

Water Crisis

Day Zero

CHAPTER 1

"Senator, I don't believe you understand the seriousness of the situation," said the man seated at the table in front of the panel of US Senators in the hearing. "This is a potential world crisis of epic proportions. There will be famine and unrest because of this. There will be mass migrations and there will be war. This is a national security problem."

The United States Senate had called a series of hearings on problems with freshwater supplies and related issues, bringing in a series of speakers. This wasn't the most high-profile hearing the senate had ever called, but it still had a significant number of attendees, both from the press and the public. It was effectively a hearing on climate change and many members of the Senate panel remained skeptical. At least that was the way the press spun the meetings. So did the public information staff members of many of the senators, opposed and supportive, who wanted to make sure their constituents knew how their respective senators felt.

The 13 senators on the Energy and Natural Resources committee were seated behind a raised horseshoe-shaped dais with a single table in the middle of the half circle for the person testifying to sit. For Dr. Bruce Phillips, it was far more confrontational than he expected it to be. It felt more like he was being interrogated, than simply there to share his expertise. He had blanched when he first began speaking and lost his train of thought momentarily, distracted by the sound of the photographers' shutters rapid firing in his face.

"Dr. Phillips. I hear hyperbole when you are talking. We are here for facts, not false assertions and panic stories. I can go to the next room, turn on a faucet and have all the fresh, clean drinking water I want. I have trouble believing that water is going to be in such short supply that people will go to war over it," said Senator Mitchell Highgate.

The chairman of the committee, Bruce thought, couldn't be a more stereotypical US Senator if they had sent him down from central casting. He had graying hair, slicked back, and a jowly face. He was large and thick, wearing a three-piece suit over a once-solid frame that had begun to deteriorate in his later years. He did have a voice, though. He could project to the back row of the conference room without a microphone.

"Senator Highgate, I understand it is hard for the average American to understand the coming water crisis in the world but imagine if the water coming out of that tap in the next room had lead in it. Or better yet, smelled like licorice and you had no idea what had gotten into it? What do you think would happen next? Those situations both happened right here in the United States. The water in Flint, Michigan had high levels of lead and no one knew it until people started getting sick. That mess is still unresolved, and it won't be for a while."

Bruce was the opposite of Highgate. Slender and a young-looking 40, he had short-cropped blond hair and inquisitive eyes. He spoke with confidence, but he had to lean in close to the microphone to be heard. He was used to his laboratory, not speaking in public. His normal speech consisted of explaining his research papers to small groups of colleagues.

"In West Virginia, in 2014, a chemical holding facility spilled a chemical compound called MCHM into the Elk River," Bruce continued. "The spill site was just upriver from the intake at the regional water plant. As soon as they realized what had happened, the water company sent out alerts to more than 100,000 customers, involving more than 300,000 people. Each of those families got emergency notifications not to drink or cook with, or even bathe in, the water until further notice. That night there was a run on bottled water at every store in the area. Over the next day or two, water was trucked in from outside the nine-county region and there were water distribution points all over. It took more than a week to get the chemical flushed from the system and for people to go back to using their tap water. Many residents still don't fully trust it.

"Those are just two examples in the last few years from right here in the United States. Both cases involved relatively small populations and water could be trucked in to alleviate the problem. In West Virginia, eventually, the river cleaned itself as the water flowed downstream and the contaminants were diluted. Things returned to normal. But what about a place without the resources and infrastructure to absorb that sort of blow?

"Cape Town, South Africa, a city of four million people ran out of water due to drought and mismanagement. There was water rationing and mass migrations by citizens to other parts of the country. That was by the people who could afford it. They called it Day Zero, the day the reservoir ran out of water."

"With all due respect, Dr. Phillips," another senator on the panel broke in. "How is this our problem? I get the two examples you mentioned where American citizens were affected, but one was addressed, and we are working on the other one. But alarmist stories of Day Zeros in Africa are not the problem of the US government. We have been hearing those stories for too long. This sounds like another way you're trying to convince me that the climate is changing and it's because my mama used too much hairspray when I was a child. It seems like I am always supposed to believe it is all my fault."

"Senator, I can't speak to your level of fault in this situation but let me give you another example and maybe that will illustrate the point more effectively. In the 1930s, this country suffered through the period known as the Dust Bowl. There is no question that poor farming practices and mechanization contributed

to the problem. We plowed up grasses that would hold moisture in the soil and converted arid grasslands to cropland, even though it normally only got 10 inches of rain a year. Everything was fine, if stretched, when it was raining. But then there were droughts in 1934, 1936 and again in 1939 and 1940.

"The soil fell apart and high winds blew topsoil as far east as New York City and Washington D.C. Perhaps the worst part of this crisis was the plight of the water immigrants. Tens of thousands of families fled their homes and headed west to California or east to the coast to find work and food for their families. Again, this was a terrible time for a segment of the population, but at least in the United States we had the additional resources to absorb those people. Even then, it was difficult. There were riots and discrimination against Okies when they arrived in California. They were taken advantage of and viewed as people coming to steal the jobs of people who were there first.

"Now, Senator, think of that same situation in a place like the Middle East where water is already at a premium. I will also assure you that most of those countries don't use nearly as much water as we do per person or per family. They can't just cut back a little bit and solve the problem. There isn't any fat in the system to mix metaphors. That's a recipe for civil war, just like you've already seen in Syria and other parts of the region.

"The countries that have handled their water efficiently, and put plans in place, will be overwhelmed by water migrants looking for water and a place to live, just like the Okies in California. But those people will then be mistreated or looked down on, opening the opportunity to radicalize them and creating new terrorists. I am afraid of when Day Zero means there is not enough freshwater to drink, anywhere in the world."

"Dr. Phillips, I appreciate your concerns here, but I still just don't believe you or that this could even be our problem," Senator Highgate said. "I was under the impression your testimony here today would be of a more technical nature, not about social engineering and public policy. I think I have heard enough for now. The committee would like to thank you for your time, sir, but we are going to take a short recess and move on to the next speaker on the panel."

Bruce sat stunned at the conference table for a moment as it sunk in how quickly he had been brushed aside. He was an international expert in water supply systems and hydrology. He had been invited to address the panel because of that expertise. Bruce wasn't sure what the senators expected him to talk about, but in his mind, the coming water crisis was the most important thing facing the world.

Just as in Cape Town, the world was going to face a Day Zero if they didn't do something to fix both water supply and demand. Long before that day arrived, though, Bruce knew there would be turmoil and war, just as he predicted.

"It's just not real to them," Bruce said, talking to himself as he gathered his papers and prepared to move out of the way for the next speaker on the panel.

###

Mike Scott had positioned himself along the right side of the senate hearing room, so he could watch the proceedings, but he also wanted to watch the man testifying. Mike was working on a story for *First Account Magazine*. Several sources told him he needed to speak to Dr. Phillips, but he hadn't been able to connect with the man yet. When Mike heard about this senate panel and Dr. Phillips' testimony, he immediately made plans to attend.

