



Poisoned Air
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About Meek:

Sterner St. Paul Meek (April 8, 1894, Chicago, Illinois - June 10, 1972) was a US military chemist, early science fiction author, and children's author. He published much of his work first as Capt. S.P. Meek, then, briefly, as Major S.P. Meek and, after 1933, as Col. S. P. Meek. He also published one story as Sterner St. Paul.

Meek received his Associate degree from University of Chicago in 1914 and his Bachelor's degree in Metallurgical Engineering from University of Alabama in 1915. He continued his education at University of Wisconsin-Madison (1916) and MIT (1921-1923). He married in 1927 and had one son.

When the United States entered World War I in 1917, Meek joined the military as a chemist and ordnance expert. He served as Chief, Small Arms Ammunition Research, in 1923-1926, and Chief Publications Officer, Ordnance Dept., in 1941-1945. He retired a colonel in 1947, at which point he became a full time writer.

Source: Wikipedia

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A telephone bell jangled insistently. The orderly on duty dropped his feet from the desk to the floor and lifted the receiver with a muttered curse.

"Post hospital, Aberdeen Proving Ground," he said sleepily, rubbing his eyes.

A burst of raucous coughing answered him. Several times it ceased for an instant and a voice tried to speak, but each time a fresh spasm of deep-chested wracking coughing interrupted.

"Who is this?" demanded the now aroused orderly. "What's the matter?"

Between intervals of coughing difficultly enunciated words reached him.

"This is—*uch! uch!*—Lieutenant Burroughs at the—*uch!*—Michaelville range. We have been—*uch!*—caught in a cloud of poison—*uch! uch!*—gas. Send an ambulance and a—*uch!*—surgeon at once. Better bring—*uch!*—gas masks."

"At the Michaelville range, sir? How many men are down there?"

"*Uch! uch! uch!*—five—all help—*uch! uch!*—helpless. Hurry!"

"Yes, sir. I'll start two ambulances down at once, sir."

"Don't forget the—*uch! uch!*—gas—*uch!*—masks."

"No, sir; I'll send them, sir."

Five minutes later two ambulances rolled out of the garage and took the four-mile winding ribbon of concrete which separated the Michaelville water impact range from the main front of the Aberdeen Proving Ground. On each ambulance was a hastily awakened and partially clothed medical officer. For three miles they tore along the curving road at high speed. Without warning the leading machine slowed down. The driver of the second ambulance shoved home his brake just in time to keep from ramming the leading vehicle.

"What's the matter?" he shouted.

As he spoke he gave a muttered curse and switched on his amber fog-light. From the marshes on either side of the road a deep blanket of fog rolled up and enveloped the vehicle, almost shutting off the road from sight. The forward ambulance began to grope its way slowly forward. The senior medical officer sniffed the fog critically and shouted to his driver.

"Stop!" he cried. "There's something funny about this fog. Every one put on gas masks."

He coughed slightly as he adjusted his mask. His orders were shouted to the ambulance in the rear but before the masks could be adjusted, every member of the crew was vying with the rest in the frequency and violence of the coughs which he could emit. The masks did not seem to shut out the poisonous fog which crept in between the masks and the men's faces and seemed to take bodily possession of their lungs.

"I don't believe we'll ever make the last mile to Michaelville through this, Major," cried the driver between intervals of coughing. "Hadn't we better turn back while we can?"

"Drive on!" cried the medical officer. "We'll keep going as long as we can. Imagine what those poor devils on the range are going through without masks of any sort."

On through the rapidly thickening fog, the two ambulances groped their way. The road seemed interminable, but at length the flood lights of the Michaelville end of the range came dimly into view. As the vehicles stopped the two surgeons jumped to the ground and groped their way forward, stretcher bearers following them closely. Presently Major Martin stumbled over a body which lay at full length on the concrete runway between the two main buildings. He stooped and examined the man with the aid of a pocket flashlight.

"He's alive," he announced in muffled tones through his mask. "Take him to the ambulance and fit a mask on him."

Three more unconscious men were carried to the ambulances before the prone form of Lieutenant Burroughs was found by the searchers. The lieutenant lay on his back not far from the telephone and directly under the glare of a huge arc-light. His eyes were open and he was conscious, but when he tried to speak, only a murmur came from his lips. There was a rattle in his chest and faint coughs tried in vain to force their way out between his stiffened lips.

"Easy, Lieutenant," said Major Martin as he bent over him; "don't try to talk just now. You're all right and we'll have a mask on you in a jiffy. That damned gas isn't as thick right here as it is down the road a way."

Two medical corps men lifted the lieutenant onto a stretcher and started to fit a mask over his face. He feebly raised a hand to stop them. His

lips formed words which he could not enunciate, but Major Martin understood them.

"Your men?" he said between intervals of coughing. "We've got them all in the ambulance, I think. There were four besides yourself, weren't there?"

The lieutenant nodded.

"Right. We have them all. Now we'll take you back to the hospital and have you fixed up in a jiffy."

The entire rescue crew were coughing violently as the ambulances left Michaelville. For a mile they drove through fog that was thicker than had been seen in Maryland for years. They reached the point where they had encountered the congealed moisture on the way out, but now there was no diminution of its density. The main post was less than two miles away when they burst out into a clear night and increased their speed.

As the two machines drew up in front of the post hospital, the driver of the leading ambulance swayed in his seat. Blindly he pulled on his emergency brake and then slumped forward in his seat, his breath coming in wheezing gasps. Major Martin hastily tore the mask from his face and glanced at it.

"Take him in with the rest!" he cried. "His mask must have leaked."

As they entered the hospital, a sickening weakness overcame Major Martin. From all sides a black pall seemed to roll in on him and bits of ice seemed to form in his brain. He reeled and caught at the shoulder of a corps man who was passing. The orderly caught at him and looked for a moment at his livid face.

"Sergeant Connors!" he cried.

A technical sergeant hastened up. Major Martin forced words with difficulty through stiffening lips.

