the front platform of the forward coach, giving the track ahead the keenest scrutiny and ready at any suspicious appearance to pull the signal cord.

The rest of us had to be content with putting our heads out of the windows to watch the mountains in the north blazing like a gigantic funeral pyre for the world.

We stopped ten times in the first five miles because of twisted rails, ties torn up or rock slides. The train crew would run ahead with shovels and sledges. After fifteen minutes or half an hour they would climb back aboard and we would begin again to creep slowly forward.

Shortly after noon the train approached the Asheville station, which is a mile or a mile and a half below the town. We poured out of the cars, surprised and delighted that the city had not been destroyed. We realized at once, however, that there was something wrong. There was not a person in sight and not a sound to be heard.

It was surprising how little damage the earthquake or shock of the explosion had done to the city. The skyscrapers had suffered most, their walls having been shaken off, leaving their gaunt steel frames still intact. We had become more or less used to the wall of solid flame in the north and the incandescent clouds racing overhead. As I describe the scene I am aware that it doesn't seem the sort of thing to which anyone could become accustomed, but we had been watching it for well over sixteen hours. I think most of us had expected to find nothing but burned-over ruins of a city, but the flames had apparently not reached Asheville, even at the moment of the explosion.

CHAPTER III

The Dead City

● Still we were prepared for tragedy long before we reached the main business section of the city. I suppose, including the relief workers and the citizens who had not been evacuated, there must have been at least ten thousand persons still in the city when the catastrophe occurred. As we tramped in a long straggling line up the hill, not a soul greeted us.

Gary and I were near the head of the procession with Colonel Gooden whose face was becoming more and more grim as we advanced.

"Looks bad, looks bad," he muttered, half to himself. He turned to us. "Take a look in some of these houses, boys, and see what you find. Break in if you have to."

Off to the left was a group of negro shacks from which we knew the inhabitants had not been removed up to the time we had left the city the previous day.

The front door of the first one we approached was unlocked. I pushed it open. There was only one room with a lean-to in the rear used as a kitchen. Two women and a man were in the shack. They didn't look up or move when I opened the door. After a moment I went over and touched the face of one of the women. I knew before, but I wanted to make sure.

We looked in half a dozen more of the houses and found men, women and children. They had apparently died in an instant, and though the bodies were not distorted in any way, there was something horribly eerie about the rigid forms frozen into immobility at whatever they were doing.

We caught up with Colonel Gooden a couple of blocks farther on. He eyed us keenly.

"Still there?" he asked.

I nodded.

"Need doctors?"

I shook my head, still not entirely trusting my voice. A good many of my friends had been in the city yesterday.

"Gas!" exclaimed Colonel Gooden. "That's what killed 'em in Martinique." He turned to Lieutenant Palmer who had been listening. "You've got to get the news out, Palmer. God, what a calamity! Hundreds of army officers and doctors wiped out in an instant, not to speak of the others."

"Maybe it won't be as bad as that, colonel," suggested Lieutenant Palmer.

"Don't fool yourself. We won't find a human being alive. You mark my words."

A minute or two later Lieutenant Palmer handed Colonel Gooden a strip of tape from the machine.

"Who are you? Where did you come from? Who is commanding officer? Emory?"

"Who the devil is Emory?" snapped Colonel Gooden.

"War department," answered Lieutenant Palmer. "Don't mind him. I'll explain matters."

"All right," growled Colonel Gooden. "Tell 'em we're in a damn ticklish position here ourselves."

As Lieutenant Palmer turned back to the transmitter, Colonel Gooden, who had been glancing anxiously out of the window at a darkening sky, went to the street. Gary and I followed him.

There was a distinct change in the appearance of the sky. The great rampart of fire still blazed in the north, but the flame-like clouds racing overhead perceptibly

darkened. We could get an occasional glimpse of the sun, but instead of being its natural color it was a bright blue and the light that came from it seemed to be blue. So far there had been no sign of ashes. They almost invariably accompany volcanic eruptions from the beginning, but if there had been any, they were carried in other directions.

Now the darkening of the sky made us think there was to be a new development, particularly as violent electrical discharges began about the time we reached the street. A moment later a light gray dust as fine as flour began to sift down from the air. At first there wasn't much of it, but soon it began to fall faster.

● Even the buildings across the street we now saw through a heavy gray fog. The glare of the flaming mountains in the north became a dull purplish red and instead of extending across the horizon, was concentrated in four columns of fire from which rolled unbelievable clouds of black smoke. Something in the volcanic dust strained out enough light rays so that what was just a glare of flame at which it was impossible to look steadily resolved itself into a picture which doubtless represented reality.