Mike was an international photojournalist. He had won awards, including a Pulitzer prize, for his work around the globe. He had covered war zones and governmental coups. He had also made a name for himself as someone who was particularly interested in the ocean. A diver and underwater photographer he did his best to work in opportunities to go diving when he could.

The world of journalism was blurring. It was rare for a journalist to be a writer or a photographer. In the age of digital journalism, he would often end up making photographs, writing stories and shooting and editing video, all for upload to a website long before any of it made it into "print" in a magazine.

A month before the senate hearing, Mike had pitched his editor on a story about water crises facing the world. Because of his long history of success, he was given a lot of leeway in what he worked on. This story had struck a chord with his editor and the rest of the magazine leaders. His story pitch had morphed into a special edition of the magazine. Now, several teams of photographers and writers were working the story from multiple angles.

As the hearing recessed, a crowd gathered around Dr. Phillips. Mike held back. He hoped to speak to the man, but he didn't want to pressure him. Mike's impression was the man was a scientist. He didn't look entirely comfortable in the bright hot spotlight of a congressional hearing. *Who was?*

Finally, Mike saw the man break away from the crowd of reporters looking for one last quote or exclusive comment that would make it seem like they had done something special. That was never Mike's journalism. He didn't question the earnestness of the reporters in front of him, but he wasn't here for just a quote or two. He wanted to really talk to the man.

Mike slipped into the hallway to catch Phillips there. He wanted to set up an appointment to come see the man's research. He was interested in doing a bigger story. Not about the congressional hearing and the inevitable rejection of his science. Mike saw Phillips come into the hallway alone looking lost. He made his way toward the scientist to talk to him about a story when a well-dressed older man approached with a man-servant/body guard in tow. Mike slowed his step to see what was going on.

The older man stood out, even among the power brokers in the halls of congress. Bald and brawny, he reminded Mike of Daddy Warbucks from *Annie!*. All things considered, especially given their location, he might be the modern version of the character. The assistant was equally well-dressed and had the look of a valet or a driver, but Mike knew the type. He had seen too many of them on battlefields around the world.

He was hard and had a no-nonsense look about him that Mike instantly recognized as danger. He likely wasn't armed, because of the congressional security, but Mike was confident there was a shoulder holster fitted neatly under his tailored suit coat. He wasn't being menacing, in fact he was smiling, but Mike was still sure the man's job was security.

Dr. Phillips looked hesitant for a moment and then nodded his head. In seconds, the threesome turned and headed down the hall toward a door and out of the building.

"Damn. I'll have to email his lab and set up an appointment," Mike said to himself. He had really wanted to talk to the man, but he missed his chance. He didn't have time to wait around to see if Dr. Phillips showed back up, though. He had to get to Moscow.

###

"Dr. Phillips, thank you for joining me. I know this is a touch unusual, but I needed to get to the airport. I promise, once we are done talking, my driver will take you back to your hotel or wherever you need to go."

Phillips had just settled into the back of a limousine with the man who approached him in the hall outside of the congressional hearing. Chalk this up to another new experience for the day. He didn't know what possessed him to agree to "take a ride" with the stranger, but he hoped he wouldn't regret it. He had watched enough mobster movies that the whole idea had a bad connotation.

Fortunately, the extremely well-dressed man who joined him in the car didn't seem to be the least bit threatening. He could hear touches of a foreign accent in the man's voice, but it was very vague, and Phillips couldn't place it.

"Thank you for your interest in my work, Mr. umm, I'm sorry, what did you say your name was again?" Bruce asked. He was still overwhelmed by testifying in front of the congressional committee. And more so by their flat-out rejection of everything he had to say.

"I have been following your work for a while now. You said everything in the hearing that I expected you to say. I know you aren't a politician, but I have to say the committee members' reaction to your testimony was exactly what I would have predicted as well. Which is why I wanted to talk to you."

"What can I do for you?"

"I know this will sound like a cliché, but honestly I have a proposal for you. This is truly not what you can do for me, but what I hope to do for you," the man said. He continued without waiting for Bruce to respond.

"We have limited time, so I hope you don't mind if I get right to the point. I share your concerns about access to clean water for the world. I see it as the coming great crisis for the planet. As you well know, water refugees are destabilizing the world. As you said, it is a national security issue. My proposal is to fund your research and support you however I can. I have a laboratory already set up, but I need you to direct it for

me. With that support, I believe you will be able to impress on the world more effectively the dire situation we all face."

"That's very generous of you, but I already have a job. The university is very supportive of my research into world water issues."

"Yes, I am sure you believe they have been, but in addition to your research, you also have to teach and publish. I also realize that the university pay scale for a professor, even a full professor, isn't all that generous. My proposal is simply this. I will triple your current salary and remove the obligations on your time that take away from the important work you are doing. You will have a full staff to support you and a nearly unlimited budget for your research. When you are ready, we will publish your findings and, with the support of my companies, will make sure the word gets out.

"Speaking to world politicians who are afraid of their own shadow, not to mention the electorate and the donors who keep them in office, isn't an effective way to go. I will put my company's considerable weight behind the dissemination of your findings. It is all about public relations and reaching as many people as possible. My thought is to create a wave of support, please pardon the pun, and make it so obvious that the world leaders can't help but pay attention."

"That is incredibly generous of you. I hardly know how to respond."

"Let's be honest Dr. Phillips, I have just offered you every researcher's dream. Just so you know, I've investigated your background and know you don't have any family to worry about so there is no one who will miss you if you suddenly take off. I also know you aren't teaching classes this semester so there is no problem for you walking away from your teaching duties."

"I, well, I don't know..."

"I know this might be a bit overwhelming and apologize if I've made you uncomfortable, Dr. Phillips. Like I said, I am working under time pressure," the man said. He glanced out the window of the limousine to note that they were approaching the airport and he needed to emphasize his point. "You don't need to give me an answer just yet. I will have my assistant contact you at your hotel and arrange for you to visit my laboratories where we can discuss this further. Do you happen to have your passport with you?"

"I do have it..., but just where are your labs?"

"I have facilities set up all over the world, but I would like you to take over the lab in Basel, Switzerland. By the way, the position includes housing, a car and a generous regular stipend that will cover all expenses like food and whatnot, beyond your regular salary."

The car came to a halt outside a private terminal at Washington's Dulles airport.

"Thank you for taking the time to meet with me. My assistant will be in touch later today to make the travel arrangements. Now, if you will forgive me, I must get to my plane and be on to my next meeting. Thank you again, Dr. Phillips."

The man reached out his hand and gave Bruce a firm handshake and then he was gone.

Suddenly alone in the back of the limousine, Bruce felt like he had been steamrolled for the second time in the same day. The offer the man just gave him was like a gift from heaven. In truth, the university was reluctant to continue funding his research, even though he was certain he was close to a breakthrough. The director of his department was questioning his expenses and wanted to see more published papers coming out of his work. Their last meeting had an ominous overtone.

The idea of being able to walk away from that stress and do pure research in a well-stocked lab without worrying about making ends meet was exciting. He planned to take the man up on the offer of a visit and most-likely would accept the offer. How could he not?