"Call Captain Murdock," he wheezed, "and have him get Captain Williams. I'm down and probably Dr. Briscoe will be down in a few minutes. Telephone the commanding officer and tell him to quarantine the whole proving ground. Have the telephone orderly wake everyone on the post and order them to close all windows in all buildings and not to venture outside until they get fresh orders. This seems to be the same stuff they had in Belgium last December."

As the last words came from his lips he slowly stiffened and slumped toward the ground. The sergeant and the orderly picked him up and carried him to a bed in the emergency ward. The orderly hurried away to close all of the hospital windows while Sergeant Connors took down the receiver of the telephone and began to carry out the Major's orders.

Dr. Bird glanced at the news-paper clipping which Operative Carnes of the United States Secret Service laid on his desk. Into his eyes came a curious glitter, sure evidence that the famous scientist's interest was aroused.

"Last December when we discussed this matter, Doctor," said the detective, "you gave it as your opinion that Ivan Saranoff was at the bottom of it and that the same plague which devastated the Meuse Valley in Belgium would eventually make an appearance in the United States. You were right."

Dr. Bird bounded to his feet.

"Is Saranoff back on this side of the Atlantic?" he demanded.

"Officially, he is not. Every customs inspector and immigration officer has his photograph and no report of his arrest has come in, but we know Saranoff well enough to discount negative evidence where he is concerned. Whether he is here or not, the plague is."

"When did it appear?"

"Last night at the Aberdeen Proving Ground in Maryland. It has killed eight or ten and twice as many more are sick. The place is quarantined and a rigid censorship has been placed over the telephones, but it is only a matter of time before some press man will get the story. I have a car waiting below and a pass signed by the Secretary of War. Grab what apparatus you need and we'll start."

Dr. Bird pressed a button on his desk. A tall, willowy girl entered, notebook in hand. Carnes glanced with keen appreciation at her slim beauty.

"Miss Andrews," said the doctor, "in five minutes Mr. Carnes and I will leave here for Aberdeen Proving Ground in the Government car which is waiting below. You will see that Mr. Davis is in that car and that traveling laboratory 'Q' is ready to follow us."

"Yes, Doctor."

"You remember that mysterious plague in Belgium last December, do you not?"

"Yes, Doctor."

"I was unable to get over to Belgium, but an army surgeon and two Public Health Service men went over. You will get copies of all reports they made, including especially any reports of autopsies on bodies of victims. I want all data on file in the Public Health Service or the War Department. You will then obtain a car and follow us to Aberdeen. Arrangements will be made for your admittance to the proving ground. The Belgian plague has made its appearance in the United States."

Swiftly the expression of the girl's face changed. Her dark eyes glowed with an internal fire and the immobility of her face vanished as if by magic to be replaced by an expression of fierce hatred. Her lips drew back, exposing her strong white teeth and she literally spat out her words.

"That swine, Saranoff!" she hissed.

Carnes sprang to his feet.

"Why, it's Feodrovna Androvitch!" he cried in astonishment.

In an instant the rage faded from her face and the calm, immobility which had marked it reappeared. Through the silence Dr. Bird's voice cut like a whip.

"Miss Andrews," he said sternly, "I thought that I had impressed on you the fact that even a momentary lapse from the character which you have assumed may easily be fatal to both of us. Unless you can learn to control your emotions, your usefulness to me is at an end."

Although Carnes watched closely he could not detect the slightest change of expression in the girl's face as the doctor spoke.

"I am very sorry, Doctor," she said evenly. "We were alone and I allowed the mask to slip for an instant. It will not happen again."

"It *must* not," said the doctor curtly. "Carry out your instructions."

"Yes, Doctor."

She turned on her heel and left the office. Carnes looked quickly at Dr. Bird.

"Surely that is Feodrovna Androvitch, Doctor?" he asked.

"It was. It is now Thelma Andrews, my secretary. She changed her name with her appearance and politics. I have been training her since last August. This is her first official appearance, so to speak."

"In view of her past associations, is it safe to trust her?"

"If I didn't think so, I wouldn't use her. She has ample reason to hate Ivan Saranoff and she knows how much mercy she has to hope for from him if he ever gets her in his clutches. We can't play a lone hand against Saranoff forever and I know of no better place to recruit an organization than the enemy's camp. Thelma saved our lives in Russia, you may remember."

"But even when she was rescuing us from the clutches of Saranoff's gang, she was an ardent communist, if I remember correctly."

"Theoretically I believe she still favors the world revolution, but she hates Saranoff even more than she does the bourgeoisie and I believe she had come to be willing to accept capitalistic institutions for the present, at least as far as this country is concerned. At any rate, I trust her. If you have any doubts, you can have her watched for a while."

Carnes thought for a moment and then picked up the telephone.

"I have plenty of confidence in your judgment, Doctor," he said apologetically, "but if you don't mind, I'll have Haggerty trail her for a few days. It won't do any harm."

"Very well; and if any of the Young Labor gang should penetrate her disguise, he'd be a mighty efficient bodyguard. Do as you see fit."

Carnes called the number of the secret service and conferred for a few moments with Bolton, the chief of the bureau. He turned to Dr. Bird with a smile of satisfaction.

"Haggerty will be on the job in a few minutes, Doctor."

"Good enough. The five minutes I allowed are up. Let's see how well she has performed her first task."

As they emerged from the Bureau of Standards, Carnes glanced rapidly around. In the front seat of the secret service car which he had left sat a young man whom the detective recognized as one of Dr. Bird's assistants. Behind the car stood a small delivery truck with two of the Bureau mechanics on the seat.

Dr. Bird nodded to the mechanics and followed Carnes into the big sedan. With a motorcycle policeman clearing a way for them, they

roared across Washington and north along the Baltimore pike. Two hours and a half of driving brought them to Aberdeen and they turned down the concrete road leading to the proving ground. Two miles from the town a huge chain was stretched across the road with armed guards patrolling behind it. The car stopped and an officer stepped forward and examined the pass which Carnes presented.

"You are to go direct to headquarters, gentlemen," he said. "Colonel Wesley is waiting for you."

The commanding officer rose to his feet as Carnes and Dr. Bird entered his office.

"I am at your service, Dr. Bird," he said formally. "The Chief of Ordnance has given instructions which, as I understand them, put you virtually in command of this post." There was resentment in the colonel's tone.