Colonel Gooden rushed back into the telegraph office.

"Tell Washington it's getting worse here," he instructed Lieutenant Palmer. "Dust is beginning to fall. Four volcanoes in violent eruption in the north. Useless to try to get nearer. Probably dangerous to stay in Asheville. . . . Get that off," he ordered. He turned to Gary and me. "Know where the rest of our party is?"

"Part of them at the General Hospital," I answered, "and the rest of them at Army Headquarters across the square."

"Tie handkerchiefs over your noses and go after 'em. Keep together, you two, don't get separated. Bring 'em here right away, all of 'em."

The dust was falling so fast that we could barely see across the street. Already it was several inches deep under foot. Even with handkerchiefs tied around our heads it was hard to breathe. Nothing was visible overhead now, and the eruption in the north had become just a faint red glare.

The dust was so fine and soft that it was impossible to walk rapidly without slipping. Gary spied some messengers' bicycles in a rack and suggested using them. The dust didn't affect the bicycles and we could have made good time if we had been able to see where we were going. As it was, we had to follow the curb slowly, even though there wasn't any traffic to interrupt us.

The doctors and nurses who had gone to the hospital were gathered on the first floor in anxious consultation when we arrived. They had found no one alive and they were beginning to get alarmed for their own safety. We delivered the colonel's message and then led the way to the telegraph office, walking our bicycles. By this time it was almost entirely dark outdoors. The others followed with their heads bundled up in gauze and each with his hands on another's shoulders. The track of our bicycles was still visible as a depression in the rapidly deepening dust.

Some of the women were pretty nearly all in by the time we reached the telegraph office, and the men weren't very spry. Taking heavy physical exercise while you're breathing through a towel isn't anybody's idea of fun who has ever tried it.

Gary and I didn't wait to find out what orders had come from Washington, but started off again for Army Headquarters. This was a hotel which had been taken over by the government and was in the opposite direction from the hospital and slightly down hill. We were able to let our bicycles coast most of the way, but when we came to a level stretch, the dust had become so deep we had to abandon them.

We staggered into the lobby of the hotel almost smothered. The handkerchiefs had become so clogged with dust that it was almost impossible to breathe through them. One of the medical officers quickly mixed up something which he made us drink. I don't know what it was, but it made me feel all right again.

The officers gathered in the lobby of the hotel looked dubious when I told them that Colonel Gooden wanted them to come to the telegraph office.

"What does he want us to do when we get there?" one of them asked.

"He didn't say. He's waiting orders from Washington, I think."

"I don't believe we can make it," said the officer, glancing through a window at the falling dust.

"No use staying here," said the man who had given us the medicine. "It's getting worse instead of better. What about trying gas masks?"

That suggestion was what saved all of us. It was just a chance that they would work. They had never been intended to strain out dust and it seemed likely that they would clog up and be worse than useless. However, it was our only chance. We sallied out looking like immense beetles and carrying enough extra masks to supply the people at the telegraph office.

● It was pretty unpleasant the first few minutes, wondering whether we were going to smother to death or not. Then we found we could breathe fairly well—not comfortably, of course, but a lot better than we had any reason to expect.

Again Gary and I took the lead and this time we got lost going across the square and couldn't find the street which led to the telegraph office. It doesn't sound reasonable to us now, but we went entirely around that square twice without seeing a street that looked like the right one. It is impossible to convey an idea of how dark it is when practically all light is blotted out. The officers had powerful flashlights, but they showed only a rain of falling dust.

Finally I stumbled over something and went sprawling. It proved to be one of the bicycles we had abandoned, now covered six inches deep. That showed us where we were, and not long afterward we reached the telegraph office.

The people there would have been glad to see us anyway, but the gas masks we brought gave them an additional ray of hope. Things did not look very bright for any of us about that time. Washington had instructed Colonel Gooden to evacuate the city, but that was easier said than done. Our train with the freight engine had been ordered to wait at the station, but getting there from the city proper was a problem. Walking that distance even with the gas masks would be impossible unless the dust stopped falling. We stood around while Lieutenant Palmer was getting more and more urgent messages from the war department. Finally he came over to where Colonel Gooden was talking to a group of regular army officers.

"Some guy at the war department just made a suggestion that might work. He says there must be enough cars parked in the streets to carry us all to the station."

"We couldn't go a block without the carburetors being choked with dust," someone objected.

"He knows that," answered Lieutenant Palmer, "but he says it's down hill most of the way to the station. He says we can coast after we get started."

We had our choice of dozens of cars that had been left in the streets by their owners. Some of them it was impossible to start and we didn't waste time on them. Presently enough were lined up to accommodate all of us. Headlights on full would penetrate the dust a dozen feet, and we planned to keep that far apart.