The driver got back in the car and headed back into the city to deliver Bruce back to his hotel. It wasn't until they were nearly back into the city before Bruce realized he didn't know his mysterious benefactor's name.

CHAPTER 2

Moscow water system reeling with contamination

UP News Service: The Soviet era continues to haunt Russia and the Moscow region, and it appears that legacy likely will continue for generations. This time it's in the very water Muscovites drink.

Despite a generous annual snowfall and rain, fresh water suitable for human consumption is in short supply in central Russia. This is somewhat surprising since 20 percent of the world's supply of fresh water is in Russia. Almost all of that is in the isolated Lake Baikal, nearly 3000 miles from Moscow.

The Moscow region relies almost exclusively on surface water to supply drinking water to its more than 17 million inhabitants. Surface water is rain and snow melt along with lakes and rivers. Many of these sources are contaminated by industrial pollution left over from the Soviet Union.

In its transition to a market economy since the breakup of the Soviet Union, Russia has spent precious few resources cleaning up the pollution and waste left behind.

Located 450 miles from salt water supplies, where desalination projects could deliver potable water to the capital city, Moscow could run out of fresh drinking water by 2030.

###

Fluffy white snowflakes drifted down out of the pitch-black sky covering the red bricks of the square and the historic buildings all around him. They lent an air of history and magic to the scene, although Mike was sure that feeling had more to do with his American imagination and romanticizing of the place. Red Square in Moscow, Russia was a skatersplace filled with memories and history.

The Moscow Kremlin was to his right. It was a massive walled complex with dozens of buildings inside. It served as the home to churches, theaters and museums as well as the seat of the Russian government. The Russian president no longer lived inside its walls though.

In front of the high red-brick wall that faced Red Square, stood a squat solid-looking building. It was the permanent home of the wax-like corpse of Vladimir Lenin. Mike had toured the facility once, early in his career, but tonight it was locked up tight. That was fine since the last thing he wanted to see was the creepy, preserved homage to the past.

To Mike's left was what was known as the GUM Department Store during the Soviet Era. GUM was where the Communist Party members shopped for foreign goods not available to the common Russian. It had been updated and converted into a high-end mall, still selling expensive goods from Europe, but now mostly to a different sort of Russian. Those with money. The *new* Russians.

Over the years, oligarchs had taken over the older Soviet companies and rebuilt them for themselves. Now, that group was itself being pushed out by a newer generation of entrepreneur less likely to be interested in collecting wealth in the form of land and commodities. They were interested in lifestyles that involved digital economies and trade all over the world. Like their predecessors, some of their business was perfectly legal and some of it less-so.

In front of GUM, directly on Red Square was an ice rink erected for the winter. It was nearing time to close it down for the night, but there were still skaters on the ice as Mike walked by.

Directly ahead of Mike was one of the most iconic pieces of architecture in the world. A single glance at St. Basil's Cathedral could tell anyone in the world where you were. Built in the 16th Century under the orders of the Russian Czar Ivan the Terrible, it contained 10 chapels in one structure. The distinctive onion domes and fantastic colors on them were instantly recognizable.

Mike stood still and soaked in the history of Red Square for a moment. Too young to really remember the Cold War himself, he knew the history of the place all-too-well. He had seen videos of the parades of Soviet military hardware in front of the assembled Communist party leaders observing the spectacle from a platform on top of Lenin's tomb.

More recently, he had witnessed protests and rallies on the square while doing his job. In his mid-40s, his career had taken him all over the world, photographing conflicts and human-interest stories. Today was no different, although he didn't expect to use his camera much tonight. He was on Red Square for a meeting with a source to talk about water.

Early in Mike's career, in the mid-90s, he had been sent to Moscow on a job. At the time, there were only a few restaurants in the city. You had to make reservations a few days in advance or they wouldn't have enough food on hand. Mike laughed to himself at the irony of that situation considering where he was heading. He was meeting his contact at an all-you-can-eat sushi restaurant just off Red Square. That was something he never imagined he would see in Moscow.

On his first visit, Mike had predicted it would take Russia 25 years or more to catch up to the western world. They did it in 15, but not without awful growing pains, including crime and astronomical inflation. The iron rule of autocratic leaders had helped drag the country and its people into the 21st Century.

Mike entered an old building adorned with neon and shook off the snow. He took off his Russian-style fur hat and ran his fingers through his dark wavy hair. He glanced in a mirror to his left and chuckled to himself. There was more salt showing up in his hair every day, but at least it wasn't going anywhere. He kept it cut short for convenience, but it wasn't receding. Mike left his coat with the coat check and looked around the room. Even at the late hour and with the weather outside, the place was bustling and hot. Crowds of young Muscovites huddled around tables talking and laughing. Mike searched the room for a moment until he found the person he was there to meet.

Dasha Krasnyev was one of those new, young entrepreneurs who made her money in software development. Unlike many of her peers, she was now branching out into other realms that didn't necessarily involve computers. Considering her newest venture was far removed from where the young woman started, Mike was sure she had some *official* backing either in the form of a corporate interests or government ones. Or both. They weren't always clearly separated in Russia.

"*Zdrastvoytia*, Ms. Krasnyev," Mike said as he approached the table. "Hello."

Even though the younger woman was expecting him, she gasped when Mike spoke. She had been looking at a menu, but Mike could tell she had a 50-yard stare. She was lost in her thoughts somewhere else, but Dasha recovered quickly.

"*Zdrastvoytia*, Mikhail. *Vi gavarayetse pa Ruske?*," she said smiling at him. "Do you speak Russian?"

"*Nimmoga. Ya plokha gavyayoo pa rooskeem*," Mike said. "A little, but my Russian is bad."

"No worries, Mikhail. We can speak English. I am honored that you at least try to speak a little Russian."

"I try to pick up words and phrases when I travel, but I've never been good with languages. I can hear them and understand, but I have a bit of a block when it comes to speaking them, I'm afraid."

"I am comfortable speaking English, so it will not be a problem," she said. "Won't you please join me?"

Mike had waited beside the table instead of taking a seat. He pulled his chair out and sat down.

"I see you looking at the menu. Are you planning to order, or simply sample the food as it comes by?" Mike asked. The restaurant had conveyor belts running throughout with small plates of food. If you saw something you liked, you simply took it and paid by the plate. They did offer specialty dishes, as well, that were more expensive than the average fare.

"I was just looking while I waited. I got here a few minutes early. I appreciate you taking the time to meet me here. I know it is late in the evening, but my office is not far away, and I make it over here from time to time."

"No problem, Ms. Krasnyev. It gave me a chance to walk down Red Square and watch the ice skaters."

"Please call me Dasha," she said. Mike knew Dasha was a less formal version of her real first name, Daria, something typically only used by friends and family. As a tech celebrity, the world had come to know her as Dasha.

"It will be my pleasure, Dasha. You can call me Mike if you want, although Mikhail is fine, too. That's close to what my fiancée calls me."

"She isn't American, then?" Dasha asked.

"No, she is from Italy."

"Yes, that makes sense. We like our diminutive names, but for some reason 'Mike' seems too abrupt. Mikhail sounds better to our ears."

"She has said something very similar to me," Mike agreed.