Dr. Bird smiled affably and extended his hand. The old colonel struggled with his chagrin for a moment, but few men could resist Dr. Bird when he deliberately tried to charm them. Colonel Wesley grasped the proffered hand.

"What I want most, Colonel, is your cooperation," said the doctor suavely. "I am not competent to assume command here even if I wished to. I would like to ask a few favors but if they should prove to be contrary to your established policies, I will gladly withdraw my request."

Colonel Wesley's face cleared as if by magic.

"You have only to ask for anything we have, Doctor," he said earnestly, "and it is yours. Frankly, we are at our wit's end."

"Thank you. I have a truck with some apparatus and three men outside. Will you have them guided to your laboratory and given what aid they need in setting their stuff up?"

"Gladly."

"My secretary, Miss Andrews, will arrive from Washington later in the day with some information. I would like to have her passed through the guards and brought directly to me wherever I am. You have the place well guarded, have you not?"

"As well as I can with my small force. All roads are patrolled by motorcycles; four launches are on the waterfront, and there are seven planes aloft."

"That is splendid. Now can you tell me just what happened last night?"

"Captain Murdock, the acting surgeon, can do that better than I can, Doctor. He is at the hospital but I'll have him up here in a few minutes."

"With your permission, we'll go to the hospital and talk to him there. I want to examine the patients in any event."

"Certainly, Doctor. I will remain at my office until I am sure that I can give you no further assistance."

With a word of thanks, Dr. Bird left, and, accompanied by Carnes, made his way to the hospital. Captain Murdock was frankly relieved to greet the famous Bureau of Standards scientist and readily gave him the information he desired.

"The first intimation we had of trouble was when Lieutenant Burroughs telephoned from the water impact range where they were doing night firing last night at about four A.M. Two ambulances went down and brought him and his four men back, all of them stricken with what I take to be an extremely rapidly developing form of lobar pneumonia. All of the men who went down were stricken with the same disease, two of them as soon as they got back. So far we have had eight deaths among these men and all of the rest, except Lieutenant Burroughs, are apt to go at any moment.

"The trouble seemed to come from a cloud of some dense heavy gas which rolled in from the marsh. On the advice of Major Martin, every door and window in the post was kept closed until morning. The gas never reached the upper part of the post but it reached the stables. Eleven horses and mules are dead and all of the rest are stricken. The stable detachment either failed to close their barracks tightly or else the gas went in through cracks for seven out of the nine are here in the hospital, although none of them are very seriously ill. As soon as the sun came up, the gas seemed to disappear."

"Let me see the men who are sick."

Captain Murdock led the way into the ward. Dr. Bird went from man to man, examining charts and asking questions of the nurses and medical corps men on duty. When he had gone the rounds of the ward he entered the morgue and carefully examined the bodies of the men who lay there.

"Have you performed any autopsies?" he asked.

"Not yet."

"Have you the authority?"

"On the approval of the commanding officer."

"Please secure that approval at once. Have all lights taken out of the operating room and the windows shaded. I want to work under red light. We must examine the lungs of these men at once. With all due respect to your medical knowledge, Captain, I am not convinced that these men died of pneumonia."

"Neither am I, Doctor, but that is the best guess I could make. I'll have things fixed up for you right away."

Dr. Bird stepped to the telephone and called the laboratory. When, in half an hour, Captain Murdock announced that he was ready to proceed, Davis had arrived with an ultra-microscope and other apparatus which the doctor had telephoned for.

"Did you arrange about the horses, Davis?" asked Dr. Bird.

"Yes, sir. They will be up here as soon as the trucks can bring them."

"Good enough. We'll start operating."

An hour later, Dr. Bird straightened up and faced the puzzled medical officer.

"Captain," he said, "your diagnosis is faulty. With one possible exception, the lungs of these men are free from pneumonicocci. On the other hand there is a peculiar aspect of the tissues as though a very powerful antiseptic solution had been applied to them."

"Hardly an antiseptic, Doctor; wouldn't you say, rather, a cauterizing agent."

Dr. Bird bent again over the ultra-microscope.

"Are you familiar with the work done by Bancroft and Richter at Cornell University last November and December?" he asked.

"No, I can't say that I am."

"They were working under a Heckscher Foundation grant studying just how antiseptic solutions destroy bacteria. It has always been held that some chemical change went on, but this theory they disproved. It is a process of absorption. If enough of the chemical adheres to the living bacterium, the living protoplasm thickens and irreversibly coagulates. It resembles a boiling without heat. I have seen some of their slides and the appearance is exactly what I see in this tissue."

Captain Murdock bent over the microscope with a new respect for Dr. Bird in his face.

"I agree with you, Doctor," he said. "This tissue certainly looks as though it had been boiled. It is certainly coagulated, as I can plainly see now that you point it out to me. You believe, then, that it is a simple case of gassing?"

"If so, it was done by no known gas. I have studied at Edgewood Arsenal, and I am familiar with all of the work done by the Chemical Warfare Service in gases. No known gas will produce exactly this appearance. It is something new. Carnes, have those horses been brought up yet?"

"I'll see, Doctor."

"If they are, bring one here."

In a few moments the body of a dead horse was dragged into the operating room and Dr. Bird attacked it with a rib saw. He soon laid the lungs open and dragged them from the body. He cut down the middle of one of the organs and shaved off a thin slice which he placed under the lens of a powerful binocular microscope.

"Hello, what the dickens is this?" he exclaimed.

With a scalpel and a delicate pair of tweezers he carefully separated from the lung tissue a tiny speck of crystalline substance which glittered under the red light in the operating room. He carefully transferred it to a glass slide and put it under a microscope with a higher magnification.

"Rhombohedral regular," he mused as he examined it. "Colorless, friable, and cleaving in irregular planes. What in thunder can it be? Have you ever seen anything like this in a lung, Murdock?"

The medical officer bent over the microscope for a long time before he shook his head with a puzzled air.

"I never have," he admitted.

"Then that's probably what we're looking for. Start slicing every lung in this place and look for those crystals. Save them and put them in this watch glass. If we can get enough of them, we may be able to learn something. Carnes, get the rest of those horses in here and open them up."