The first few blocks were the ticklish part. Some of the engines behaved nobly. Others died on us and the cars behind pushed. Batteries were used for purposes never intended by their makers. Finally we came to the down grade and then it was simply a matter of keeping the cars under control and not running off the road.

We found the train crew in the station discussing whether to wait longer for us or to save their own lives by leaving while it was still possible. The general opinion was that all of us who had left to go up to the city were dead by this time. The trainmen had decided to wait until ten-thirty and if we hadn't appeared by that time they would go. When ten-thirty came with no sign of us, the engineer insisted on waiting fifteen minutes longer. Said he had a feeling that we were still alive.

It was during the last few minutes of this fifteen that the first of our procession of cars ran into the station and smashed a waiting room window.

This time we thought we were on our way to safety and then we found we weren't. When the engineer pulled the throttle of his engine, the driving wheels began slowly to turn but the train didn't move. Sand, and we moved forward a few feet, when the wheels began to spin again. Finally the younger men piled out of the train and broke into a construction car that was on a nearby siding. Armed with shovels, we began laboriously to clear the tracks. It was necessary not only to shovel off the volcanic dust but even to sweep the tracks. The dust made the tracks as slippery as if they had been greased.

We did this for nearly half a mile until we reached the down grade. Throwing away our shovels and brooms we scrambled aboard as the train slowly gathered speed. Fortunately the engineer was an old hand on the run and knew the grades. He carefully regulated his speed and we were neither derailed nor did we stop again until seven minutes after three. After that hour there were no more railroads in that part of the country.

We were near the South Carolina line then and fortunately for us, in comparatively level country. We had left the mountains behind and were among rolling hills.

● I was dozing when the first shock came and instead of waking me, it became part of a nightmare. The second shock was only a few seconds later and overturned every car of the train. My elbow crashed through the window, cutting my arm but not seriously. A woman from the other side of the car was flung on top of me. At first I couldn't think where I was. Women were screaming and men shouting. I heard the sound of escaping steam.

Then I saw Gary looking down at me through the

window on the opposite side of the car, which was now directly overhead.

"You all right?" he asked.

"Sure. Help me get this woman out. She's fainted."

I managed to hand her to Gary and get out of the car myself before the third shock, which was the most severe of the series which continued for twenty-four hours.

I don't know that I can add very much to the accounts of the earthquake which have been published. It was the most destructive that has occurred during historic times and extended over a wider territory.

I was thrown violently to the ground by the third shock. I was dazed but did not lose consciousness. I remember every detail as plainly as if it had happened an hour ago.

The fall of dust had stopped and the great barrier of fire in the north illumined the country so the intervening mountains stood out against the sky like black silhouettes. The terrific twisting sidewise movement of the earth nauseated me, but I was watching those mountains when they began to slide.

That doesn't sound very thrilling as I write it, but it was thrilling enough to look at. The only thing I could think of was an extravaganza I saw at a theatre when I was a boy, where one scene melted into another before my eyes. That was what was happening now. I saw the sharp conical peak of a mountain begin to sway back and forth. Then it seemed to slide on itself and dissolve.

In a few seconds there was no mountain there. I rubbed my eyes and when I looked again, the peaks in sight were disappearing as if they had been melted into liquid and were running off.

I don't pretend to say what actually happened that night. What I am describing is what I seemed to see. How much was optical illusion I'll have to leave for others to decide. One thing we know. The mountainous country of western North Carolina and the adjoining states was levelled off that night into what it is now, a barren, rocky plateau with fumeroles, boiling springs, geysers and other evidences of volcanic activity not far from the surface.

None of the passengers on the train was badly hurt when it overturned, but we had no food and it was forty-eight hours before a rescue party reached us. They were not hunting for us because it was assumed we had perished. It happened that the members of our party were the only persons who had actually been in the devastated country to escape alive.

This isn't the place to go into the theories of what caused the disaster, even if they were better established than they are. It is sufficient to say that the now generally accepted scientific opinion is that the earth contains vastly more than the 270,000,000 tons of radioactive substances required to keep its heat constant. Periodically the increasing internal temperature causes an explosion. It is thought possible that the place of such explosions may be indicated in advance by the discharge from the earth of radioactive gasses, as was the case in North Carolina. Whether this is true will probably not be determined until after observations have been made covering a period of years.

Dr. Grant's insistence on the evacuation of western North Carolina undoubtedly saved tens of thousands of lives. He lost his own, but he would doubtless have considered that a small price to pay for what he accomplished. A monument has recently been erected in Washington to his memory.

THE END