"If you don't mind, we can eat and talk. I am starved. I realized I have been working since early this morning and forgot to eat," Dasha said. She grabbed two plates from the conveyor and dug in.

While they made more small talk over their food, Mike observed the young woman in front of him. Dasha Krasnyev was tall and thin, with high cheek bones and a fine bone structure common to Russian women. She had her soft red hair pulled back in a pony tail. Mike knew the root of her name, Krasny, literally meant Red, but it also meant beautiful. Mike wondered if her hair color was natural, or an affectation to go along with her name.

"Please forgive my bad manners, Mikhail," Dasha said after polishing off four plates of sushi. "I didn't realize just how hungry I was."

"I understand completely."

The young woman pushed the plates away and Mike could see the gears in her mind shift immediately.

"If you're ready, let me tell you about my little project." Without missing a beat or even pausing to wait for Mike's response, she launched into a description of what she was doing. Mike was there for the big picture, so he didn't use a recorder or even pull out a note pad. He was simply there to find out more details.

Dasha explained that she had made a great amount of money very quickly in her career as a computer programmer. Just after graduating from Moscow State University, she had been the only programmer in her company to recognize a potential problem that could have cost the company billions of rubles. She fixed it on her own.

Despite the patriarchy, she was recognized for her achievement and aptitude. She quickly moved up through the ranks and within two years she oversaw the systems administration for an international conglomerate.

At that point, she got bored and chose to leave it all behind and create her own start up software company, taking the lessons she learned at her first company and developing software that other companies could use. Surprisingly, her original company was supportive of the move, helped her get started and bought the new software from her. They saw the potential to expand into other business realms as well as continuing to improve their own operations.

Dasha's own company exploded overnight and she became a billionaire in her own right, although a lot of her value was tied up in company stocks. She did have access to quite a bit of cash and she had decided

to travel for a while. Her company was quickly self-sustaining, and she put the day-to-day operations in the hands of her trusted team.

Unlike a lot of 20-somethings with large amounts of cash she chose to skip the party lifestyle and living large in places like Ibiza. Instead she decided to backpack for a while and see the world on its own terms. Of course, she could always check into a nice hotel and get a shower and a great meal. So, it wasn't completely roughing it, she explained. But she wanted to see how the world lived.

And that was when she learned about one of the greatest problems facing the world today; access to clean drinking water. "Some cities just don't have enough. Global climate change is causing droughts in once-fertile regions, drying up lakes and causing rivers to stop running. It is leading to the collapse of entire ways of life as people who worked freshwater fisheries no longer have water to drink, much less fish to catch and process. In other places, there might be water, but it is so polluted that it isn't safe to drink."

After six months traveling the world, she returned home with a new mission only to be hit in the face with the realization that her very own home city was one of those with drinking water problems. That was because of groundwater pollution from decommissioned factories and poor environmental controls.

No stranger to research, she dived into this new project. She wasn't an engineer or a scientist, but she was a problem solver. And she was rich. She got together with some of the best technical minds she knew and started working on solutions. Cleaning up the pollution in places like Moscow was a tougher issue, involving governments and liability issues, but she and her team came up with a solution that would solve many of the problems in places that didn't have water to begin with. They created a breakthrough in the field of water desalination.

"There are too many places where there is no drinkable water. Aquifers are contaminated or depleted. Did you know that water covers 70 percent of the planet, but only about three percent of it is freshwater? That makes it a severely limited resource and too much of the world goes without access to clean water," Dasha explained.

"I did know that. That's why I'm here actually," Mike said.

Without missing a beat, or even acknowledging Mike's agreement, Dasha continued. She was clearly passionate about this topic and spoke in a rush.

"You can create freshwater from salt water, but currently it is extremely expensive to do so. The process is relatively simple, but it takes a lot of energy to make it happen. You are either boiling the water and distilling it, or you are forcing salt water through a special membrane system that removes the salt and other minerals to make it drinkable. Both options take lots and lots of energy," Dasha explained.

Mike knew most of the background, but he had already realized he needed to let the young woman continue with her story.

"We looked at better ways to purify the salt water, but nothing came out of that. We could make marginal improvements, but it always came back to the energy requirement. Too many energy sources relied on

burning fossil fuels like oil and natural gas to make it work. Most of the places that need potable water are poor to begin with. Huge demands for oil would just make it impossible. Not to mention the pollution that all of that would cause. Or the pollution filters. Every new idea came with its own problems and costs. We weren't getting anywhere," she said. "That's when my team started looking at the problem from a different angle. We started investigating new ways to create the energy in the first place. We realized we could take it directly from the ocean itself."

This idea got Mike's attention. He knew there were several green energy efforts to use the constant motion of the waves and ocean currents in systems to generate hydroelectric energy. The ocean never stops moving, so many different researchers have developed systems to generate electricity through perpetual motion. He just didn't realize they had been so successful. He said so.

"Honestly, we made some real advances, but they aren't efficient. Don't get me wrong, there is tremendous potential there, and we are looking at using that energy to run our facilities before they get up and running. But we needed something more powerful and consistent for the actual water purification process. That's when we realized we could solve both problems with a single solution.

"My engineers and chemists created a system to break down the water into its individual components – oxygen and hydrogen – and create energy from the hydrogen that is released in the process. The sea water goes through several steps, but we are generating energy and clean water at the same time. Our only byproducts are oxygen and a very clean, edible salt that can be sold at market as sea salt. We have created a system to provide clean water with no outside energy. It is so efficient, at scale it will likely even be able to produce excess energy."

Mike sat stunned at the revelation. She had matter-of-factly just stated she had solved two world problems in one sweep. Access to clean water and energy from the same facility. There had to be a catch. He asked her that question.

"It's not cheap," she said. "Surprisingly, though, it's not any more expensive than a traditional water treatment plant to make freshwater safe for consumption, or the costs of an electrical plant burning coal or natural gas. Ours does both. Over a few years of use, it will end up making money."

Dasha finally took a breath from her explanation, looking at Mike for the first time. He had the feeling that she had kept that entire story to herself for a long time and was relieved to finally tell someone outside of her circle.

"From the sounds of what you just told me, this isn't theoretical. You said several times that you've already done it," Mike said.

"It is true. We created a small model in the laboratory to test the system, and now we are putting the finishing touches on a prototype plant in The Bahamas. It is not 100 percent functional, but it is close and already returning good results. We should be 100 percent operational in just a few days."

"That is phenomenal," Mike said. "How has word of this not gotten out? I would think the international media would be beating a path to your door."

"To be truthful, no one really gave us much of a chance of succeeding so we've been ignored. We have done our best to keep security tight, too. There will be elements who don't want us to be successful or who will want to steal the technology," Dasha said.

"I'm sure of that. I assume you have patented everything. Especially the energy processes. The water system will be the most useful to the world but creating energy from sea water will be huge as well. And probably more profitable," Mike said. In his mind he could see this young woman quickly becoming one of the wealthiest people in the world. And she wasn't 30 years old, yet.