Two hours of careful work netted them a tiny pile of the peculiar crystals. Some had come from the lungs of the dead animals and some few

from the lungs of the dead soldiers. Dr. Bird placed the crystals in a glass bottle which he covered with layer after layer of black paper.

"Get me more of those crystals if you can find them, Captain Murdock," he said, "and in any case, leave the bodies here for further study. Davis and I will go to the laboratory and try to find out what they are. Carnes, hasn't Miss Andrews showed up yet?"

"No, Doctor."

"Locate her on the telephone if you can and tell her not to bother about anything except the autopsy reports and to get them here as quickly as possible. Let me know when you have that done."

In a dark room of the photographic laboratory, Dr. Bird removed the black wrappings from the bottle. He dropped a few of the crystals in a test tube and added distilled water. The water assumed a pink tinge as the blood with which the crystals were covered dissolved, but the crystals themselves did not change. They rose and floated on the surface of the water.

"Insoluble in water, Davis," commented the doctor. "Better wash the lot and then we'll get after the ultimate analysis. Whether we'll be able to make a proximate is doubtful in view of the small amount of sample we have. It's dollars to doughnuts that it's some carbon compound."

He heated a few of the washed crystals in a watch glass. Suddenly there was a sharp crack and the material disappeared. Dr. Bird thrust his nose toward the glass and sniffed carefully.

"The dickens!" he muttered. "Davis, have I got a cold or do you smell garlic?"

"Faintly, Doctor."

"I have a hunch. Fill a gasometer with purified argon and we'll introduce a few of these crystals and explode them. If I'm right—"

Half an hour later he straightened up and examined the tube of the gas analysis apparatus with which he was working. The level of the gas showed it to be of the original volume but the liquid under the argon was stained a light brown.

"It's impossible, Davis," cried the doctor, "but nevertheless, it's true. Expose some of those crystals to strong sunlight and see what happens."

The crystals rapidly disappeared as the light from a sun-ray arc fell on them.

"It's true, Davis," cried the doctor, positive awe in his voice. "Keep this strictly under your hat for the present. Now that you know what we're up against, fix up a couple of masks and air-collecting apparatus. That stuff will show up again in the swamp to-night and I am going down there to collect some samples. I'll telephone the hospital now."

As Dr. Bird emerged from the dark room, Carnes hurried up with a worried expression.

"The devil's to pay, Doctor," was his greeting.

"All right, stall him off for a minute while I telephone the hospital. I think I can save some of those poor fellows up there."

Carnes paced the floor in anxiety while Dr. Bird got Captain Murdock on the telephone.

"Bird talking, Murdock," he said crisply. "How much deep therapy X-ray apparatus have you got up there?... Too bad... . Well, at least you can give every patient a four-minute dose of maximum intensity and repeat in an hour or so. Keep them under sun-ray arcs as much as you can. Be ready for a fresh attack of the same epidemic to-night. As fast as the patients come in, give them a five-minute dose of X-rays and then sun-rays. Do you understand?... All right, then."

"Just a moment more, Carnes," he went on as he called the office of the commanding officer. "Colonel Wesley, this is Dr. Bird. I think that I have some light on your problem. You must anticipate another more virulent attack than you had last night, probably as soon as the sun goes down. Will you arrange to have everyone removed from the swamp area before that time? Never mind trying to guard the place; you'll just lose more lives if you do. Warn everyone to keep inside the buildings with all doors and windows closed tight. Get all the women and children and everyone else who isn't needed here off the post before dark. Send them to Aberdeen or Baltimore or anywhere... . No, sir, the sick had better not be moved. I think they will be safer in the hospital than they would be elsewhere... . Yes, sir, that's all. Thank you."

Dr. Bird turned to the waiting Carnes.

"Did you locate Miss Andrews?" he asked.

"No, I didn't and that is what I want to talk to you about. I just started to telephone when a hurry call came through from Washington for me and I took it. It was Haggerty on the wire. He followed your precious

secretary from the Bureau of Standards over to the Public Health Office and waited for her to come out. She stayed in the building for about an hour and brought a bundle of papers with her when she returned. She walked toward the State, War and Navy Building and Haggerty followed.

"On Pennsylvania Avenue, she was stopped by two men whom Haggerty describes as dark, swarthy, bearded Europeans of some sort. He tried to overhear their conversation but it was in a language which he did not recognize. He got only one word. The girl called one of them 'Denberg.'"

"Denberg!" cried the doctor, "Why, he's one of the Young Labor crowd, but he's in Atlanta."

"He was, Doctor, but I telephoned Atlanta, and found that he had been released last month. After several minutes of talk the two men and your secretary went off together in perfect amity with Haggerty following. The trio got into a waiting car and Haggerty trailed them in a taxi. They drove around town rather aimlessly for some time and then left the car and walked. Haggerty was afraid he would lose them in the crowd so he closed in on them. He doesn't know what happened except that he felt a sudden stab in his arm and everything went black. He recovered in the police station twenty minutes later but the birds had flown."

"The devil!" cried Dr. Bird, consternation in his voice. "Of course, it's easy to see what happened. They spotted him and a confederate slipped a hypo into his arm. What worries me is the fact that they've got Thelma."

"I hope they kill her," snapped Carnes vindictively. "She was never kidnapped in broad daylight. Haggerty says she went with them quite willingly and talked and laughed with them. She has deserted, if she wasn't simply acting as a spy from the first. I didn't trust her at all."

"I hate to admit that my judgment is that rotten, Carnes, but the evidence certainly points that way. At that, I think I'll reserve final judgment until later. Now, in view of what you have learned, I have a job for you."

"It's about time, Doctor. I have been rather useless with all the high-powered science that has been flying around here."

"Well, you'll be in your element now. We know that Denberg is loose and their capture of Thelma is no coincidence. I was pretty sure that Saranoff and his gang were at the bottom of this; now I am certain. They

must have introduced something onto the marshes last night which caused the trouble. They could not have come overland very well, for the place is too well patrolled. Had they come by air, they would have attracted attention, even had they used a Bird silencer on their motor, for they couldn't muffle their propeller, especially on a takeoff, and there are plenty of men here who would have recognized it. You might check up on that, but I am confident that they came by water. Launches and boats are continually passing up and down the Chesapeake and its tributaries and one more could easily have escaped notice. The Bush River is at the far end of the Michaelville range and it is navigable for craft of light draft at high tide. Find out whether any strange craft were seen in the vicinity of the proving ground last night. If you draw a blank, go to Perryville and Havre de Grace and see what you can find out there. I have a hunch that their base is more likely to be up the Susquehanna than down toward the coast. Above all, Carnes, don't approach the proving ground by water to-night and don't get near the mouth of the Bush River."

"All right, Doctor. What are you going to do?"

"I'm going down on the swamp and collect samples. Oh, don't look so worried. I know just what I am up against and I will have adequate protection. I'll be in no danger and you would just be in the way. Toddle along, old dear, and report to me by telephone as soon as you have learned anything."

"As you say, Doctor. You'll hear from me the minute I do."

When Carnes had left, Dr. Bird climbed into the waiting car and was driven back to the hospital. Captain Murdock greeted him with a smiling face.

"I don't know how you got on to that treatment, Dr. Bird," he said, "but it is doing the men good. The worst cases haven't been affected much, one way or the other, but the progress of the malady in the mild cases from the stables has been completely checked. I think they have a chance now."

"They'll be all right if the destruction and coagulation of tissue hadn't progressed too far before you checked it, Captain. Treat them now for simple lung cauterization and they ought to get well."

"I have some more of those crystals dissected out, Doctor."

"Keep them in the dark until Mr. Davis comes after them. I want to take a few of them back to Washington for study."

"You expect another attack to-night, Doctor?"

"Yes, sometime after sundown."

"What, in heaven's name, is it?"

"Heaven has nothing to do with it, Captain; the stuff comes from the devil's regions and it is the product of a Russian chemist, who I sometimes believe is verily the devil himself. How it's done and what it is, I haven't found out yet, but I am going to investigate a little to-night. The effect is what you have seen. Are you familiar with the various forms of oxygen?"

"The forms of oxygen? Why, there is only one, oxygen gas. Wait a minute though, there is another form, ozone. Are there any more?"

"None that have been previously listed and studied, but at least one other form exists. Those crystals are pure oxygen."

"Impossible! Oxygen is a gas at all ordinary temperatures."

"Yes, a gas, but one whose density varies. Oxygen, to which we chemists assign the formula O_2 , meaning that its molecule consists of two atoms of oxygen, has a weight of 32 grams per gram molecule. Ozone, to which we assign the formula O_3 , meaning that its molecule contains three atoms of oxygen, weighs fifty per cent more or 48 grams per gram molecule. This new form has a density less than water, but tremendously greater than any known gas. I have not yet been able to determine its structure, so I will have to assign to it the formula, O_x , meaning an indefinite number of atoms per molecule. The only name which suggests itself is oxyzone, a combination of oxygen and ozone.

"The stuff is a polymerization, or condensation, to speak roughly, of the oxygen of the air. The oxygen takes this form which the lungs cannot assimilate except with great difficulty and with great damage to the tissues. The oxyzone will break down rapidly under the influence of sunlight or of any ray whose wave-length is shorter than indigo. As a result, it disappears as soon as the sun is up and it will reappear after dark. That is why I suggested X-rays as a treatment. They have a very short wave-length and will penetrate tissues and affect the particles in the lungs themselves. Once the material is removed from the lungs, the cauterization of the tissue ceases and it is merely a matter of slow recovery."

"It is a marvelous discovery, Doctor. I can foresee great uses for it in medical science if a way can be found to produce it."

"Just now we are much more interested in stopping its production than in producing it. Carry on with the line of treatment I have prescribed and be ready for a busy time to-night."

From the hospital, Dr. Bird made his way to the headquarters building where he conferred with Colonel Wesley on the measures being taken to clear the proving ground of all persons not strictly necessary for its guarding. The commanding officer, when he learned Dr. Bird's plans, wished to send guards with him, but the doctor promptly vetoed the scheme.

"My assistant, Mr. Davis, won't be able to fix up more than two masks before dark, Colonel," he said, "and you would just be condemning men to death to send them with me into that fog without proper protection. I can see that you are anxious to know what is causing it, but I'm not ready to tell just yet. I had given your medical officer enough information to enable him to treat the hospital cases scientifically, and to-morrow or the next day I hope to be able to tell you all about it. Now, if you'll pardon me, I'm going to the laboratory to see how Mr. Davis is getting along. It will be dark in three-quarters of an hour and I hope that everyone will stay under cover as much as possible."

Davis looked up as Dr. Bird entered the laboratory.

"I'll have the masks completed in an hour, Doctor," he said, "but I don't know how much value they will be. If the oxygen polymerizes before it enters the body, these masks ought to stop it, but if it polymerizes under the influence of heat and moisture in the lungs, they will be useless."

"I'll have to take a chance on that, Davis. From the description of the fog, I strongly suspect that the process takes place outside the body. Have you had your supper?"

"No, Doctor."

"Neither have I. I'll go over to the officers' mess and get a bite to eat. As soon as you have those masks done, get your supper and then telephone me at the club. If Carnes isn't back, I may have to ask you to drive me down toward Michaelville."

"I'll be very glad to, Doctor."

Carnes had not returned when Davis called Dr. Bird at the officers' club two hours later. Night had fallen and everyone on the proving ground sat behind tightly closed windows with lights blazing on them,

wondering whether the finger of death would reach in from the swamp to touch them. The fog had not yet made an appearance on the main post and Dr. Bird had no fear of it when he entered his car and drove down to pick up his assistant.

Davis came out to meet him with a curious hood made of vitriolene and rubber, pulled down well over his head. In his hand he carried a second one. Dr. Bird adjusted the second mask and the two men loaded the rear of the car with apparatus designed for collecting samples of air. The outside of each sample cylinder was heavily coated with black rubberine paint. At a word from the Doctor, Davis took the wheel and drove off along the winding ribbon of concrete which led to the upper end of the Michaelville range.