"*Nyet*, none of it is patented. Remember I am a computer programmer. I come from a world that has seen the benefits of open-source code. When it is made available to the world, more great minds get involved and the advances come quickly, taking software to places the original designers never imagined. I expect to see the same with this technology. I have kept it secret until now because I wanted to make sure it works. Once the process is proven, I will release it to the world. I hope to see this system being used all over the world to help everyone."

Mike was stunned. His mind shifted from envisioning Dasha as one of the most powerful people in the world, to seeing her as the winner of the next 10 Nobel Peace Prizes and gaining sainthood while she was still alive. He laughed to himself at his imagination.

"So, why are you telling me all of this? I would think you would want to present this to the world at a massive press conference."

"I have seen a number of your stories. I know you care about the ocean and I thought you would be the perfect person to tell our story from the inside. Do you want to tour our facility and see how it all works?"

"In a heartbeat," Mike said without a moment's hesitation. "Where is it and when do we leave?"

"I thought you might be enthusiastic," Dasha said with a smile, that betrayed some relief as well. "Tomorrow if you are available. I am flying to our facility in The Bahamas and you are welcome to join me. One of the perks of owning my own company and being rich is I have my own jet."

"Well, that certainly makes it convenient," Mike agreed. He was grinning. Getting a scoop wasn't something he worried about at this stage of his career, but it was still exciting to be on the breaking edge of a news story with world-wide implications.

CHAPTER 3

Water refugees strain support; don't fit refugee definition

UP News Service: As global temperatures rise, and droughts increase, refugees are expected to put additional strain on already overcrowded cities and overtaxed water supplies in neighboring countries.

These displaced peoples are known as water refugees, or alternatively environmental refugees. As they leave their homes in search of water, food and opportunity, they are frequently met with anger and resistance.

Water refugees can be displaced within their own country or may attempt to immigrate across national borders. Both situations can lead to violence and discrimination.

The standard definition of a refugee involves fleeing from one region to another to avoid political discrimination or persecution. Even though the definition of a refugee has changed over the years, it does not reflect environmental reasons as a cause for persecution. Additionally, where many environmental refugees flee water crises but stay within their own country, they are not given refugee status and afforded protections by the international community or in some cases, even their own governments.

A recent study issued by the Pentagon indicated that water shortages and the ensuing refugees could become a national security issue in the next 20 years as the movement of more refugees create more stress in already burdened parts of the world. These refugee problems can lead to civil war like the seven years of war in Syria that continues to dramatically destabilize the region.

Additional wars in drought and famine-prone areas like the Middle East, North Africa and Central Asia could inflame the world in nonstop conflict, further destabilizing world economic markets and spawning world-wide recession.

###

Dr. Bruce Phillips cleared customs in EuroAirport Basel Mulhouse Freiburg in Basel, Switzerland and was immediately greeted by a driver holding a sign with his name on it. There was no question, he was being treated well. He was beginning to feel like a prince.

His host, Altere Corporation, had arranged for a First-Class ticket for him. Considering it had been booked the day before, Bruce was sure it wasn't cheap. Of course, he was thinking like a university professor. He never would have been allowed to fly anything other than coach and he was quickly coming to understand why several of his colleagues had gone over to private industry.

Bruce hadn't had much chance to research Altere other than combing through its website. He learned that the CEO was Vitaly Duntsev, the man who offered him the position in the car in Washington DC. Duntsev was a wealthy Russian businessman with connections to the government.

Everything Bruce could find out about the company was on the up and up. The company had offices in New York, Switzerland and Hong Kong, but the headquarters were in Moscow. They were involved in energy research mostly but had been making inroads into water research. Apparently, that was where he came in.

He had checked out the city he was visiting, too. If he took the job, he would be expected to move there. Basel was the crossroads of cultures, tucked where the borders of Switzerland, France and Germany met. Suburbs of the city were actually in those other countries.

Out the window of the limousine, Bruce saw a sprawling old city, with architecture that looked like it was hundreds of years old. He had learned that the city was constructed on original foundations laid down by the Romans. The central cathedral in the city, known as the Munster, began in 1019. The city was known as a city of museums as well.

In the 20th century, it became a center of the pharmaceutical and chemical industries, as well as banking. In the 21st century, it also became a focus for alternative energy sources including vehicles using natural gas, hydrogen and bio-gas.

Outside the city center, Bruce spotted new architecture, representing the modern business center that the city had become.

After turning up a long drive, the car stopped in front of a glass office building set on a well-manicured campus. A stunningly-beautiful blonde woman stood outside to greet him as he climbed out of the car.

"Greetings, Dr. Phillips," the woman said with only the lightest of accents. "I hope you had a pleasant trip. My name is Vanessa. I am Mr. Duntsev's assistant."

"Thank you, Vanessa. Everything has been great so far. Will Mr. Duntsev be joining us?"

"He will be here later this evening. He was called to Moscow for something that required his personal attention. For now, he asked me to see to your needs and to show you the lab."

Bruce moved toward the car's trunk to get his bag, but Vanessa stopped him.

"The driver will take care of your things. It will all be delivered to your hotel suite."

"Oh, thank you. Sorry, I'm not used to being treated so well."

"Dr. Phillips, Mr. Duntsev gave me specific instructions that you are to be treated as if you were him. He is very keen to make sure you join us."

"That is very kind of you. I appreciate it. Shall we get started?"

"Mr. Duntsev told me that you would be anxious to look around. Let's begin."

The tour was both exactly what Bruce expected, and more than he could have dreamed of at the same time. The offices were staffed with smart young people who moved quickly and efficiently. But the labs had him beside himself with anticipation. Every piece of equipment he had fought and begged the university to purchase for him, or at least borrow, was there and waiting on him. Plus, several more things he never expected to even get close to. He had never dreamed of asking the university to buy them, knowing the cost would make it impossible.

Talking to the staff in the labs, Bruce was overwhelmed with the response he received as well. They all knew of him and spoke to him with excitement over his research. They knew of his latest papers and began peppering him with questions. During one such impromptu discussion, Vanessa moved off to the side and took a phone call. When she returned she signaled to the scientists that she needed to have Bruce back.

"*Herr Doktor*, I cannot wait to begin working with you," a senior scientist said as Bruce walked away.

"This place is amazing," Bruce said, to himself and to Vanessa at the same time.

"I am glad to hear you think so, Dr. Phillips. I just spoke to Mr. Duntsev and he was very pleased with my report of your reception and enthusiasm. He told me to let you know that he is on his way here now and will be pleased to greet you in the morning for breakfast at your hotel."

"That will be fine, Vanessa. I look forward to seeing him as well."

"I am sure you are tired from your travels, though, so I have called for your car. Everything is taken care of in the hotel. You don't need to worry about a thing. If there is anything else you need, please don't hesitate to ask the concierge to get it for you."

Bruce could feel the jetlag setting in, but he wasn't sure he was going to be able to sleep tonight as he had a lot to think about. None of the questions running through his mind had anything to do with whether he would accept the position or not. In fact, that was a forgone conclusion. His mind was spinning with ideas and he couldn't wait to get to work.