For a mile they drove through a clear, calm night with no traces of fog apparent. Dr. Bird's eyes continually searched the swamps on both sides of the road.

"Stop!" he said suddenly, his voice coming muffled through the enveloping mask. The car stopped and the Doctor pointed to the west. Over the swamp a few stray fingers of fog were curling up from the water.

Leaving Davis in charge of the car, Dr. Bird donned rubber hip boots and with a gas cylinder in his hand, splashed through the water toward the fog. He reached the place with no difficulty and spent ten minutes trying to collect a sample. Finally, with a muttered exclamation, he removed his mask and inhaled deeply a dozen times. Carrying the mask in his hand, he made his way back to the car.

"False alarm," he said as he pulled on his mask. "It was so thin that I couldn't get a sample so I tested it by breathing. There isn't a trace of cough in that fog. Drive on."

A half mile farther along the road, a curtain of fog swept in on them, momentarily hiding the road from view. They were through the belt of fog in a few feet and the car came to a stop. Dr. Bird sprang out, gas cylinder in hand. He returned to the car shortly.

"We may have what we are looking for, Davis," he said, "but I am not at all certain. It looked very much like ordinary fog. Let's go down to the range."

The car drew up between the two main buildings of the Michaelville front. The air was clear as far as they could see, but from under the north building, a tiny wisp of fog was coming. As it came under the glare of

the three huge arc-lights which flooded the ground with light, it grew more tenuous and gradually dissipated into nothingness. With an exclamation of satisfaction, Dr. Bird bent down and thrust the end of a cylinder under the building. He removed it in a moment as the fog began to stream from the upper end. Carefully he closed the pet-cocks of the tube and replaced it in the car. He filled a half dozen tubes before he was satisfied.

"I'd like to go down to the water," he said through his mask. "What kind of a jigger do they run on that track?"

"It's a Ford scooter, I was told. It's probably in that shed."

Half an hour later the two men were running the scooter down the four miles of narrow gage track which separated Michaelville from the Bush River. A few scattered patches of fog could be seen on either side of the track, but none were of sufficient thickness to warrant much success in sample taking. At the water front Dr. Bird looked across the half mile wide river and grunted.

"The tide won't be in for another three hours," he said. "Right now there isn't over sixteen inches of water in there."

Carnes was waiting in the well lighted laboratory when they drove up.

"All right, Davis," said the doctor, "get busy on those samples. If you can't make out the first two, don't crack the others but leave them for me. Give Carnes your mask; he'll drive the rest of the night.

"What luck, Carnesy?" he asked, as the detective, wearing Davis' mask, drove toward the officers' club.

"No stray plane landed or even flew over here last night so far as I could learn. Most of the boats on the bay were either known or lent themselves to ready identification. There were four that I couldn't exactly place, but I think we can safely discard all but one. Some fishermen were pulling nets on the bay about half a mile outside the mouth of the Bush River last night. About eleven, a boat running without lights passed them. They said that they could not hear an engine running, but just a dull hum and the gurgle of a propeller. They hailed it, but got no answer. It faded away into the darkness and they think it was headed toward the mouth of the Bush River. They had their nets up and reset in another hour but the boat didn't reappear."

"Hmm. High tide was at ten minutes after midnight. There was plenty of water in the river at that hour. It sounds promising."

"I thought of telephoning Washington and getting a Coast Guard cutter put on patrol in the bay but I didn't like to do it without your sanction."

"It might have been a good idea, but on the whole it's probably better that you didn't. Carnes, we'll go down to the water front and see whether anything shows up to-night. High tide will be about eleven-thirty. It's about half-past nine now. We'd better get going."

On the second drive to Michaelville, the fog patches were quite noticeably denser than they had been earlier in the evening. Three times the car had to pass through bands of fog which covered the road. As they passed the second one Carnes suddenly began to cough.

"What's the matter, old man?" cried Dr. Bird, a note of anxiety in his voice. For a few moments Carnes could not answer for coughing. He seized the mask to tear it from his head but Dr. Bird restrained him. In a few minutes his voice became intelligible.

"It seemed like that fog bit right into my lungs, Doctor," he gasped. "I felt as if I were choking. It's better now."

"Are you sure your mask isn't leaking, Carnes? It'll be all up with you if it does. Test it."

The detective closed the intake valve of the mask and expelling all of the air from his lungs, took a deep breath. The air whistled noisily in through the outlet valve.

"The devil!" cried the doctor. "Take that mask off and let me look at it."

A few moments were enough to make the needed repairs and they drove on. Carnes still coughed from time to time. At Michaelville, they started the scooter and ran down the track to the river. They secreted the scooter under the parapet on the water pent-house and walked to the river's edge.

"There's no telling just where they may land, Carnes," said the doctor reflectively, "but this looks like the most likely place. I'll tell you what we'll do. The river narrows a good deal about half a mile east of here. You go up to the narrows and keep watch while I stay here. If any craft passes you, follow it upstream until you find me. If they land, handle the situation as well as you can alone. If you hear any shooting, come as fast as you can leg it. I'll do the same."

The detective stole away into the darkness and Dr. Bird settled himself for a long vigil. For an hour nothing broke the stillness of the night. Suddenly the doctor was on his feet, peering downstream. A faint purring murmur came over the water, so faint that no one with less sensitive ears than the doctor's could have detected it. Assured after a few minutes of listening that some kind of a craft was coming up the river, the doctor sank back into his hiding place, an automatic pistol firmly grasped in his long tapering fingers.

The purr came nearer, but it was not appreciably louder. The gurgle of water past the prow of the boat could be heard and Dr. Bird could see a long ribbon of white on the water where the craft was passing. He stepped from his cover and leaned forward, straining his eyes to see the boat. It passed beyond him and continued up the river. He stepped quickly along the river bank, trying to keep it in sight. Suddenly he paused. The boat had turned and was coming back. Hurriedly he returned to his hiding place.

The boat came down the river until it was opposite the point where he crouched, and then it turned and came in toward the shore. Dr. Bird gripped his pistol and waited. When the craft was less than twenty feet from shore it stopped and a guttural voice spoke. Dr. Bird started. He had expected the language to be Russian, but it came as a shock to him, nevertheless. He strained his ears and cursed his inability to make out the words. Dr. Bird had been assiduously studying Russian under the tutelage of his new secretary for some months, but he had not yet progressed to the stage where he could readily understand it. The gift of languages was one which the erudite doctor did not possess.

The boat lay motionless for several minutes. Nervously the doctor glanced at his wrist watch. He barely stifled a cry of amazement. From the face of the luminous dial, long streamers of faintly phosphorescent light were streaming. He whirled to meet an attack from the rear but he was too late. Even as he turned the muzzle of a pistol pressed into his back and a voice spoke behind him.

"Drop that pistol, Doctor, or I'll be under the unpleasant necessity of making a hole in you."

Reluctantly, Dr. Bird dropped his pistol and the voice went on.

"Really, I hardly expected to catch you by surprise, Doctor. I thought you were clever enough to realize that our boat would be equipped with an ultra-violet searchlight. However, even the best minds must rest

sometimes, and yours is due for a nice long rest. In fact, I might almost prophesy that it will be a permanent rest."

Dr. Bird shivered despite himself at the cold mercilessness of the railing voice behind him. The accents were ones which he did not recognize. His captor chuckled for a few moments and then called out in Russian. The boat came into the shore and eight figures climbed out. Two of them bore a small chest which they set down on the wharf. One of the figures picked up the doctor's automatic and his captor stepped in front. A flashlight gleamed for an instant and Dr. Bird started in surprise. The men wore no masks but only a plate of glass which protected their cheeks and eyes. Fastened to the neck of each one, below the chin, was a long tube which gleamed like glass. They wore heavy knapsacks strapped to their backs from which wires ran to each end of the bars.

"Those protectors make your enveloping head-mask look rather clumsy, don't they, Doctor?" said his captor mockingly. "It's too bad you didn't think of them first. It must be such a blow to your pride to think that anyone had invented something better than yours. Really, that mask of yours worries me. Remove it!"

At his words two of the men stepped forward and tore the doctor's mask roughly from his head. The mocking voice went on.

"In view of the fact that you have only a few hours of life left, Dr. Bird, it will give me pleasure to let you know how thoroughly you have been defeated. You may not know me by sight, although my name may not be unfamiliar. I am Peter Denberg."

He turned the flashlight for an instant on his own face, and Dr. Bird gazed at him keenly.

"I'll know you the next time I see you," he muttered, half to himself.

"The next time you see me will be in the hereafter, if there be such a thing," laughed the Russian. "The sweetest blow of all is now about to fall. We expected you to be here and came prepared to capture you. Had we not known that the arch enemy of the people would be here to-night, we would have struck at a point miles away. Do you know who betrayed you? It was one we placed in your laboratory for the very purpose which she served."

He turned on the light again and it picked out of the darkness another face, a long oval face with startlingly red lips and dark oval eyes which glowed as with an internal flame. As the face became visible, the red lips

drew back, exposing strong white teeth and the words were literally spat out.

"Swine!" she hissed. "Bourgeois! Did you think you could bribe me with your gifts to tolerate your vileness? I have brought about your downfall and death, Dr. Bird. I, Feodrovna Androvitch! Now will I avenge my brother's death at your hands!"

She sprang forward and spat full in the doctor's face. Dr. Bird fell back for an instant under the ferocity of her attack and long nails ripped the skin from his face. Denberg stepped forward and caught her wrists.

"Gently, sister," he warned. Feodrovna struggled for an instant but gave way to the powerful muscles of the communist leader. "There is no need for anything of that sort," he went on. "In a few moments we will open the chest which we have and then you will enjoy the amazing spectacle of the man who has temporarily checked the plans of our leader a dozen times, gasping for breath like a fish out of water. Start your protectors."

Each of the Russians closed a switch on the knapsack which he wore. From the bars below their chins came a dull violet glow which made their faces stand out eerily in the darkness. The flashlight was centered on the box which Dr. Bird could see was made of lead, soldered into a solid mass. At a word from Denberg, one of the Russians stepped forward with a long knife in his hand and started to cut open the box.

With a sudden effort, Dr. Bird shook himself loose from the two men who were holding him and sprang forward. Denberg turned to meet him and the doctor's fist shot out like a piston rod. Full on the Russian's chin it landed and he went down like a poled ox. Two of the Russians closed with him but the two were no match for Dr. Bird's enormous strength, fighting as he was for his life. He hurled one away and swung with all of his strength at the other. His blow struck glancingly, and while the Russian spun away under the blow, he did not fall. A man caught at him from the rear and Dr. Bird whirled, but as he did so, two men seized his arms from behind. Mightily the doctor strove but others flung themselves on him. He straightened up with a superhuman effort and then from an unexpected source came help.

One of the men holding him gave a choking gasp and reeled sideways. Dr. Bird felt his neck deluged with liquid and the smell of hot blood rose sickeningly on the air. He shook himself loose again and smote with all of his strength at his nearest opponent. His blow landed fair but at the

same instant an iron bar fell across his arm and it dropped limp and helpless. Again a knife flashed in the darkness and a howl of pain came from the Russian who felt it bite home.

"We are attacked!" cried one of them. They whirled about, their flashlights cutting paths through the thickening fog. With her back to the crippled doctor's Feodrovna Androvitch held aloft a bloody knife.

Something seemed to catch Dr. Bird by the throat and shut off his breath. From a gash which had been cut in the lead box, a heavy gray fog was rising and enveloping everything in its deadening blanket. The fog penetrated into the doctor's lungs and an intolerable pain, as though hot irons were searing the tissues, tore him. He tried to cough, but the sound could not force its way through his stiffening lips. Darkness closed in on him and he swayed. He was dimly conscious that the Russians were swarming about Feodrovna, knives and clubs in their hands. Then through the night came an ear-splitting crack and a flash of orange flame. One of the Russians toppled and fell forward, knocking the weakened doctor down as he did so. Again came a flash and a report, and to the doctor's fading senses came a sound of shouts and pounding feet. Over his head another flash split the fog and then darkness swarmed in and with a sigh of pain, Dr. Bird let his head fall forward on his chest.