CHAPTER 4

Raw water craze puts lives in danger

UP News Service: First it was organic food to avoid pesticides and then non-GMO efforts to stay away from potentially dangerous side effects. In both cases, the alternative was natural and non-hazardous so unlikely to harm anyone whether it was necessary or not.

The latest trend in "natural" foods has many health experts concerned, however. A group in California is promoting "raw" water as the new back-to-nature alternative food.

Raw water is untreated water. Water purification standards have been in place for years and are now controlled by the Environmental Protection Agency. They mandate that city water systems remove chemicals and heavy metals. More importantly, they require water systems to kill potentially harmful bacteria and organisms like cholera.

Since the mid-1940s, conspiracy theorists have questioned the inclusion of fluoride in water even though it is universally credited with improving dental health in the United States and other countries. This is the first time, however, there was a coordinated effort to undermine basic sanitation.

Like the anti-vax movements that have relied on distorted science or wild claims with no scientific foundation at all, raw water advocates claim their product is healthier. One of the ironies of raw water is that it is a boutique product and sold at premium prices.

Every year, around the world, 140 million people develop dysentery and 600,000 people die from it. Water blindness is caused by parasites in contaminated water, affecting 800,000 people.

In the United States, water from surface water supplies often contains storm water runoff that can include everything from fertilizer and farm runoff to motor oil and other contaminants.

Raw water proponents say they are drawing their water from deep water wells or from mountain streams far removed from potential contaminants. Water-borne bacteria can exist in these sources as well, especially in aquifers as the farm runoff seeps into these water supplies.

Acid rain and other contaminants can move through the water cycle and come down hundreds of miles away in remote streams. Testing has revealed water contaminants in just about every water system on the planet. Some are man-made, and others are naturally-occurring, but all are dangerous to humans.

###

Walking out of the restaurant, Mike noted the snow had stopped falling, but it had left a blanket of white on the ground. He marveled at the scenery around them. The buildings, churches and the Moscow Kremlin were hundreds of years old, but still in use and in many cases still being used for their original purposes. Or, at the very least, like in the case of St. Basil's Cathedral, they were now museums, but still open to the public. The lights that illuminated the historic buildings gave the scene a warm, nostalgic glow.

Mike was staying in a hotel two blocks away from Red Square so Dasha continued walking with him on the way. Her car was parked nearby.

"Mikhail, there is one thing I haven't told you, yet."

Mike had been daydreaming, lost in his thoughts about the beauty and history around him, along with everything Dasha had told him inside.

"What? Oh, sorry, what did you say?" Mike stumbled.

"There is something I haven't told you about. As you know I am very wealthy, but I do not have much influence. I think you Americans call it 'juice'. I do not have juice. There are some who do not like what I am doing, both with my software company and with my new water project. The few who know the details think my energy initiatives alone will be bad for Russia. They want me to stop my research," Dasha explained.

"That doesn't surprise me at all," Mike agreed. "You really should have security. There are a lot of people in the older energy sector who would not be happy about being put out of business."

"I do have a security detail, but sometimes I like to slip out without them. I am still young, Mikhail. Being followed around by mother-hens is like living at home with my parents. This is the first time I've been out without them in a long time and it feels so good. Not like this is a date, but to be out and have dinner in public and have a good conversation. It really feels good."

"That's funny. You sound just like a young American woman," Mike said with a laugh. And then he turned serious. "Have you had any threats?"

"Nothing specific. Or nothing the security people and the police could act on. Just some things that have made me nervous."

Mike and Dasha came to an intersection at Mokhovaya Street, near Okhotny Ryad. Moscow is infamous for horrible traffic even late in the evening. The road they approached was five lanes of traffic going in either direction and there were plenty of cars whizzing by at the late hour. Mike had taken a different route to get to the restaurant to meet with Dasha, so he was momentarily confused.

Dasha pointed to an underground crosswalk to get them to the other side of the road. Mike nodded, and they continued their walk. The walkway was an entrance to the Metro subway system that ran beneath the streets of Moscow. By taking the steps to the subway and crossing under the road, they could walk back up the steps on the other side and not have to cross the road and risk dealing with the traffic.

Entering the underground walkway, Mike could smell the musty air and the moisture from the pedestrian boots that tracked snow and mud onto the tile and concrete floor. He marveled at the white marble walls and the black and white checked marble flooring surrounding them. Art dotted alcoves along the walls. He shook his head, thinking nothing like this would survive in New York City. Instead of art, there would be billboards. He knew, of course, that not all the Moscow Metro stations looked like this either. Just the ones near the city center.

There were passersby moving in both directions and some vendors in small stalls selling flowers, purses, candy and even beer to the commuters on their way home. Mike even heard music playing in the distance, but he wasn't sure if it was a live musician or recorded music being played over a stereo system.

To keep from being separated, Dasha put her arm through Mike's as they walked and continued talking. That move likely saved her when the first attack came.

They were in the middle of the walkway, halfway between one side of the road above their heads and the other when four young men came running at them out of nowhere. The first one approached Dasha from behind and swept her legs out from under her. Holding on to Mike's arm kept her from falling directly onto her back. The second youth lunged at Mike with a knife. Dasha's partial fall pulled Mike to the side and out of the attacker's swing.

A third man came at Mike from the side, but he recovered from his initial surprise at the assault and twisted to face off to the man before the attacker was able to close. Mike wasn't a martial arts master or a trained soldier, but he had been involved in his fair share of altercations. Some days, he would say it was more than his fair share.

The third attacker swung his own knife at Mike with a big swing from the side. Mike saw it coming and was able to duck under the swing and then strike the back of the man's arm, driving it past Mike's head. As it happened, the original attacker who came at Mike stepped forward. The errant knife swing continued past Mike and hit the first attacker in the chest.

Not waiting to see what happened next, Mike raised up from his crouched position and hit the second man with an upper cut to the jaw. The attacker's head snapped back, and Mike saw his eyes roll back in his head. The man was out of the fight. At least for the moment.

Then Mike heard a scream.

Spinning, Mike was surprised by what he saw. He hadn't had time to worry about Dasha as he was dealing with the two men with knives. Hearing her shout focused his attention on the fear that the other attackers had hurt her. As it turned out, he didn't need to worry.

Dasha had been taken completely off-guard with the leg sweep, but she caught her balance quickly and turned to face the two attackers who came after her. Her shout wasn't fear or pain, but anger and aggression. One man was already down on the ground unconscious and Dasha had the last of the four attackers in a choke hold. She let his body fall the ground once he lost consciousness.

"Wow!" Mike said.

Dasha was panting from the exertion, but she smiled at Mike.

"That's why I don't like security. I can take care of myself."

"I see that. But I think we need to get out of here." Mike looked around at the men on the ground. Two of them were starting to move around. The one with the knife in his chest was probably out of commission for a while, but the other two would be trouble again before long. "I don't think these were just subway muggers. They didn't try for money or your purse. They just attacked. Whoever sent them might send back up."

"You're right, Mikhail. I didn't see that. This way!" Dasha took off running, but not toward the other exit across the street from where they started. She turned and ran toward the Metro train.