He recovered consciousness slowly and looked about him. He was in a white bed in a strange, yet somehow familiar, place with a ray of light of almost intolerable brilliance boring its way into his brain. He tried to raise his hand and found himself curiously weak. With a great effort he raised his hand until he could see it and let it fall with a cry which came from his lips only as a feeble murmur. His hand was thin almost to the point of emaciation. Blue veins stood out on the back and his long, slim, mobile fingers, the fingers of an artist and dreamer, were mere claws, with the skin drawn tight over the bones.

A man in a white uniform bent over him. "Drink this, Doctor," came in soothing tones.

He was too weak to protest and he managed to sip the drink through a glass tube. Slowly he felt himself sinking through vast unexplored reaches of darkness.

How long he lay there he did not know but when he again opened his eyes the light was no longer over him. He strove to speak and a husky

whisper came from his lips. A tall woman in white hastened forward and bent over him.

"Where am I?" he asked with difficulty.

"You're in the hospital at Aberdeen Proving Ground, Doctor," said the nurse. "Everything is all right and you're doing splendidly. Just don't excite yourself and you'll get well in no time. Captain Murdock will be here in a few minutes."

"How long have I been here?" he asked.

"Oh, quite a while, Doctor. Now don't ask any more questions. You must rest and get well and strong, you know."

Strength seemed to be surging slowly back into the doctor's wasted frame. His voice came clearer and stronger.

"How long have I been here?" he demanded.

The nurse hesitated, but her face suddenly cleared as Captain Murdock entered the ward.

"Oh, Captain," she cried, "come here and take care of your patient. He won't keep quiet."

"Out of his head again?" asked Captain Murdock as he hastened forward.

"No more than you are," came in a husky whisper from Dr. Bird's lips.

Captain Murdock looked quickly down and smiled in relief. "You'll live, Dr. Bird," he said. "Just take it easy for a few days and then you can talk all you want to."

"I'll talk now," came in stronger tones from the doctor's lips. "How long have I been here?"

Captain Murdock hesitated, but a glance at the doctor's flushed face warned him that it was better to give in than to fight him.

"You were brought in here two weeks ago yesterday," he said. "It was touch and go for a while, and, but for the treatment you devised, you would have been a goner. We fed you X-rays until I was afraid we would burn you up, but they did the business. It will cheer you up to learn that every man who got your treatment is either well or on the high road to recovery."

"The plague?" asked the doctor faintly.

"Oh, that's all over, thanks to you. It reached the post that night but under the influence of the daylight blue bulbs you had installed, it lost most of its virulence. We had a lot of sore throats in the morning but there wasn't a man dangerously sick. It all faded when the sun hit it."

An orderly entered and spoke in an undertone to Captain Murdock. The surgeon hesitated for a moment, his eyes on Dr. Bird, and then nodded.

"Bring him in," he said quietly.

A small, unobtrusively dressed man entered the room and stepped to the bedside. Dr. Bird's face lighted up in one of its rare smiles and he strove to raise his hand in greeting.

"Carnesy, old dear, I'm glad to see you got out all right," he whispered. "I was afraid your mask wouldn't hold up after the trouble you had with it. Tell me what happened that night."

Carnes glanced at Captain Murdock, who nodded.

"I went down to the narrows and watched, Doctor, and when the Russian boat passed, I started to make my way back to you. The tide had come in and I had to make quite a detour to get to you. I got there a little later than I liked but still in time to do some good. You were down and Miss Andrews was standing over you with a bloody knife in her hand, fighting like a wildcat. I started shooting and ran in yelling as loud as I could. I managed to plug three of them and I guess they thought I was a dozen men. I tried to make enough noise for that many. The rest took to their heels and Miss Andrews and I rigged one of their protectors over your face and dragged you to the scooter. The rest was plain sailing. We brought you in and Captain Murdock did the rest. That's all there was to it. If I hadn't been so slow, I could have driven them off before they opened that box and saved you all of this."

"Thelma?" asked the doctor faintly.

"Oh, she's none the worse, Doctor. I want to apologize to you for the poor opinion I had of your judgment. That girl wasn't recognized; she recognized Denberg on the streets of Washington and deliberately put her head into the lion's mouth by declaring herself. She got their whole plan and went along to try to checkmate them. If she hadn't started knifing when she did, the devils meant to hold your head directly over that box and it would have been just too bad."

"What was in the box?"

"She found that out. It was some kind of a microbe that Saranoff developed in a Belgian laboratory which does something to the oxygen of the air. You'll have to get Dr. Burgess to explain that to you later; he has some of the bugs shut up for you to play with when you get back on the job. When we found that you were knocked out, Davis got him to come down from Washington to take charge. He has been running ray machines over the swamps for two weeks and says that every trace of the bugs are gone except those he has in the laboratory."

"Saranoff has more."

"No, he hasn't, thanks to Miss Andrews. Every day they started a fresh colony, leaving one lot back to start the next brood with. She tipped us off where they were kept and Bolton and Haggerty raided and got the lot and turned them over to Dr. Burgess."

"That's enough for to-day, Mr. Carnes," interrupted Captain Murdock. "You can see Dr. Bird to-morrow, but he has had enough excitement for to-day."

As Carnes took his leave, the nurse spoke to Captain Murdock. He looked carefully at Dr. Bird and nodded.

"For one minute. No longer!" he said.

The nurse stepped to the door. Into the room came a slim young woman of remarkable beauty, her eyes glowing as with an internal light. Her parting lips of startling redness showed strong white teeth. Her eyes grew misty as she leaned over the doctor's bed. Dr. Bird blinked for a moment and his face grew stern.

"Miss Andrews," he said in a husky whisper, "Mr. Carnes has told me what you did. In my service, success does not excuse disobedience. I thank you for your services which may have saved my life and which may have put me in worse danger. In any event, please remember two things. Unless you can learn to entirely suppress your emotions and learn that I will tolerate nothing but implicit obedience, your usefulness to me will be at an end and I will no longer need you."

The happiness faded from the girl's face as if by magic and an expression of absolute immobility took its place. Her eyes looked as though a curtain had been drawn over them.

"Yes, Doctor," she said in a toneless voice as she turned and left the room.

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