Mike hesitated for a moment and then realized she was right. If someone sent these men, like he feared, there was a good chance they were watching above ground. No doubt there were men on both sides of the road, where they had come down and where they planned to come out. The assailants would eventually figure out something had gone wrong and come into the underground to check it out for themselves, but not before Mike and Dasha had gotten on a train and could end up anywhere from that point.

They hurried through the turnstiles. Mike had just arrived in Moscow and hadn't had time to even purchase a Metro card, so Dasha waved Mike through with her own pass and then pulled out a second card for herself.

She looked at the spaghetti map of trains on the wall. They were on the Green Line but could easily make connections to the Red and Blue lines from where they were. They could go anywhere in the city of 10 million people and effectively be lost in minutes.

"Where to?" Dasha asked. "I'm not used to fleeing from criminals, especially in my own city."

Mike thought for a moment before he answered.

"Unfortunately, this is not the first time in my life I've had to run from criminals," Mike said. He tried to make the answer sound light. Dasha had handled herself extremely well when they were attacked, but he doubted she had much practice at dealing with groups of men wielding knives. She was holding it together, but he needed her to be strong for a few more minutes. "Not far. I don't want to get too far away from here. Let's just hop one station and then we can work our way back to your car. Once they realize we're gone, they won't have any idea where to look."

"That makes sense, Mikhail," she said. Then she glanced around to get her bearings and began heading toward the appropriate train. They would get on the Green Line and then jump back off the train at Teatralnia Station. Leaving Red Square minutes before, they had headed north and west, but now the train was taking them back to the south and east, toward Red Square again.

Just as they arrived at the platform, the Metro subway train arrived. They quickly jumped on, moving away from the door toward two seats in the middle of the car. There were some other passengers around, but no one reacted to them. Someone had to have seen their fight on the upper floor, but so far there hadn't been any police response.

They both dropped into the molded fiberglass seats of the Metro train. As soon as the subway train doors closed, and the train pulled away from the platform, they both breathed easier.

Dasha studied the Metro map for a moment.

"Mikhail, instead of getting off at the next stop, my apartment is very close to the Novokuznetskaya station on this same line. We can be there in just a few more minutes if we stay on this same train."

Mike considered it for a moment. If they were planning to attack Dasha while she was out in public, heading home was probably not the safest idea. On the other hand, her security team would be there and that meant back up.

"Okay, that makes sense, but you need to know whoever set up the attack might be there waiting on us. Call your security people and let them know what happened. Have them meet us somewhere and tell them to come armed for bear," Mike said.

"I will call as soon as we get off the train. The service is not very strong here in the Metro," Dasha said. "But what does this mean, 'armed for bear'?"

Mike laughed. "It means tell them to bring the big guns and be prepared for a fight. I hope we can get you somewhere safe without any more trouble this evening, but I'm not betting on it."

"Da, I agree with both things." Dasha slumped back in her seat and stared out the window of the subway train.

Mike decided to let the young woman relax. He was afraid their evening wasn't over, and he needed her to be sharp. He would talk to her shortly, but first he needed a plan of his own. They had no way of knowing what was waiting for them when they got to the station or even whether the men who attacked them had help or were acting on their own. The foursome might have been it, but Mike doubted it.

"Dasha, I need you to focus. We are almost to the station. I know this is your home ground and you are probably already imagining going straight to your apartment and feeling safe. We need to play this smart. Tell me about what we'll see as soon as we get to the street."

"It is a very nice neighborhood. There are large buildings with completely remodeled homes in them. These aren't the old Soviet-era apartments. There are coffee shops, restaurants and stores close by the Metro station."

"How far is it to your apartment?"

"A block away along *Ulitsa Pyatnitskaya*. That is the main road in front of the station."

"Is there a coffee shop or a restaurant nearby where we can meet your security people? I want to stay in public places until we have some support," Mike said.

"There is *Taverna Taras Bulba* beside my building. We can go there. I am sure there is a crowd of people there tonight."

"That sounds perfect."

The train pulled into *Novokuznetskaya* station and Mike motioned for Dasha to stay seated. He wanted to make sure no one was on the platform waiting on them. He moved toward the doors and looked around to see if anyone was acting suspicious, waiting on them without getting on the train, but everything seemed to be clear. He gestured for Dasha to follow him and they got off the train just before the doors closed and the train left the platform.

Dasha immediately led Mike toward the proper exit. As they reached the upper floor, Mike raised his hand and then pointed toward an alcove.

"It's time to call your security people and tell them you are in trouble. Let them know where you are and that you think someone might be waiting on you outside your apartment."

"Okay, I will do that, Mikhail. I am not looking forward to this call, though. They will scold me for running off without them."

"I hate to say it, but that is what you pay them for. And from the way tonight has gone, it seems like they would be right."

"*Eta pravda*. That's true," she said. "Now, I do feel like a child calling her mother."

Dasha took out her mobile phone and dialed her head of security. Mike couldn't follow the conversation in Russian, but from the speed and tone, he guessed it went much as she expected it would. The security chief was scolding her for running off.

Mike smiled. He had often worked with important people who chafed at the idea of having security, right up until they needed it. While Dasha talked, Mike scanned the area to see if anyone was acting suspiciously, but everything seemed quiet.

"Victor and his men will be here in a few minutes. They have been out looking for me and are near the city center," Dasha said when she hung up the phone. "He agreed that we would meet at the *Taverna*."

It was time to head out. There was a chance they were alone, and no one had followed them to Dasha's home. There was also a chance that the men who attacked them earlier were simply muggers and had nothing to do with threats Dasha had received. Mike doubted both of those scenarios, though. This was the first time she had been out without her security detail. He knew there was a better chance that someone had been watching her, waiting for the chance to strike.

"Do your best to act casual. Let's walk down the street arm-in-arm like a couple out for an evening stroll," Mike said. "Do you have a hat or a scarf you can put over your head? Something that will give you a bit of a disguise?"

Dasha dug into her purse for a moment and found a scarf. She wrapped it around her head and neck. "I feel like a babushka like this."

"Then I will be an old grandfather walking with you," Mike said. He had a Russian fur hat with him that he pulled down low over his ears.

Outside the Metro Station, Mike did his best to look around without being suspicious. He slumped his shoulders to try to look the part instead of a 6'2" American. Dasha slipped her arm through his and gestured the direction they needed to go to get to the tavern. The sky was clearing making the temperature drop. The snow crunched under their feet as they walked.

Another couple and a group of young people were outside on the streets. Mike knew that was typical. Russians didn't let a little snow stop them from going out, often walking wherever they were headed. If the snow or the cold kept them inside, they would be locked away six months out of the year.

The tavern was a block away and Mike began to relax. If they could make it to a public place, they had a good shot at waiting until the cavalry arrived.

The sound of footsteps running in the snow behind them immediately put Mike back on the defensive. The person was coming up behind them fast and Mike pushed Dasha against a building, shielding her with his body while he took up a defensive posture. She could take care of herself, she had proven that, but he wanted to make it harder for any attacker to get to her first. She was the one they wanted, and he was going to make it difficult for them.

"*Pomedlenneye. Podozhdi menya.* Slow down. Wait for me."

The young man ran past Mike and Dasha without hesitating. He was a straggler catching up to his friends.

Mike looked at Dasha and they both started laughing. It felt good to bleed off some of the stress.

Entering the *Taverna*, the hostess recognized Dasha and gave them a booth against a wall. Mike was relieved they could see the entire place. They had made it there, but they weren't out of trouble yet.

Dasha ordered drinks and took her scarf off her head.

"You never told me who is after you," Mike said when they got settled.

"Remember I said I have money, but no juice. There is a man who is well connected with the highest levels of government and is very rich. His name is Vitaly Duntsev. Much wealthier than me. I don't know the word in English."

"Oligarch. A person outside the government with the authority of it. Usually a billionaire. The fall of the Soviet Union made many of them when they privatized businesses and that sort of thing. What does Duntsev have against you?"

"I don't know exactly, except he is involved with oil and natural gas drilling among other things. I believe he doesn't like the energy my project can produce. He hasn't said anything to me directly, but he has caused me problems with the government. I can't connect him to the threats against me, but I am certain he is behind it."

"That makes sense. He sees you as a threat but isn't going to tip his hand either."

The waitress delivered their drinks to the table. Dasha had ordered "old school." There was a carafe of chilled vodka along with two shot glasses and a plate of cheeses and meats. Mike knew a lot of young Russians

drank like those in the West; mixed drinks or beer. More traditionally, Russians drank vodka straight and took a bite of food after each shot. They also rarely drank without offering a toast.

"You are surprised?" Dasha asked.

"I am. I expected you would order something like the rest of the young people I see around us."

"I do that, too, but sometimes the old ways are best. And after this evening, I wanted something a little stronger and faster."

Mike poured them each a shot from the carafe and held his glass up to Dasha. "To getting through this night without a scratch," he toasted.

Dasha grinned. "That is not a very traditional toast, but considering, I think it is a good one." She lifted her glass to her lips and downed the shot in one gulp. Mike followed suit and they both ate a piece of meat and cheese on a small slice of bread.

After a few minutes of chatting, and two more shots, Mike could feel the warmth of the vodka throughout his body. He had been tenser than he realized.

Dasha's phone chimed.

"It is my security team. They will be outside in just a moment. They want us to meet them there, so they can take us away quickly."

Dasha signaled to the waitress that they were leaving. The drinks would go on an open tab she kept there. She was well known to the staff since the place was so close to her home, she explained. Walking there with one or two members of her security team was usually acceptable to her head of security. They both donned their coats and headed toward the door.

The cold Moscow night air was like a slap in the face to Mike. The warmth in the tavern and the warmth in his body from the vodka had made him relax. Being back outside put him back on his guard.

A black van came down the street as they made it onto the sidewalk.

"Dasha, is that your people?" Mike asked.

"I have never seen that van before, but it must be my people. The text said they were coming right now."

Mike hesitated for a second. The van's windows were blacked out. It kept coming at them slowly.

"This is a set up. We need to MOVE!" Mike shouted as the van's side door opened and three men piled out, each carrying submachine guns. Dasha was a second slower than Mike, but his shout stirred her into action. They took off running down the street.

One of the gunmen took a wild shot at them, causing the few other people outside the bar to scream and duck for cover.

The gunmen were only a few seconds behind them, but this was Dasha's neighborhood. Like most of her neighbors, she liked to get out and walk around. She knew every short cut and alleyway. For a few surrounding blocks anyway. She grabbed Mike's arm and pointed down a narrow opening between two buildings. Before he

had a chance to protest, Dasha bolted down the dark corridor and disappeared. Left with no choice, he took off after her.

Mike was beginning to doubt the move when he came to a solid brick wall. But no Dasha.

"Now where did she go?" Mike grumbled.

"In here and get down," Dasha whispered. Faint moonlight filtered between the buildings and Mike could just make out Dasha in a hidden doorway. She was motioning him toward her.

The door was locked, but they were able to crouch down in the shadows and hide.

"This won't last long," Mike whispered.

"I know. It is easy to miss this gap between the buildings, I thought they might pass it by."

As she finished her sentence, they heard the gunmen run past the alley and down the street.

"It looks like you were right. They didn't see it. But they will double back when they can't find us. We need to move."

"I don't understand what happened. How did they find us?"

Dasha was looking at her phone. A tech wizard, she was looking at the call logs and text logs on her phone.

"It looks like they have hacked my phone. That text didn't come from my people. Somehow, they cloned it," she said finally.

"Do you think they are tracing your phone? Could they get our location from it?"

"Maybe, but that is not as close as you might think. They already know we are in the area. Using triangulation, they can't narrow it down any closer than that. They know which block we are on, but not what street. I would guess that they paid someone in the *Taverna* to keep an eye out for me. That was my neighborhood place. Lots of people know me there."

"Even so, I think you need to ditch your phone. If they are tracing it, we can't get away."

Rather than destroy it, Dasha turned it off and hid it behind a trashcan on the ground. It had security locks on it, so she didn't think anyone else could use it to access her information. But she was loathe to destroy it.

"If they can lock in on the chip, it will have them searching this area while we run away," she said.

"I think we need to keep moving. Your people are still on the way, right?"

"I think so."

"Either way, we can't stay here."

Mike led back up the tiny alley and stopped just before it opened back onto the street. He signaled for Dasha to stay put and he edged to the opening. He looked around as best he could, slowly moving forward, inch by inch.

The street was deserted. Mike couldn't even see any bystanders. The gunshot had spooked everyone back in doors. He motioned for Dasha to follow him. The only thing Mike could think of was to get back to the Metro station and go somewhere else. This was a good-sized station, so they could grab a train going anywhere

and then change trains in the next station. A couple hops and they could be anywhere. The only hurdle was going to be making it onto a train unseen.

Rather than running blindly down the street, the pair walked quickly, staying close to the buildings back up the street toward the Metro Station.

They were halfway there when they heard a shout. Mike didn't understand it, but there was no question in his mind what it meant. Their pursuers had seen them, and they were in trouble. They took off running. Mike hoped Dasha would have another hiding place they could duck into, but he was afraid their luck was running out.

The sound of running footsteps closed in behind them and from the side. Their pursuers had split up looking and were now all converging back on them. Dasha darted out into the street and Mike followed her. As she came to the intersection at the next block a Mercedes sedan slid to a stop on the snow-covered streets.

Two men jumped out of the passenger side of the car and shouted in Russian "*Spuskat'sya*. Get down"

Mike didn't understand what they said but figured out their intent quickly enough when they leveled their own guns and Dasha dived down to the pavement. The newly arrived gunmen opened fire, over Mike and Dasha's heads. These were men from Dasha's security detail. The pursuers returned fire and then scattered. They didn't have the stomach to stand and fight it out.

Glancing around the car they had ducked behind for cover, Mike glimpsed a man standing back from the gunmen chasing them. He was clearly with them, but not holding a gun himself. Mike thought he looked familiar, like the man he saw talking to Dr. Phillips in Washington DC, but in an instant the man was gone.

In the distance, they heard the wail of police sirens. It was over.